



Participation of people with a learning disability in medical research

Scoping review

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About this report



We looked at research about **medical research** and people with a learning disability.



We did this to find out two things

1. Do people with a learning disability take part in medical research?
2. Why do people with a learning disability take part in less medical research?

What is medical research?



Medical research tries to find out more about illness and people's health.

Medical research can help find the best type of treatment for a disease or illness.



A treatment might be:

- medicine
- an operation





- talking therapy

1. Do people with a learning disability take part in medical research?



People with a learning disability have more health problems than people without a learning disability.



But people with a learning disability are less likely to take part in **medical research** than other people.



It is important that the health of people with a learning disability improves.

More medical research with people with a learning disability may help make their health better.

2. Why do people with a learning disability take part in less medical research?



There are many reasons why people with a learning disability do not take part in medical research.



We do not fully understand the health problems that people with a learning disability have.

Without understanding the health problems of people with a learning disability, it is hard to know what research is needed.



This also might mean that less money is given to do research about the health of people with a learning disability.



Before research can happen, it has to be checked by an **ethics committee**. Ethics committees check research to make sure the people who take part will be safe.



Ethics committees sometimes think people with a learning disability are not able to understand enough about research to be able to take part.



Researchers say it is hard to find people with a learning disability to take part in medical research.



Even when researchers find people with a learning disability to take part in research, other people can stop them from taking part.

This could be people like:



- their doctor



- people in their family



- people who support them



It can cost more money and take more time to do research about people with a learning disability.

This might make some researchers not want to do research with people with a learning disability.

What should we do next?

This section is about what we think should be done next.



We think that making easy to understand information about medical research might help everyone to understand what it is.



We also need to think about how to get **consent** from people with a learning disability.

Consent means you agree to something. To give consent you need to understand what will happen and what you are agreeing to do.



Researchers need to spend more time explaining research to people with a learning disability, their families and people who support them.



Researchers also need to plan more time to get consent from people with a learning disability.



More research should be done to find out about medical research and people with a learning disability.

We need to ask people with a learning disability, their families and people who support them what they think.

Summary

Why is medical research important for people with a learning disability?

Medical research is an umbrella term used to refer to a range of research carried out in order to advance our understanding of human physiology and medical conditions and subsequently improve human health (Medical Research Council, 2013a; Royal College of Physicians, 2013). Medical research is particularly important for people with a learning disability because they are more likely to have secondary disabilities and other co-morbid health problems than the rest of the population (Emerson and Hatton, in press, 2014). Some secondary disabilities and health problems may be a result of the condition that is associated with the learning disability, but a significant proportion of the health disparities between people with a learning disability and the general population cannot be explained genetically (Holly & Sharp, 2012; Townsend, 2011). Significantly, people with a learning disability have reduced life expectancy compared to the general population (Emerson et al., 2013).

Are people with a learning disability underrepresented in medical research?

Given that people with a learning disability are disproportionately affected by ill health, in comparison to the general population, it is important that people with a learning disability are a focus for medical research. However, evidence suggests that people with a learning disability are in fact under-represented across all types of medical research.

There is a lack of good quality medical research, in particular clinical trials, specifically targeting people with a learning disability (Feldman, Bossett, Collet, & Burnham Riosa, 2013). In 32 Cochrane systematic reviews of health issues in people with a learning disability and/or Autistic Spectrum Disorders, the median number of studies robust enough to be included was only two. Under half of the learning disability specific studies contained **no** studies robust enough to include, compared to 8.7% in a random sample of Cochrane reviews analysed by Yaffe Montgomery, Hopewell and Shepard (2012).

In the limited cases where people with a learning disability participate in large epidemiological and longitudinal health studies, their learning disability is often not identified and, in any case, the number of people is too low to report specifically on the health of this population (Glover, Emerson & Baines, 2011). Glover and colleagues (2011) have argued that with adjustments, such as targeted sampling, people with a learning disability could be included in studies like these.

Why is there less medical research with people with a learning disability than we would expect?

There are a number of factors underlying the lower than expected amount of good quality medical research with people with a learning disability. The relationship between these factors is complex and some are factors better understood than others. However, it is possible to identify some factors and possible ways of addressing them.

Identification of learning disability and gaps in the data

Several factors mean it is difficult to develop a full picture of health issues of people with a learning disability and therefore for medical researchers and funders to fully understand the importance of researching health problems and interventions:

- No definitive record of the number of people with a learning disability in the UK
- Gaps in learning disability health data that government collects
- People with a learning disability are typically excluded from research studies not specifically targeted at this population
- Inconsistencies in identification and definition of learning disability between studies

It is possible that these gaps affect the funding and research agendas of Government bodies and other major funders. The amount of funding and content of research agendas has the potential to significantly affect the amount of research carried out with this population. This area is something that requires further investigation.

Ethical approval

Studies involving people with a learning disability face more hurdles gaining ethical approval than other research. People with a learning disability can be vulnerable, so there should be checks on research, but it is counterproductive if ethical committees reject research with people with a learning disability due to a lack of understanding of learning disability or an overly protective attitude. Good study design can mitigate against any risks, and gaining informed consent from people with a learning disability and / or family carers is possible.

Recruitment

Even when a study has funding and ethical approval it may still face difficulties. Finding people who are both interested and meet the criteria to be included in a study can be difficult, and even then, people need to give informed consent.

Researchers may face barriers once they have found potential participants. Family carers, clinicians, support workers and others can act as gatekeepers and may refuse to allow access to potential participants. Some research protocols require that both participants and carers give their consent and carers may not be willing to consent on behalf of someone else, even if they are willing to take part. People with a learning disability themselves may also have anxieties and concerns about taking part.

Equally, there is some evidence that researchers do not always fully understand the processes for gaining consent in line with the Mental Capacity Act and acting in the best interests of potential participants. This means that researchers could unnecessarily limit the number of participants in their studies.

Further effects of these issues

It is possible that many of the factors outlined above, in particular the increased time and resources required, may put researchers off considering research with people with a learning disability or from adapting their study design to include people with a learning disability.

