The Association between Contact and Intellectual Disability and Mental Health Literacy and Stigma

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Thesis declaration form

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signature:

Name: Rachel Blundell

Date:

Overview

This thesis examines the association between personal contact with people with intellectual disabilities and schizophrenia and literacy and stigma of the lay public. Contact is seen as a key route to tackling stigma, however the research in intellectual disabilities and mental health is limited by many previous studies assessing contact as present or absent only.

Part one is a literature review examining the relationship between personal contact with people with intellectual disabilities and attitudes. There has been limited research examining public attitudes towards people with intellectual disabilities, especially in comparison to the attention given to perceptions of mental illness. The findings indicate contact with people with intellectual disabilities generally has a positive effect on lay attitudes, but that the relationship is affected by a number of variables. Quality of contact in particular may be important.

Part two is an empirical paper investigating whether contact as a nuanced variable, including the factors: closeness, frequency and nature, is better than a binary variable assessing contact as present or absent only, in explaining the relationship between literacy, causal attributions and stigma, for both intellectual disabilities and schizophrenia. The results indicate future research examining contact should consider other factors, particularly the closeness of the relationship. The findings are considered in relation to anti-stigma campaigns, the evidence base and directions for future research.

Part three is a critical review of the thesis. The review examines the concepts and methodology used and considers wider issues relating to stigma research. The review concludes with personal reflections on the process of conducting the thesis.

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Part 1: Literature Review

The Relationship between Contact and Lay Attitudes towards People with Intellectual Disabilities: A Review

Abstract

Aims: The relationship between contact and lay people's attitudes towards people with intellectual disabilities is under-researched. The purpose of this review is to bring together the existing research in this area and examine its methods and findings.

Method: The academic literature was searched via PsycINFO, Scopus, Web of Science, Medline, CINAHL and Social Policy and Practice, to identify articles which considered lay attitudes towards people with intellectual disabilities and assessed the role of prior contact.

Results: Twenty-three articles (reporting on twenty studies) were included in the review. The literature indicates that contact with people with intellectual disabilities generally has a positive effect on attitudes of the general public, but that the relationship is affected by a number of variables. The quality of contact, in particular, could be important.

Conclusions: Further research is required to examine the relationship between contact and attitudes, and address limitations in the measurement of contact to date. The results will be of benefit in considering how to reduce negative attitudes towards people with intellectual disabilities.

Introduction

Negative attitudes and discrimination towards people with intellectual disabilities continue to be significant social problems. They restrict the opportunities available to people with intellectual disabilities and negatively affect their psychological and emotional wellbeing (e.g. Jahoda & Markova, 2004). Mencap (2000) in their report ‘Living in Fear’ reported that as many as nine out of ten people with intellectual disabilities have been a victim of hate crime. Despite these concerns, public attitudes towards people with intellectual disabilities are relatively under-researched, especially in comparison to the attention given to perceptions of mental illness.

Attitudes are defined as ‘an overall evaluation of an object that is based on cognitive, affective and behavioural information’, which can vary according to dimensions of ‘valence and strength’ (p4, Maio & Haddock, 2010). In the literature, whilst there is a consensus that the components of attitudes are related but independent, the behavioural component is rarely measured. Cognitive and affective components meanwhile are often measured with the use of semantic differential scales, a popular explicit measure of attitudes which is fairly easy to administer and complete.

How to improve attitudes towards members of stigmatised groups has been the focus of much research. In the mental health field, it has been suggested that contact is likely to be the most effective method in reducing mental illness stigma (Corrigan & Penn, 1999). The ‘contact hypothesis’ proposed by Allport (1954), describes the conditions necessary for contact to have a meaningful impact on improving relations between different groups. In the context of heightened racial conflict it was observed that contact usually had positive effects on attitudes, though it could also have detrimental effects and that there appeared to be a number of influencing factors. Allport (1954) proposed that if the following conditions were satisfied contact would reduce prejudice: 1) the groups have equal status in the contact situation; 2) they have a common goal; 3) they co-operate in working towards that goal; and 4) they receive support from authorities, law or custom.