Recommendations

Several important recommendations emerged. One key recommendation is improving the understanding of medical research, informed consent and the use of the mental capacity act in this context. This is necessary for all stakeholders: researchers, clinicians, support staff, families and people with a learning disability themselves. Another recommendation is ensuring that researchers and funders are aware of the extra considerations needed when undertaking

research in this population, such as leaving additional time for the consent process. It is also recommended that more research into this topic is carried out to ascertain the viewpoints of family members and/or close friends, as well as people with a learning disability themselves.

Actions on recommendations

This review revealed that, despite support staff having been identified as gatekeepers to participants with a learning disability, there is a gap in the research around the understanding and attitudes of support staff towards medical research and people with a learning disability. In a follow up study, Mencap undertook qualitative interviews to explore this issue in more detail.

We hope to follow this with interviews with people with a learning disability and family carers. The results of these interviews will inform the production of guidance and information for key stakeholders.

Introduction

This document is a literature review into whether people with learning disabilities are underrepresented in medical research and the reasons why this may be the case. The report is structured in two sections that aim to answer:

Are people with a learning disability underrepresented in medical research and does this lead to health inequalities?

What are the barriers that prevent people with a learning disability from taking part in medical research in the UK?

The evidence was drawn from recent research and reports written by academics in the field of medical research and other relevant disciplines. Although this report is aimed at medical research in general, clinical trials (most commonly randomised controlled trials [RCTs]) are given a greater focus. RCTs are considered the 'gold standard' of scientific evidence (Feigen & Howard, 2007).

From the evidence reviewed, we have made some clear recommendations for future research in the area and followed one of these up in the companion piece: *'Participation of people with a learning disability in medical research: Interviews with support staff'*.

1. Are people with a learning disability underrepresented in medical research, and does this lead to health inequalities?

1.1. What is medical research?

Medical research is an umbrella term used to cover many different types of research into human health or disease. It is also known as clinical research. Medical research is carried out to advance our understanding of human physiology and medical conditions and subsequently improve human health (Medical Research Council, 2013a; Royal College of Physicians, 2013). There are three types of study that can be classified as medical research:

Clinical trials are standardised experiments that compare the effects of two or more healthcare treatments/interventions so that it can be determined whether certain treatments or drugs are effective (Medical Research Council, 2013b). They can involve people who have particular health problems, people who are healthy, or a mixture of the two (The Cochrane Collaboration, 2013a; NHS, 2013). The most common form of clinical trials are randomised controlled trials (RCTs), which are designed to compare treatments as fairly as possible through their random allocation of different treatments to participants. RCT's are often referred to as the 'gold standard' of evidence (e.g. Feigen & Howard, 2007).

An example of a clinical trial used in a population of people with learning disabilities: Lott et al. (2011) ran a 2-year randomized, double-blind, placebo-controlled trial to see if a drug for Alzheimer's disease was effective, safe and tolerable for people with Down's syndrome and dementia. During this RCT, 27 people with Down's syndrome and dementia took a daily oral antioxidant supplementation and 26 people with Down's syndrome and dementia took a placebo drug. The authors of this research noted that 'there is a paucity of treatment trials for dementia in Down syndrome in comparison to Alzheimer disease in the general (non-Down syndrome) population' (Lott et al., 2011, pg. 1).

Epidemiological research looks at how often diseases occur within the population and why. Important data that can be collected via this method includes; the prevalence of people with a learning disability within a population and the incidence of new cases (of learning disability) arising in a population over a time period (PHG Foundation, 2003). Epidemiological research can also be used to find out the prevalence of certain health problems within the learning disability population such as epilepsy and mental health conditions (Grey, Pollard, McClean, MacAuley & Hastings, 2010; Lhatoo & Sander, 2001).

Observation/longitudinal studies involve researchers assessing a specific group of people over a period of time. Whilst participants may receive interventions/ treatment as part of normal medical care, unlike clinical trials, participants are not assigned to groups. For example the Health Behaviour in School-Aged Children Survey (HBSC, 2013) is a cross-national study which collects data every four years on the health and well-being of 11-, 13- and 15-year-olds.

1.2. Why is medical research important for people with a learning disability?

People with a learning disability are more likely to have secondary disabilities and other co-morbid health problems than the rest of the population. Physical disabilities, ADHD, challenging behaviour, epilepsy, self-harm and mental health problems, amongst other health conditions, have been found to be more prevalent in people with a learning disability (Cooper, Smiley, Morrison, Williamson, & Allan, 2007; Moseley, Tonge, Bereton & Einfeld, 2011; McCarron et al., 2011). Higher rates of life-style related health problems (e.g. obesity), and reduced social well-being have also been noted amongst people with a learning disability (Townsend, 2011). Significantly, people with a learning disability have reduced life expectancy compared to the general population (Emerson et al., 2013).

Specific genetic causes of learning disability present a higher risk of some health problems. For example, Down's syndrome is linked to an increased risk of dementia and an earlier age of onset, and Prada-Willi syndrome is associated with a higher risk of compulsive behaviours such as skin picking and obsessive compulsive disorder (Dykens & Shah, 2003; McCarron et al., 2011). However, a significant proportion of health disparities between people with a learning disability and the general population cannot be explained genetically. Whether health problems arise due to genetic, environmental factors or a complex mix of the two, there are two major reasons why good medical research is vital in populations of people with a learning disability.

Firstly, knowing the prevalence and incidence of learning disabilities and the rate of disease/conditions in the population is extremely important for effective health care planning and for evaluating the effectiveness of current preventative measures (Feigen & Howard, 2007). As Glover and colleagues (2011, pg. 5) state, 'it is hard to plan for, or manage things that are not counted'. Epidemiological and observational/longitudinal research not only helps understand the full extent of health problems within a population, but can also raise awareness of health problems that professionals may have been unaware of in the past. Robertson, Roberts and Emerson (2010, pg. 24) found that health checks for people with a learning disability lead to 'the detection of unmet, unrecognised and potentially treatable health conditions'.

Secondly, treatments need to be studied within this specific population to understand effectiveness and safety of treatment specifically for people with a learning disability. As Van Spall, Toren, Kiss and Fowler (2007) point out, without true knowledge of an intervention or drug effectiveness, clinicians may offer suboptimal treatment. Clinical trials that have been undertaken within a learning disability population have highlighted that the reaction to certain interventions may differ for people with a learning disability compared to the general population. Hanney and colleagues (2012) enrolled 40 adults with Down's syndrome, half who also had Alzheimer's and half without, in a randomised double-blind trial of the drug memantine. The researchers found that the drug had no effect on people with Down's syndrome, despite it being found to be at least partially effective in improving dementia symptoms in the general population (Raina et al., 2008).

In another example, risperidone, an antipsychotic medication, had already been used extensively in people a learning disability for a range of conditions including non-psychiatric disorders such as self-injurious or destructive behaviour. When the drug was eventually tested in this population, the research revealed that the effectiveness of the drug was questionable for people with a learning disability, despite many people with a learning disability being subject to its

negative side effects for years (Singh, Matson, Cooper, Dixon & Sturmey, 2005). Tryer and colleagues (2008) similarly found that both risperidone and haloperidol (another antipsychotic drug) were **less** effective than a placebo drug to treat aggressive challenging behaviour in people with a learning disability. Feldman, Battin, Shaw and Luckasson (2012) argue that if people with a learning disability were included in the original antipsychotic drug trials, then these findings may have been noted earlier on.

Research can, therefore, help build an understanding of the health needs and inequalities experienced by people with a learning disability and, moreover, an evidence-base for the effectiveness and efficacy of treatments for this group of people. A strong evidence base can, in turn, inform clinical guidelines¹. In addition, the benefits of participation in medical research by people with a learning disability are not only scientific. As McDonald and Kidney (2011) argue, including people with learning disabilities in research allows opportunity for (often excluded) people to make socially valued contributions.

1.3. Are people with learning disabilities underrepresented in medical research?

Despite the need for people with learning disabilities to be included in medical research, it is repeatedly documented that they rarely are (Donnelly et al., 2013; Lui, Elliot & Oullette-Kuntz, 2006; Turk et al., 2012). To test this assumption, we looked at the volume and quality of learning disability research included in a selection of Cochrane reviews.

Cochrane reviews are systematic reviews of reliable and valid primary research in human health care and policy (The Cochrane Collaboration, 2013b). Each Cochrane review assesses the effect of a medical procedure or intervention by gathering all primary research on the subject, and then publishing a conclusion based on this research. Cochrane reviews only include studies that meet pre-defined criteria for inclusion (Higgins & Deeks, 2008). They 'are internationally recognised as the highest standard in evidence-based health care' (The Cochrane Collaboration, 2013b).

We identified 32 reviews published between 2008 and 2013 that addressed health issues in populations of people with learning disabilities and/or Autistic Spectrum Disorders (ASD). Topics of review included weight reduction programs, medication for dementia, pharmacological and non-pharmacological interventions for epilepsy, amongst others. In each review, the median² number of studies robust enough to be included was only 2, and this fell to 0.5 studies when excluding the 11 reviews that focused on ASD.

Ten (48%) of the learning disability systematic reviews (not including ASD studies) found **no** studies reliable enough to include in their reviews. This is compared to an average of just 8.7% reviews with no included studies in a random sample across all Cochrane reviews in 2010 (Yaffe, Montgomery, Hopewell & Shephard, 2012). Additionally, all but five reviews of interventions with people with learning disabilities and/or ASD commented on the inadequacy of the methods,

¹ It is worth noting that research by Mizen, Macfie, Findlay, Copper and Melville (2012) has shown that findings from previous medical research about people with a learning disability are mostly **not** being incorporated into current clinical guidelines. This is a further source of inequality that needs to be addressed.

² The median was used here instead of the mean to prevent skewing of results.

sample size and/or outcome measures used. It is clear that there is a lack of adequate medical research into health prevention and interventions with people with a learning disability.

The Cochrane reviews used in the analysis above included studies that focus solely on people with a learning disability to see an effect within this specific population. However, it is also important to know whether people with a learning disability participate in medical research that does not focus specifically on people with a learning disability. If people from this population participate in research and the researchers are aware of their disability, in some circumstances it may be possible to run a subgroup analysis to see the effect of the intervention specifically upon the participants with a learning disability. Subgroup analysis is common in RCTs and can be effective if planned from the start (Sun et al., 2011). Common subgroups are 'males or females, different racial groups, different age groups, or subjects with different baseline disease severities' (Peduzzi, Henderson, Hartigan & Lavori, 2002, pg.33).

However, although it is hard to know without a full investigation whether people with a learning disability participate in research that does not focus specifically on people with a learning disability, the evidence suggests that they do not. As Feldman and colleagues (2012, pg.2) write, the prevalence of this population in medical research is considered unrepresentative. If people with a learning disability wanted to take part in medical research, factors such as exclusion criteria and inaccessible information are likely to prevent them from doing so (see **Section 2** for more information). Even if people with a learning disability are taking part in research, if their learning disability is not properly assessed and recorded by researchers - as in 69.9% of the developmental studies randomly selected by Feldman et al. (2012) - no findings about people with a learning disability can be drawn.

The same problems have been found in longitudinal and epidemiological research. The Health Survey of England ([HSE], NatCen, 2013) is a large-scale longitudinal study used to monitor the health of the English population. However, it does not effectively identify people with a learning disability or target a large enough sample for the data to be used to report specifically on people with a learning disability. Glover et al. (2011) suggest that targeted sampling and appropriate measures to identify people with a learning disability within this study would enable people with a learning disability to be adequately sampled.

Overall, not only are people with a learning disability under-researched as a population, it is also probable that they are less likely to take part in any type of medical research. The next section focuses on why people with a learning disability are underrepresented in medical research in an effort to see how their participation can be increased.