There is a large body of research in this area and consequently the ‘contact hypothesis’ has developed into ‘intergroup contact theory’. In a recent meta-analysis of the literature, Pettigrew, Tropp, Wagner and Christ (2011), concluded that intergroup contact typically reduces prejudice and that Allport’s (1954) conditions facilitate, but are not necessary, to achieve a positive effect on attitudes. Pettigrew et al. (2011) noted that the positive effects also emerged for stigmatised groups such as people with disabilities or mental illness, and they questioned whether the wide applicability of the effect indicate that it may be a consequence of more basic processes such as ‘mere exposure’.

Whilst contact has been well researched in some areas of intergroup relations (e.g. racial conflict), there are very few studies looking at contact as a main focus of research into lay people’s attitudes toward intellectual disabilities. Despite this, a rationale for the integration of people with intellectual disabilities within communities and education has been that regular contact will reduce negative attitudes and stereotypes (e.g. Sandler & Robinson, 1981). A recent review of research into public attitudes towards people with intellectual disabilities, concluded that whilst people may be in agreement with the principles of social inclusion for persons with intellectual disabilities, negative attitudes towards social interaction with them still appear prominent (Scior, 2011). This raises the question of whether increased societal integration of people with intellectual disabilities, which should have led to an increase in the level of contact with the general public, is having the proposed effect of reducing negative attitudes.

This review will assess the effect of contact on the attitudes of the general public towards people with intellectual disabilities. An improved understanding of the relationship between contact and attitudes towards this population can inform further research and interventions aimed at reducing stigmatising attitudes. The review will focus on ‘contact’ as direct, face to face contact with a person with an intellectual disability; research focused on indirect contact (e.g. Walker & Scior, 2013) is not included in this review.

The following questions will be addressed:

1. How were contact and attitudes measured in the literature?
2. To what extent does contact with people with intellectual disabilities affect attitudes towards them in the general population?
3. Do any specific elements of contact emerge as particularly important when considering its effect on, or association with attitudes?

Method

Search Strategy

The literature was systematically searched to identify published papers, written in English, that looked at the effect of contact on public attitudes towards people with intellectual disabilities. The electronic databases PsycINFO, Scopus, Web of Science, Medline, CINAHL and Social Policy and Practice were searched up until the 7th October 2013. No limits were placed on the time frame of publications. The reference lists of all the studies included in the review were also searched to identify any further relevant studies.

Search Terms

The search terms focussed on four areas, presented in Table 1.

Table 1

Search Terms Used

Intellectual Disability	**Sample**	**Attitudes**	**Contact**
Intellectual Disabilit*	General	Attitude*	Contact
Learning Disabilit*	Public	Stigma*	Familiar*
Mental Retard*	Lay	Social	Interact*
Developmental Disabilit*	Community	Distance	Expos*
Intellectual Development Disorder		Belief*	Experience*
		Inclusion	
		Discriminat*	
		Aware*	
		Knowledge*	
		Opinion*	
		Accept*	

Note: *****indicates terms that were truncated to allow for multiple endings of the word

Inclusion and Exclusion Criteria

Search results were evaluated against the following inclusion and exclusion criteria when deciding whether they were suitable for this review.

Inclusion Criteria

- Published in English.
- Published in full in a peer or non peer-reviewed journal.
- The study focussed on attitudes towards intellectual disability generally.
- The focus was on the general public of working age.
- The study measured prior direct contact with people with intellectual disabilities.

Exclusion Criteria

Studies exploring:

- attitudes of professional groups or family members only; attitudes towards children with intellectual disabilities;
- attitudes towards the sexuality of people with intellectual disabilities only;
- attitudes towards the inclusion of people with intellectual disabilities in a specified area, for example, studies looking at integration in higher education or within a neighbourhood;
- attitudes towards specific diagnostic groups for example, people with Down's Syndrome;
- student samples, where all participants were studying towards a professional qualification, for example nursing or teaching.