2. What are the barriers that prevent people with a learning disability from taking part in medical research in the UK?

2.1. Barriers external to the research process

2.1.1. Understanding population need and demand

Currently, there is a lack of knowledge around the health problems and medical needs of people with a learning disability. Without this evidence, it is difficult for medical researchers and funders

(see **Section 2.1.2**) to fully understand the importance of researching health problems and interventions in populations of people with a learning disability. Lhatoo and Sander (2001) argue that many studies fail to address or define subpopulations of learning disabilities at all. As noted above, Glover and colleagues (2011) recommend that epidemiological and longitudinal research should include samples of people with a learning disability to aid understanding of this populations' health needs and demands.

A major problem in this area is the lack of a definitive record for the number of people with a learning disability in the UK (Emerson et al., 2013). This basic prevalence rate is a very important base for further research. The field is further hindered by differences in diagnostic criteria, definitions and screening methods used to identify learning disabilities across different studies. This problem is exemplified in studies of co-morbidity between learning disabilities and mental health, where figures range as far as 5.7% to 47% (Giraud-Sanders, 2011; Grey et al., 2010). Non-standardised methodology and differing approaches to identifying learning disability (and/or mental health issues) means that research is often difficult to compare, and blurs, rather than aids the picture of the health problems faced by people with a learning disability.

2.1.2. Research agendas

In this report, a 'research agenda' refers to the topics of research considered important by different bodies. Governments, organisations and individuals can all have research agendas. The processes that set or underlie research agendas are vast and complicated, including financial, political, historical and many other factors. This makes it difficult, if not impossible, to fully determine the precise influence they have upon medical research with people with a learning disability. Nonetheless, this sub-section aims to outline the most important factors that determine whether learning disability is included within the agenda of researchers and research bodies. Drawing on work by Townsend (2011), three overarching factors have been identified:

Human rights

Townsend (2011, pg. 115) argues that research agendas should be guided by human rights principles 'contained within international- and country-level statements and declarations, particularly as they relate to research'. Townsend (2011) cites research on topics such as 'autonomy, and independence; non-discrimination; community living; full and effective social participation and inclusion...' as examples of this, further stating that the results of this research, in turn, should inform human rights approaches and legislative reform.

The human rights of people with a learning disability taking part in medical research are protected through ethical guidelines, however the balance between protection of the vulnerable and promotion of self-determination is often hard for researchers to achieve (McDonald & Kidney, 2012). See **Section 2.1.3** for further discussion of ethical considerations in medical research. See also Iacono and Carling-Jenkins (2012) for a discussion of the human rights context for ethical requirements involving people with intellectual disability in medical research.

National and state priorities and policy

National and state priorities and policy influence the depth and breadth of the research agenda in terms of vision and funding (Townsend, 2011). In the UK, Valuing People (Department of Health, DH, 2001) and its follow up, Valuing People Now (DH, 2009) were the first government strategies in 30 years for people with a learning disability. Page 59 of Valuing People Now (DH,

2009) highlighted that the key issues for the NHS are to achieve 'full inclusion of people with learning disabilities in its mainstream work on reducing health inequalities' and ensure 'high-quality evidence-based specialist health services' for people with a learning disability. As part of this strategy the Learning Disability Research Initiative (LDRI) was created, out of which, 13 studies were funded between 2001 and 2003 (Grant & Ramcharan, 2007). Whilst six of these had 'good health' as an objective or partial objective, Grant and Ramcharan (2007, pg. 122) described the methods used in these studies as 'in the mid-range of the implied hierarchy of evidence', which means this research is unlikely to add anything substantial to the evidence base.

Although these strategies are no longer in effect, *Improving Health and Lives: Learning Disability Observatory (IHAL)* was funded by the Department of Health in 2010 and is now part of Public Health England (PHE). IHAL brings together numbers collected about people with a learning disability and have made recommendations about gaps in the current data (PHE 2013), including:

- The need to include samples of people with a learning disability in longitudinal medical research
- Expanding GP reporting so that 'they show specifically how well people with learning disabilities are being looked after'
- Hospital patients reports should highlight whether a patient has a learning disability or not
- 'GPs should set up a national audit system to see how many new health problems they find in Health Checks for people with learning disabilities'

These suggestions will potentially advance the inclusion of people with a learning disability in longitudinal and epidemiological research, which will aid understanding of health problems experienced by people with a learning disability. In turn, this will hopefully drive the need for medical trials in this population.

Funding

It is hard to ascertain the exact impact of funding sources upon inclusion of people with a learning disability in research, although it is clear that this plays a strong role. Finance for medical research can come from a variety of sources including medical research charities, the government and pharmaceutical companies. Britain's three biggest biomedical funders are the Medical Research Council (MRC), Cancer Research UK (CRUK) and the Wellcome Trust. According to the Association of Medical Research Charities (2012), medical research charities contribute about 'one third of all public expenditure on medical research in the UK'.

Funding agencies set key objectives. For example, MRC - a publicly funded organisation that supports medical research in the UK - lists 14 research initiatives that it currently funds, one of which is Autistic Spectrum Disorders (ASD). Additionally, under the initiative 'mental health', learning disability is noted as a priority area, which is a promising sign. The National Institute of Health Research (NIHR, n. d.) is an organisation, funded by the Department of Health, which aims to 'maintain a health research system in which the NHS supports outstanding individuals, working in world class facilities, conducting leading edge research focused on the needs of patients and the public'. One of NIHR's roles is to commission and fund health research, which focuses on major topics including cancer, dementia and diabetes. Although learning disability is not a major topic, the NIHR School for Social Care Research has funded some work by IHAL.

Notably, as health is a devolved topic in the UK, major topics of focus vary between England, Wales and Northern Ireland.

The Wellcome Trust (n. d.) does not list research initiatives, but has 6 broad funding areas which cover; Biomedical science, technology transfer, international, public engagement, medical humanities and society and ethics. Although it is unclear whether learning disability is an objective for the Wellcome Trust, recent research within this population has been funded through this organisation. Under their strategic awards scheme designed to 'facilitate awards not possible under existing schemes', research into how learning disabilities develop in people with Down's syndrome was funded in 2012. This was won through a bid by the London Down Syndrome (LonDownS) Consortium's, which shows the importance of researchers with special interest propelling further research in the area.

The pharmaceutical industry is another large funder of medical research, specifically clinical trials, to test new drugs/products. It has been found that drug trials funded by the industry in the USA are more likely to lead to positive outcomes than those funded by other sources (Bourgeois, Murthy, & Mandl, 2010). As pharmaceutical companies fund research into their drugs and treatments, it is unlikely that populations of people with a learning disability would be targeted unless the drug was aimed specifically at these people. More research is needed to ascertain what impact this has on the inclusion of people with a learning disability in medical research.

Overall, more research is needed to get a comprehensive picture of how funding streams impact on inclusion of people with a learning disability in medical research. This initial scoping suggests that whilst some funding agencies have recognised specific health needs of people with a learning disability, this group of people have not been recognised as major priority across most topics of medical research. It is likely, given the increased research costs and time associated with including people from diverse populations such as learning disabilities (Feldman et al., 2012), that funders would not drive inclusion of learning disability populations where this objective has not been set.

2.1.3. Ethical considerations

Ethical considerations are arguably the most complicated facet of research involving people with a learning disability. Promoting participant self-determination and obtaining fair and fully informed consent, whilst adhering to ethical standards can be a major barrier to research in this population (Swaine, Parish, Luken & Atkins, 2011). Researchers have to maintain a balance between protection of the vulnerable and promotion of self-determination (McDonald & Kidney, 2012).

Core to research ethics is the concept of vulnerability. Lange, Rogers and Dodd (2013) point out that all research participants are vulnerable to a degree; however, there are certain people or groups of people who are more susceptible to specific kinds of harm or threat. People with a learning disability are considered a vulnerable group as they could potentially be exploited due to their diminished capability to identify and protect their own interests. Historically, people with learning disabilities have been exploited for research purposes. Two examples cited by The University of Sheffield (2013, pg. 2) include 'ineducable' children who were given masses of sugary foods to study the decay of sugar on teeth between 1945 and 1953 in Sweden, and

‘retarded’ children in Willowbrook School in the US deliberately infected with hepatitis during the 1950s and 1960s in order to study the progression of the disease (Gustafsson et al., 1954; Krugman et al., 1962). Such cases highlight the need for strict ethical guidelines. Historical exploitation such as this may contribute to the anecdotally reported suspicion of medical research from some people with a learning disability and/or the gatekeepers who grant them access to research. Though, whether that is the case, and whether this suspicion does actually exist is something that needs further investigation.

Nowadays, the majority of trials exclude people who are considered to lack capacity to consent (Boyd, Vollenweider, & Puhan, 2012; Van Spall et al., 2007). However, this may impinge on a persons’ choice to take part in research, especially if their capacity to give consent is not properly assessed. There is some evidence that shows that those with mild learning disabilities may have a better understanding of medical trials than researchers believe. Using a standardised consent capacity assessment tool, Fischer, Cea and Davidson (2006) found that participants with mild learning disabilities had results comparable to participants without learning disabilities on questions reflecting understanding of research procedures, appreciating the nature of the protagonist’s problem, and appreciating the consequences of research participation. In this study, the participants with moderate learning disabilities performed better than the researchers anticipated.

The Mental Capacity Act (MCA) was introduced in 2005 in England and Wales to give a statutory framework to research with people who lack capacity make their own decisions (i.e. give consent). It aims to define the limits at which people lack capacity and, applying it to the research context, states that until all steps have been made to help the participant to take part, researchers should automatically presume they have capacity to consent. Additionally, any decision that is reached when an individual is deemed to lack consent must be made in the person’s best interests.

Presuming that the researchers have an interest in including people with a learning disability in their research, there are several difficulties that emerge from these ethical considerations:

Firstly, it is can be difficult to obtain ethical approval to do research with people with a learning disability (Iacono & Murray, 2003; Nicholson, Colyer & Cooper, 2013). A full ethics review is required in most cases where vulnerable groups are being researched, as well as in cases where participants are deemed to lack capacity to consent (Economic and Social Research Council (ESRC), 2010). The University of Sheffield (2013) writes that it is highly likely that these ethical procedures, which are designed to protect those who are vulnerable from harm, discourage researchers from using participants with learning disabilities. D’Abrera, Holland, Landt, Stocks-Gee and Zaman (2013) documented the ethical and methodological challenges they encountered when they undertook an intrusive study (involving brain scanning) in participants with Down’s syndrome. Two main questions emerged that the researchers needed to answer sufficiently to prove that their research was scientifically justified. Firstly, did the research have to involve these participants (in this case people with Down’s syndrome) or could the question be answered in another population or in another way? The second question focused on the weighing up of the benefits over the burden on the participants. These two questions required considerable thought from the researchers, before answering to an ethics committee. This highlights the complexities involved in medical research with people with a learning disability.

Second, is the problem of gaining informed consent from people with a learning disability. Consent giving can be a very complicated process, especially when people with severe or profound and multiple learning disabilities are participating (Iacono & Murray, 2003). Even researchers who are committed to involving people with learning disabilities in their research struggle to understand how to address ethical dilemmas (e.g. Iacono and Murray, 2003; McDonald & Kidney, 2012). Although the guidance published to aid understanding of the MCA may appear helpful, in reality it has been found to be extremely complex (The University of Sheffield, 2013). However, it is important that people with a learning disability are empowered to give consent. Simple steps such as accessible information and direct contact (via face-to-face meeting or phone) have been found to aid this process enormously (Oliver-Africano, Dickens, Ahmed et al., 2010).

Additionally, in cases where the individual has been found incapable of giving consent, proxy consent must be obtained. This adds another layer of difficulty; with some ethics committees asking for all participants who cannot give consent to be excluded from research (d'Abrera et al., 2013; Nicholson et al., 2013). Where permission is granted, it has been found that those giving consent by proxy are less likely to agree to the research than the participants themselves (Oliver-Africano et al., 2010; Swaine et al., 2011). There is also an argument that researchers may become overly reliant on substitute consent givers and that, in some cases, they not might make the best choice for the individual (Dalton & McVilly, 2004).