Quality Rating of Studies

A critical appraisal checklist (Health Evidence Bulletin, 2004), designed for assessing the quality of observational studies, was used to assess the methodological rigour of the quantitative studies included in the review. This checklist rates studies on nine dimensions using 'yes/no/can't tell'. The criteria to be met for each category on the checklist are provided by prompt questions (see Appendix A). Only one qualitative study was included within the review, which was not formally appraised using a quality tool. A section contained within the original checklist, which reviews the relevance of the results locally, was omitted as it was not relevant to the current review. A summary judgement rating of the overall study, as used in the National Institute for Health and Clinical Excellence (2009) guidelines, was also included to aid comparison of studies (see Appendix B).

Results

The initial search identified 2622 articles of potential relevance. The process by which these were examined against the inclusion/exclusion criteria, and the final body of 23 articles selected is shown in Figure 1. Table 2 summarises the findings, and Table 3 outlines the quality assessment ratings for each of the selected studies.

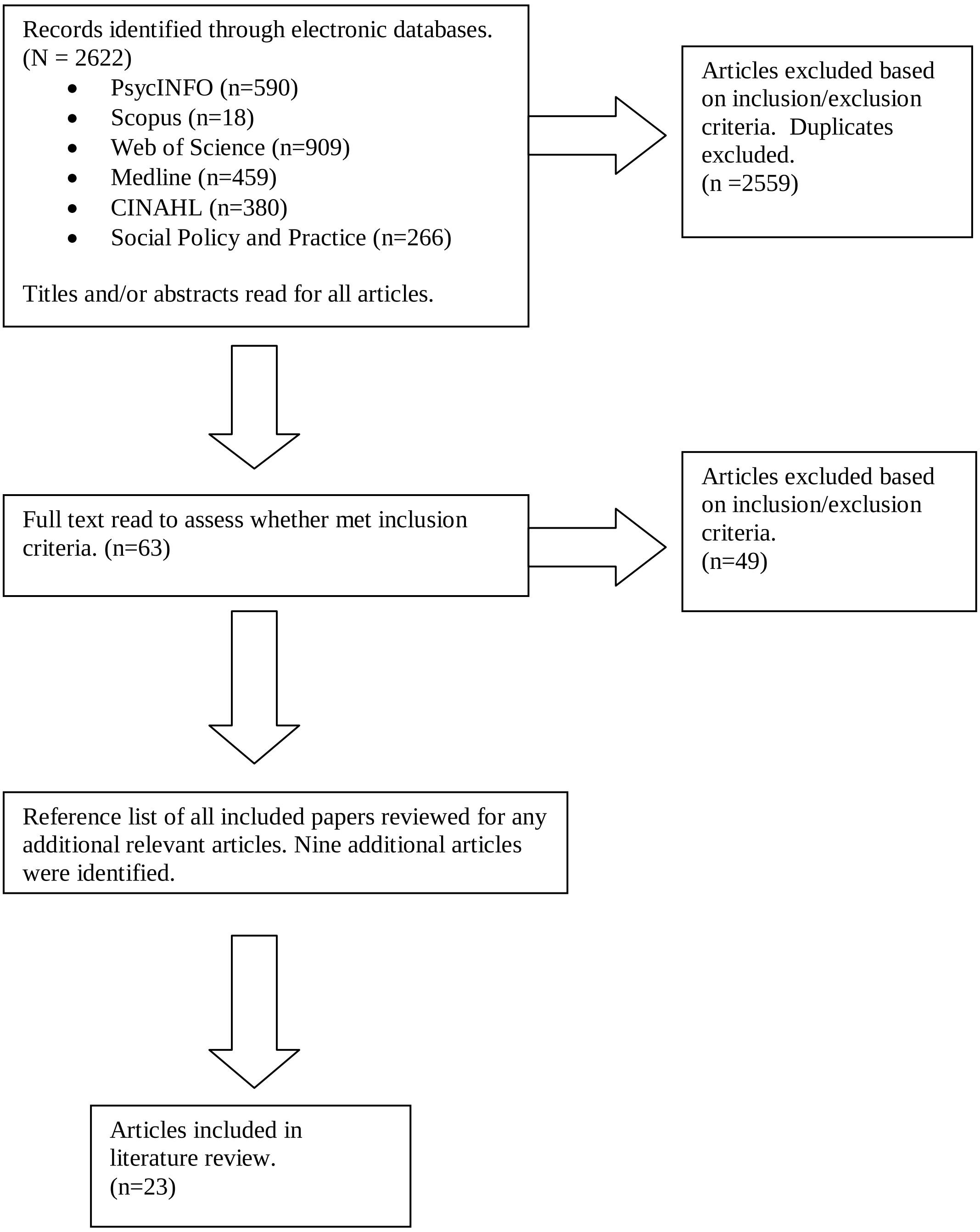

Figure 1. The Process of Selecting Studies for the Review

Table 2

Studies Assessing Contact and Attitudes of the General Public towards People with Intellectual Disabilities

Authors and Country	Sample	N	Measurement of contact	Measurement of attitudes	Findings
Antonak et al. (1995) USA	Undergraduate students, postgraduate students and professionals	572	Asked to indicate if knew someone with ID and nature of relationship. 3 questions on a 6 point scale on frequency, intensity and knowledge. This was ordered into 5 categories from intimate relationship to none.	Attitudes toward Mental Retardation and Eugenics (AMRE, Antonak et al., 1990, 1993). Sub-sample (n=232) also completed Mental Retardation Attitude Inventory - Revised (MRAI - R, Antonak & Harth, 1994).	Endorsement of eugenic principles inversely related to education level and familiarity with people with ID.
Furnham & Pendred (1983) UK	Students and general public	96	Asked to indicate contact with people with disabilities – type of disability, level of acquaintance, regularity of contact. Unclear whether analysed prior contact with ID specifically.	Attitudes Toward Disabled Persons Scale (ATDP; Yuker et al., 1960) – adapted to remove term ‘disabled person’ and include 4 specific disabilities – including ‘educationally subnormal’ person.	No differences between people who had contact with people with ID or other disabilities on attitudes, but significant differences between ‘any contact’ and ‘no contact’ on favourable attitudes.