Overall, it is clear that the area of informed consent is very complex. In research where risks are high and benefits low, it is very important that ethical justifications are considered fully, however this should not lead to all people with learning disabilities being automatically excluded from the majority of medical research (Fischer et al., 2006). Unfortunately, the diversity of ethical approaches to research with people with a learning disability does nothing to aid this problem. McDonald and Kidney (2012) suggest that collaboration between academics and people with a learning disability along with may help to strengthen this field.

2.2. Research design barriers

2.2.1. Medical research inclusion/exclusion criteria

Inclusion and exclusion criteria are the specific guidelines outlined in research that specify who can and cannot take part in the study. In the case of clinical trials, sometimes participants are required to be healthy, whereas sometimes they need to have a specific medical condition to take part. This section will focus on medical trials; the type of research most likely to not include people with a learning disability due to inclusion/exclusion criteria.

Unlike older people, who have been routinely excluded from medical trials due to age restrictions, having a 'neurological disability' or 'cognitive impairment' is not as common a reason for trial exclusion (Boyd, et al., 2012; Van Spall et al., 2007). In a review of 161 medical trials, Boyd and colleagues (2012) found that neurological disability was an exclusion criterion in 2% to 4% of the trials depending on the disease of study (excluding clinical trials of stroke). Additionally, Van Spall et al. (2007) assessed the eligibility criteria of 283 randomly selected high-impact medical journals, finding that cognitive impairment was given as a reason for exclusion in 7.8% of the trials.

However, 85.5% of the trials assessed by Van Spall and colleagues (2007) excluded people on the basis of not being able to give consent and 81.3% if they had specific types of medical co-morbidities, both of which are much more likely in people with a learning disability (Tadema & Vlaskamp, 2009). People with multiple medical conditions are excluded from trials because their other conditions and/or the medicine they take may have a confounding impact on the results on the trial.

Whilst the importance of excluding confounding variables to properly test the efficacy of an intervention is recognised, it is similarly vital that people with a learning disability are not excluded from mainstream research where their medical condition will not impact on the effects of the intervention.

Equally, where people with a learning disability 'represent the wider population which suffer from the condition of study' it is also important that they are not automatically excluded (Van Spall et al., 2007, page 1237). Some researchers argue that by excluding some people from research, it is not being representative of the population **and** it denies their right to participate in research. Furthermore, whilst these clinical trials may look at the efficacy of a treatment (whether it actually works), they do not test the effectiveness of the treatment in the general population. As argued by Marley (2000), the very people who are excluded from trials because of confounding factors such as multiple morbidities and/or being too young or too old, are exactly the type of people who are most likely to have the results of the study applied to them. Thus, exclusion criteria in clinical trials can in fact inhibit the effectiveness of the research. As Van Spall et al., (2007) point out, without true knowledge of an intervention and drugs effectiveness, clinicians may offer suboptimal treatment.

2.2.2. Recruitment and methodological barriers

Aside from the ethical considerations outlined above, researchers have to plan for and acknowledge that there are also methodological implications of including people with a learning disability in medical research. Doing research with people with learning disabilities not only takes extra planning, resources and time at the planning and ethical submission stages, but also when the research is underway. Thus, whether a research organisation can respond to research needed in this population will depend on their research knowledge and research capacity.

Recruitment

Recruiting people with a learning disability into research can be a complex process (Nicholson et al., 2013). Even in cases where the researchers seek out people with learning disabilities, recruitment of this group of people can be very difficult. Oliver-Africano and colleagues (2009) tried to recruit people with a learning disability into a RCT of two antipsychotic medications. Over a 2-year period, Oliver-Africano and colleagues (2009) were only able to recruit 54 participants with a learning disability out of a planned sample of 120. Other researchers have documented similar difficulties with recruitment of people with a learning disability (e.g. Hanney et al., 2012; Tyrer et al., 2008).

The main barriers to recruitment cited by both Africano and colleagues (2009) and Tyrer and colleagues (2008) were from potential participants' primary carers and their clinicians. These people are gatekeepers, from whom researchers need to be granted access before they can enrol participants their studies. This area is explored in greater depth in **Section 2.2.1**. Strict inclusion

criteria, which is a prominent feature of RCT's, was another reason for Africano and colleagues' (2009) low recruitment rate. Although strict inclusion criteria often cannot be avoided (see **Section 2.1.2**), other barriers such as non-assenting gatekeepers, can be lessened through various strategies discussed below.

Svensson, Ramírez, Peres, Barnett and Claudio (2012) investigated the reasons why people from ethnic minorities did not want to take part in research. They found that all ethnicities were more likely to participate in research if they were approached by their own doctor and or medical school/hospital and, compared to white people, those from minority ethnicities were significantly more likely to participate when asked by a community organisation. Using targeted, active (rather than passive) recruitment strategies shows the importance of researcher initiative when undertaking research with people with a learning disability (Kao et al., 2011).

Researchers have highlighted the importance of building relationships with gatekeepers and participants before the study begins, preferably through face-to-face meetings. This allows the researcher to fully explain study aims, safety concerns, the concept of informed consent and any other details about the research (d'Abreba et al., 2011; Nicholson et al., 2013). It also lets participants and their families get to become familiar with the researchers before the study commences. In their research, Nicholson and colleagues (2013) used DVD information packs and photos of researchers to inform and prepare participants for the research. Other research has shown that using informal relationships to initiate contact and/or ensuring familiarity with medical providers who offer research participation can improve recruitment of people diverse populations (Kao et al., 2011; Svensson et al., 2012).

Thus, it is important that researchers think about the recruitment process as involving more than just the participant. Full consideration of the different facets in recruiting people with a learning disability, whilst time consuming and requiring extra planning, are very important for successful recruitment. Swaine and colleagues (2011) managed a 75% enrolment rate by using methods mentioned in this document. For a comprehensive list of recruitment strategies see Nicholson et al. (2013, pg. 653).

Other methodological barriers

Throughout all stage of a study, researchers need to be aware of how their research needs to be adapted to suit participants with a learning disability. D'Abrera and colleagues (2013) talk about the importance of anticipating these hurdles and incorporating extra time and flexibility into research with this population. For example, information provided at all stages throughout the project has to be accessible to all participants. The level of accessibility and type of adaptation needed will differ between participants.

Some components of the research process, which may not be an issue with participants in studies of the wider population, may adversely affect participants with a learning disability. For example, financial rewards may negatively affect people with a learning disability who are in receipt of benefits, being involved in research may impact upon whether a participant's can receive direct payments for personal care. Funding for someone to support participants and for suitable transport may also have to be considered (The University of Sheffield, 2013).

Although people with a learning disability are not necessarily excluded from epidemiological studies in the same way that they can be from clinical trials, it is likely that the same problems

with recruitment and accessibility exist. If people with a learning disability are included in a study without extra consideration, standard methods of data collection may exclude them or cause them to answer in an unreliable way. As Anderson (2011, pg.33) writes, ‘enablement of disability in research is an ethical, legal, and methodological imperative’. Achieving this goal is complex but, as shown in RCT’s of people with a learning disability (e.g. Hanney et al., 2012; Lennox et al., 2010; Lott et al., 2011), achievable. Funders, researchers and clinicians all need to be aware of the extra ethical and methodological considerations needed to enable people with a learning disability to take part in research. Without this full consideration, it is highly unlikely people with learning disability will participate in medical research.

2.3. Individual/perceptual barriers

2.3.1. Gatekeepers

In the context of medical research, a gatekeeper is someone who controls access to participation in research (Jupp, 2006). Without permission from the gatekeeper it is unlikely that the individual or group of people will be able to take part in the research. For people with a learning disability, there may be several different gatekeepers that need to be approached. This includes primary clinicians, support workers and family members and carers.

Primary care and support staff

Clinicians and people working in primary care are potential gatekeepers of medical research for a vast number of people with learning disabilities. As Fletcher, Gheorghe, Moore, Wilson, and Damery (2012, pg.2) write, ‘the clinicians’ role is clearly important as patients can only consider taking part in trials when asked to do so’. Although recruitment into clinical research studies by clinicians has been increasing -the NIHR annual league table shows that 630,000 people took part in trials in 2012/13, which was a 7% rise from 2011/12 (NIHR Clinical Research Network, 2013)- it is unclear how many people with a learning disability are recruited into research by their clinician. However, as Oliver-Africano and colleagues (2010) suggest, it is unlikely that very many clinicians try to recruit patients with learning disabilities. Their study found that clinicians did not believe that RCTs are not the best type of methodology to use when researching medical problems in people with a learning disability. Additionally, there was a belief that ‘humanity’ was better than ‘experiment’ and that people with a learning disability should be protected.

In Tyrer and colleagues’ (2008) RCT of two drugs used to treat challenging behaviour, 30 participants were refused participation by their psychiatrist. These patients were already taking antipsychotic medication and their psychiatrists would not let them undergo the trial washout period. A washout period is the time in which participants stop their current treatment so that the first drug can be washed out of their system. It is unclear whether this level of refusal is normal.

Support workers are another set of important gatekeepers to recruiting people with a learning disability into research. D’Abrera and colleagues (2013) found that support workers were reluctant to help recruit participants with a learning disability into their RCT because of the fear that they would be legally accountable if anything went ‘wrong’ and they did not want to upset participants’ families.

Oliver-Africano and colleagues (2010) are hopeful that the viewpoints of clinical gatekeepers will change in the future. In the meantime there are methods that have been employed to increase the likelihood of gatekeeper assent. Robotham, King, Canagasabay, Inchley-Mort and Hassiotis (2011) found that professionals were more likely to view RCTs positively if they were designed to have a practical purpose and likely to aid progress of the individual involved. Involvement of clinicians within the research has also improved assent. For example, Turk and colleagues (2012) had a GP on their steering group who did some personal telephoning to other GPs to increase recruitment.

Another potential problem is the lack of awareness and understanding of the health problems faced by people with a learning disability amongst clinicians. Mizen, Macfie, Finlay, Copper and Melville's (2012) research into clinical guidelines showed a lack of content that highlights the different disease patterns, supports and interventions, and adjustments to healthcare needed by people with a learning disability. It is plausible that improved inclusion of people with a learning disability in clinical guidelines, alongside an increased understanding of their increased health problems through epidemiological/longitudinal studies will aid awareness of this important issue.

Scientific gatekeepers

McDonald, Keys and Henry (2008) write some groups of people, including researchers in this area and ethics committees, act as scientific gatekeepers 'who determine the type and representation of our empirically based knowledge of people with intellectual disability' and includes (McDonald et al., 2008, pg. 466). There are tensions between researchers, who mostly favour choice and dignity of risk and ethics committees who favour restrictions.

Parents and other proxy consent givers

Research has shown that in cases where parents or guardians have to give proxy consent because the individual lacks capacity, they are often less likely to agree to the research (e.g. Oliver-Africano et al., 2010). Major concerns from carers include the ethics of randomisation and medication withdrawal for the person they are consenting for. Robotham et al. (2011) also found that trial procedures, especially random allocation, were very hard for carers and people with a learning disability to understand. Family carers wanted to know what would be gained from the research.

2.4. Participant barriers

This section aims to answer why, when all adaptations have been made, people with a learning disability do not take part in research.

Nicholson, Colyer and Cooper (2013) used semi-structured telephone interviews with 10 adults with a learning disability to see what would stop them taking part in research. They found that some participants were anxious about taking part in the research. Two were worried that the right to take part was not a free choice for them to make. This highlights the importance of fully explaining the consent procedure in an accessible format. Others had difficulty understanding the concept of research, which is a finding replicated elsewhere (Fischer et al., 2006; Robotham et al., 2011). The understanding of trial procedures, especially the use of random allocation and placebos can be hard for people with a learning disability to understand. Once again, accessible and clear information that highlights the importance of how research will help other in the future is important.