Horner-Johnson et al. (2002) Japan	University students	275	Asked whether have a close relative/friend with disability (does not specify ID) and if been employed to work with people with ID.	Community Living Attitude Scale – Intellectual Disability Form (CLAS-ID; Henry et al., 1996), MRAI, (Antonak & Harth, 1994), AMRE, (Antonak et al., 1993).	Students with family/friend (but not work) contact (all disabilities) showed more support for rights of people with ID.
Jaffe (1967) USA	High School senior students	119	Asked about contact with ‘the mentally retarded’ – divided into two groups either a) some or b) no contact.	22 pairs of adjectives (previously used in Wang, 1962) – Evaluative and Strength-Activity Factors. Adjective Check List (Gough, 1955) – Favourability Trait, Social Distance Scale (Bogardus, 1933).	Contact had a significant effect on number of favourable traits assigned to vignette, but no differences on other variables.

Authors and Country	Sample	N	Measurement of Contact	Measurement of Attitudes	Findings
Kobe & Mulick (1995) USA	University students taking a 10 week Psychology course	37	Questioned about whether knew a person with ID and what the relationship was. Direct contact experience during the study.	AMRE (Antonak et al., 1990, 1993).	Contact had no effect on attitudes pre or post intervention. Contact intervention had no significant impact on attitudes.
Lau & Cheung (1999) Hong Kong	Community sample	822	Dichotomous question about whether interacted with person with disabilities (ID, mental illness and others) in last 6 months. Unclear whether separated contact in analysis.	Attitudes measured by response to 9 items devised by authors.	Interaction within last 6 months associated with less discriminatory attitudes but very little variation when considering ID.
McManus, Feyes & Saucier (2011) USA	Undergraduate students	125	9 items each measuring quantity and quality of contact on a 9 point Likert-type scale.	MRAI (Antonak & Harth, 1994)	Quality of contact predicted attitudes towards ID, quantity of contact (and knowledge) did not.
Morin et al. (2013) Canada	Stratified community sample	1605	Questioned about frequency of contact, quality of relationship and number of persons with ID they know.	Attitudes Toward Intellectual Disability Questionnaire (ATID; Morin et al., 2012).	More frequent contact, contact with more people with ID and better relationships all associated with more positive attitudes.
Nosse & Gavin (1991) USA	College students	31	Prior contact measured on 7-point scale (0 = no experience to 7 = extensive experience) for all participants but not analysed. Subject group had contact experience, compared to control group.	Questionnaire adapted from Gottlieb & Corman (1975) – using adjective generation technique (Allen & Potkay, 1983) and semantial differential scaling of bipolar adjectives (Gottlieb & Corman, 1975; Horne, 1985).	Significantly more positive ratings associated with subject group who undertook contact experience, compared to control group.

Authors and Country	Sample	N	Measurement of Contact	Measurement of Attitudes	Findings
Ouellette-Kuntz et al. (2010) Canada	Stratified community sample	625	Questioned about level of contact with person with ID.	Interview including Social Distance Subscale of Multi-Dimensional Attitude Scale on Mental Retardation (MASMR) (Harth, 1971).	Contact had a significant effect on social distance. Contact with close family members in particular associated with less desire for social distance compared to other relationships.
Roper (1990a) USA	Volunteers at Special Olympics	369	Contact measured as: 1) prior contact; 2) level of experience at Special Olympics; 3) number of Special Olympics attended.	Bipolar adjectives on 7 point scale, personal social distance scale.	Perceptions not significantly improved as a result of volunteer contact. Some indication that more frequent contact associated with less positive perceptions. Some indication contact reduces desire for social distance.
Roper (1990b) USA	Volunteers at Special Olympics	369	Contact measured as: 1) prior contact; 2) level of experience at Special Olympics; 3) number of Special Olympics attended.	Bipolar adjectives on 7 point scale. Scale with items addressing beliefs about people with ID.	Some contact compared to no contact had more positive perceptions. More frequent contact may lead to less positive perceptions than minimal contact, but not significant.
Scior et al. (2012) UK	Community sample	1002	Dichotomous question about any prior contact with someone with ID.	Intellectual Disability Literacy Scale (vignette and social distance) (IDLS, Scior & Furnham, 2011), CLAS-ID (Henry et al. 1996).	Prior contact predictor of social distance, although accounted for only a small amount of variance. Contact effect different for Black compared to Asian participants on social distance scale.
Scior et al. (2010) Hong Kong and UK	Community sample. Hong Kong Chinese (n =149) White British (n=135)	284	Dichotomous question about any prior contact with someone with ID. Information on type of contact relationship.	CLAS-ID (Henry et al. 1996).	Prior contact with someone with ID did not predict CLAS-ID subscale scores.

Authors and Country	Sample	N	Measurement of Contact	Measurement of Attitudes	Findings
Scior et al. (2013) UK	Community sample	1002	Dichotomous question about any prior contact with someone with ID.	IDLS (vignette and social distance) (Scior & Furnham, 2011).	Contact strong predictor of less desire for social distance.
Sheridan & Scior (2013) UK	College students from British South Asian and White British backgrounds	737	Dichotomous question about any prior contact with someone with ID.	CLAS-ID (Henry et al., 1996).	Respondents who knew someone with ID demonstrated greater pro-inclusion attitudes.
St Claire (1986) UK	Lay people (n=395) and Psychologists (n=52)	447	Asked whether knew a 'retarded person'.	81 item questionnaire (St Claire, 1984).	Lay people with contact had significantly more positive attitudes on most items.
Tachibana (2005) Japan	Parents of pupils attending elementary schools	2381	Questioned about nature of contact – regrouped to take account of forced/voluntary nature of contact.	Attitudes rated on items mainly from Zentokuren (1962).	Positive attitudes appeared related to positive contact experiences. Negative experiences, especially in childhood, strongly associated with negative attitudes.
Tachibana & Watanabe (2003) Japan	Parents of pupils attending elementary schools	386	Questioned about schooling (whether included special classes) and nature of any contact.	Agreement with 14 statements on an 11-point Likert scale.	Contact with people with ID associated with more positive attitudes.
Tachibana & Watanabe (2004) Japan	Parents of pupils attending elementary schools	2381	Questioned about nature of contact – regrouped to take account of forced/voluntary nature of contact.	Attitudes rated on items mainly from Zentokuren (1962).	Close family contact generally associated with more positive attitudes, although not in area of 'independent life'. The closer the contact generally the more positive the attitudes.