Including people with a learning disability within the research design and delivery can be a useful method to improve accessibility of research. Turk et al. (2012) used a fully inclusive design to aid the process of their RCT. As well as people with a learning disability participating in the research, people with a learning disability and their carers were hired to work as researchers in the project and also sat on the steering group. This meant that the accessibility of the project had to be considered throughout the entire research process. Although this method was more expensive, the value of the research was seen to outweigh the costs.

Another reason for not taking part that emerged from Nicholson and colleagues' (2013) research was that the participants were too busy to fit the research into their daily schedule. This finding was similarly noted by Turk and colleagues (2012) who had 38 drop-outs from their study. They found that those more likely to drop out were the more physically able participants as they were more likely to have jobs and to move house, job and/or GP. This highlights the need for flexibility and keeping regular contact with participants.

One further reason given by an interviewee was that they were simply disinterested in taking part in the research (Nicholson et al, 2013). Out of 180 eligible participants in Tyrer and colleagues' (2008) RCT, 10 were excluded after registration because they were against or refused trial medication and 7 were excluded because they were antagonistic towards RCT's. Thus whilst accessible information about the importance of research may be useful in some circumstances, it is likely that some people with a learning disability, as in the general population, will never have an interest to take part in medical research. As in the general population, they are entitled to this choice.

3. Sense checking

To complement the literature review above, and reduce the chance that any significant issues were missed, we asked a small group of experienced academics who specialise in research with people with a learning disability to comment on our findings. They confirmed that they had either personal or second-hand experience of many of the issues outlined above. They also highlighted further gaps in the evidence base that have been fed into the recommendations below.

Conclusion and Recommendations

The evidence shows that people with a learning disability are underrepresented across all medical research despite having higher rates of physical and mental ill-health than the general population. Given the significance of medical research for effective health care delivery and treatment, and the greater health needs of people with a learning disability, it is highly likely that the lack of medical research in this population perpetuates, and may even increase, the health inequalities faced by people with a learning disability. For example, medical research into antipsychotic medication has highlighted the use of suboptimal treatments for people with a learning disability because no robust evidence of alternatives was available (Singh et al., 2005; Tryer et al., 2008).

This review of the literature found a multifaceted and complex picture of the barriers to medical research into this population. People with a learning disability are typically excluded from research studies not aimed at this population due to recruitment methods and/or strict exclusion criteria (in the case of clinical trials). Even in instances where researchers are motivated to recruit people with a learning disability, real and perceived difficulties of getting informed consent from people in this population can make it hard to gain approval from ethics boards. Additionally, the attitudes and understanding of key 'gatekeepers' such as clinicians, family members and supporters towards people with a learning disability in medical research lead to these people blocking access unnecessarily (although additional considerations on the part of the researcher can help alter this). Prominently, an issue that cuts across all of the aforementioned factors and all stakeholders is a lack of understanding of the mental capacity act and how it applies to research.

As well as these barriers there are more systematic issues with the inclusion of people with a learning disability in epidemiological and large-scale studies and the lack of joined up government data. These mean that the true picture of health issues in people with a learning disability is difficult to ascertain. This may feed into a lack of urgency in research agendas of both government and non-governmental bodies, and hence a lack of funding for research with people with a learning disability.

Based on the findings from the literature review and sense checking discussions with academics a number of recommendations have been identified which should address the identified barriers.

4. Recommendations

Government

1. Ensure consistent identification of learning disability across health and social care services to facilitate a comprehensive picture of the health of people with a learning disability.

Third sector organisations

2. Raise the awareness and understanding of health inequalities faced by people with a learning disability.

3. Produce easy-to-understand neutral information about medical research for relevant stakeholders: clinicians, support staff, families and people with a learning disability themselves. This information should contain:
 - A definition of medical research and different types of medical research
 - What involvement in different types of medical research entails
 - o Including information on how informed consent should be assessed
 - Potential benefits and risks of participation.

This information should be made available in various formats to ensure it is accessible for all audiences.

4. Improve the understanding of informed consent and the use of the mental capacity act in this context amongst frontline support staff, clinicians, researchers, potential participants with a learning disability and their families and/or close friends; essentially anyone who may play a part in the consent giving process.
5. Produce good practice advice and information for researchers outlining the additional considerations needed when researching this population.

Researchers

6. Use guidance available to ensure additional considerations are made at the design stage and full inclusion and engagement with participants and family carers. For example, leaving ample time for recruiting participants with a learning disability allows the research to be fully explained to all parties and for capacity to consent to be properly determined.
7. Attempt to identify people with a learning disability in epidemiological and other large-scale studies and use targeted sampling to ensure evidence about learning disability can be gathered from these studies.
8. Present all relevant parties with clear information, as explained in recommendations 3 and 4. In addition, researchers should meet with potential participants prior to consent to explain the research in person, as well as following up on people who cannot attend sessions.
9. Researchers need to consider the bigger picture, such as how the research will affect the participant's life. For professionals, researchers should consider how the intervention will fit into the current delivery of service.

Further research

10. It is also recommended that further research be carried out to ascertain the views and understanding of family carers, as well as people with a learning disability themselves, towards medical research. We have interviewed service managers and support staff on this topic; the results of which can be found in the complementary report '*Participation of people with a learning disability in medical research: Interviews with support staff*'.

5. Next steps and related work

Following on from this review, and to inform the production of future guidelines and advice, we conducted a series of interviews with frontline care staff to explore their views of medical research involving people with a learning disability. The results of these interviews will be available in the separate report: *'Participation of people with a learning disability in medical research: Interviews with support staff'*.

In future, we intend to complement this with interviews with people with a learning disability and family carers.

This research complimented a project commissioned by the Mental Health Research Network ([MHRN] forthcoming) which, as part of a wider mixed methods approach, interviewed key stakeholders including clinical trial investigators, statutory and third sectors organisations, clinicians and a small number of people with a learning disability who have participated in clinical trials. It contains additional recommendations for a range of stakeholders.

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