Authors and Country	Sample	N	Measurement of Contact	Measurement of Attitudes	Findings
Ten Klooster et al. (2009) Netherlands	Nursing students (n=81), age matched non-nursing peers (n=48)	121	General questions about contact with ID (and also separately physical disabilities) – type of experience, frequency and familiarity.	CLAS-ID (Henry et al., 1996).	Having relative/friend with ID not predictive of attitudes towards people with ID.
Williams (1986) USA	College students	373	Question about source of exposure and level of exposure.	Participants rated 18 personality-traits for a person with ID compared to someone with 'normal intelligence'.	Level of exposure had little impact on perceptions although greatest level of exposure had most positive scores on amiability.
Yazbeck et al. (2004) Australia	Disability Services staff (n=202), students, general population	492	Dichotomous questions about any 'prior knowledge of' and regular contact with a person with ID.	AMRE (Antonak et al., 1993); MRAI (Antonak & Harth, 1994) CLAS-ID (Henry et al., 1996).	Prior contact had no significant effect on AMRE-R or CLAS-ID. On MRAI contact significantly associated with more positive attitudes, except on subtle derogatory beliefs scale.

Table 3

Quality Assessment of Studies included in the Literature Review based on Health Evidence Bulletin

Study	**1.Relevance**	**2.Focus**	**3.Method**	**4.Population**	**5.Bias**	**6.Cohort Study**	**7. Table/Graphs**	**8. Analysis**	**Overall Assessment**
Antonak et al. (1995)	Y	Y	Y	N	N	N/A	Y	Y	+
Furnham & Pendred (1983)	?	Y	Y	Y	Y	N/A	Y	N	+
Horner-Johnson et al. (2002)	?	Y	Y	Y	Y	N/A	Y	Y	+
Jaffe (1967)	Y	Y	Y	N	Y	N/A	N	N	-
Kobe & Mulick (1995)	Y	Y	Y	N	Y	N/A	Y	?	+
Lau & Cheung (1999)	?	Y	N	Y	Y	N/A	Y	?	+
McManus et al. (2011)	Y	Y	Y	Y	Y	N/A	Y	Y	++
Morin et al. (2013)	Y	Y	Y	Y	Y	N/A	Y	Y	++
Nosse & Gavin (1991)	Y	Y	Y	N	N	N	Y	Y	-
Ouellette-Kuntz et al. (2010)	Y	Y	Y	Y	Y	N/A	Y	Y	++
Roper (1990a)	Y	Y	N	Y	N	N/A	Y	?	+
Roper (1990b)	Y	Y	N	Y	N	N/A	Y	?	+
Scior et al. (2012)	Y	Y	Y	Y	Y	N/A	Y	Y	++
Scior et al. (2010)	Y	Y	Y	Y	Y	N/A	Y	Y	++
Scior et al. (2013)	Y	Y	Y	Y	Y	N/A	Y	Y	++
Sheridan & Scior (2013)	Y	Y	Y	Y	Y	N/A	Y	Y	++
St Claire (1986)	Y	Y	?	N	N	N/A	Y	N	-
Tachibana (2005)					Qualitative Study, not rated				
Tachibana & Watanabe (2003)	Y	Y	?	Y	N	N/A	Y	?	+
Tachibana & Watanabe (2004)	Y	Y	Y	Y	N	N/A	Y	Y	+
Ten Klooster et al. (2009)	Y	Y	Y	Y	Y	N/A	Y	Y	++
Williams (1986)	Y	Y	Y	Y	Y	N/A	Y	Y	+
Yazbeck et al. (2004)	Y	Y	Y	Y	Y	N/A	Y	N	+

Note: Y = Yes; N = No; ? = Can’t tell; ++ = High Quality; + = Medium Quality; - = Low Quality

1. How were contact and attitudes measured in the literature?

Measurement of Contact

All 23 articles included in the review measured contact through self-report, usually when collecting other demographic information. The 23 articles report on 20 studies with three pairs of articles using at least partly the same data (Roper 1990a and Roper 1990b; Scior, Addai-Davis, Kenyon and Sheridan, 2012 and Scior, Potts & Furnham, 2013; Tachibana, 2005 and Tachibana and Watanabe, 2004).

Six articles examined contact as a dichotomous variable only within the analysis, grouping participants according to whether they had some or no contact with people with intellectual disabilities. Of these articles three were rated of high quality (Scior, et al. 2012; Scior et al. 2013; Sheridan & Scior, 2013), one medium (Lau & Cheung, 1999) and two low quality (Jaffe, 1967; St Claire 1986). In Lau and Cheung's (1999) paper, it is unclear whether they analysed contact with people with intellectual disabilities. The method section implies participants were asked whether they had contact with people with disabilities (not specifically intellectual disabilities) in the last six months, although in the results section it is reported that approximately one-fifth of participants had contact with people with intellectual disabilities in the same time frame. The studies by Jaffe (1967) and St Claire (1986) focussed on contact as a main theme of the paper, despite only measuring it dichotomously. Both of these papers had fairly low methodological rigour which may to some extent reflect how long ago they were conducted.

The remaining 17 articles asked for further details about contact; such as the nature of the relationship, the frequency and/or intensity of contact, the number of people with intellectual disabilities participants knew and whether the school they attended had included 'special classes'. McManus, Feyes & Saucier (2011) measured contact on two dimensions – quality (nine items) and quantity (six items), all rated on a 9-point Likert scale. This measure of contact was the most in-depth of all of the studies.

A study by Horner-Johnson et al. (2002), rated medium quality, was included in the review but its methodology is unclear. The authors describe asking participants about close relationships with people with disabilities, but do not appear to have specified relationships with people with intellectual disabilities. Two studies used a repeated measures design and contact intervention whilst also measuring contact prior to the study. Kobe & Mulick's (1995) study, rated medium quality, measured students' attitudes pre and post a ten week introductory course on the 'psychology of mental retardation,' which included 20 hours working with people with intellectual disabilities. This contact experience was therefore in a professional capacity. Nosse & Gavin's (1991) study, rated low quality, measured students' attitudes before and after a contact experience where they were required to house, feed and entertain people with intellectual disabilities and their assistants over two and a half days. Prior contact was measured in this study, but not incorporated in the analysis to assess if prior experience had affected the intervention outcome as one might suspect. A study by Roper (1990a, 1990b), rated medium quality, assessed volunteers' prior contact with people with intellectual disabilities in their personal lives, as well as their prior attendance and level of experience as volunteers at the Special Olympics. Unfortunately Roper did not use a repeated measures design (pre/post contact at the Special Olympics) and contact is based only on self-report.

The measurement of contact varies between studies, but often includes only limited dichotomous information. This may reflect the nature of how the information was collected and analysed as one of many demographic variables, with only a few studies looking at contact as a main theme. McManus, Feyes & Saucier (2011) provide the best example of measuring contact multi-dimensionally to enable much richer information to be analysed. None of the studies included the use of a reliable or validated measure of self-reported contact (such as the Contact with Disabled Persons (CDP) scale, Yuker & Hurley, 1987). An important limitation of self-report measures of contact is the assumption that participants share the definition of the diagnostic categories of intellectual disability/learning disability and are able to clearly differentiate them from other categories, such as specific learning difficulties, (e.g. Dyslexia), or mental health problems. There may also be a high level of subjectivity when participants are asked about 'contact' (or equivalent terminology). These limitations indicate that the measurement of contact can be unreliable.

Measurement of Attitudes

In all 23 articles the attitudes of participants towards people with intellectual disabilities were measured by self-report. Seven standardised measures were used across 11 articles with many employing more than one tool. Of these five were rated as of medium quality (Antonak et al., 1994; Furnham & Pendred, 1983; Horner Johnson et al., 2002; Kobe & Mulick, 1995; Yazbeck et al., 2004; Williams, 1986), and six as of high quality (McManus et al., 2011; Scior, Kan, McLoughlin & Sheridan, 2010; Sheridan & Scior, 2013; Scior et al., 2013; Ten Klooster, Dannenberg, Taal et al., 2009; Oullette-Kuntz, Burge, Brown et al., 2009).

The Attitudes towards Mental Retardation and Eugenics scale (AMRE) (Antonak et al., 1990, 1993) was used in four studies (Antonak et al., 1994; Horner-Johnson et al., 2002; Kobe & Mulick, 1995; Yazbeck et al., 2004). The measure consists of 32 statements, rated on a six point scale to assess participants' attitudes towards eugenic principles for people with intellectual disabilities (labelled in the measure as ‘mental retardation’). A score is given, summated from the individual ratings, with a higher score indicating a more positive (less favourable towards eugenic principles) attitude. The scale was designed for use with undergraduate and graduate students as well as professionals working with people with intellectual disabilities. It is reported to have good reliability (Spearman-Brown corrected split-half = 0.91) and internal consistency (coefficient alpha = 0.93).

The Mental Retardation Attitude Inventory (MRAI) (Antonak & Harth, 1994) was used in four of the studies reviewed (Antonak et al., 1994; Horner-Johnson et al., 2002; McManus et al., 2011; Yazbeck et al., 2004). This measure consists of 29 items assessing general attitudes towards people with intellectual disabilities, rated on a four point scale, with an overall higher global score indicating more favourable attitudes. Participants are also given a score on each of the four scales, ‘Integration-Segregation’, ‘Social Distance’, ‘Private Rights’ and ‘Subtle Derogatory Beliefs’. The inventory is reported to have good reliability (coefficients ranging from 0.68-0.91) and internal consistency (coefficients ranging from 0.73-0.91).

The Attitudes Toward Disabled Persons (ATDP) (Yuker et al., 1960) was used in one study (Furnham & Pendred, 1983). The measure was modified to remove the term ‘disabled person’, which was replaced with the specific disabilities of interest to the study (including the term ‘educationally subnormal person’). It includes 20 items rated on a Likert-type scale, looking at characteristics of people with disabilities and opinions on how people with disabilities should be treated by others. It is reported that previous studies have found the measure to be a reliable and valid instrument for measuring attitudes towards people with disabilities.

The Community Living Attitudes Scale – Intellectual Disability (CLAS-ID) (Henry et al., 1996) was used in five studies (Horner-Johnson et al., 2002; Scior et al., 2010; Sheridan & Scior, 2013; Ten Klooster et al., 2009; Yazbeck et al., 2004). This is a 40-item scale consisting of four subscales, ‘Empowerment’, ‘Exclusion’, ‘Sheltering’ and ‘Similarity’. The subscales have been demonstrated to have acceptable internal consistency (coefficients between 0.75-0.86) and test-retest reliability (coefficients of 0.70-0.75 at one month).

The Attitudes Toward Intellectual Disability Questionnaire (ATTID) (Morin et al., 2012) was used in one study (Morin et al., 2013). This questionnaire is based on previously validated measures such as the MRAI (Antonak & Harth, 1994), as well as further literature on attitudes. The measure consists of 67 items, rated by participants on a five point Likert-type scale. The initial 33 items assess general beliefs and attitudes towards people with intellectual disabilities. The remaining items are divided between two vignettes which describe a person with intellectual disabilities who is relatively high functioning, and another who is lower functioning. The higher the score on the measure, the more negative the attitude. The internal consistency for the questionnaire is 0.92 with test-retest reliability correlations between 0.44 and 0.88.

The Intellectual Disability Literacy Scale (IDLS) (Scior & Furnham, 2011) was used in two articles (Scior et al., 2012; Scior et al., 2013). The IDLS consists of two unlabelled vignettes, one representing a person who meets the criteria for (mild) intellectual disability and the other schizophrenia. The measure includes a social distance scale, where higher scores reflect a stronger desire for social distance. The internal reliability of the scale is reported to be good (Cronbach’s alpha of 0.91), as is its test-retest reliability.

The Social Distance Subscale of the MASMR (Harth, 1971) was used in one study (Ouellette-Kuntz, Burge, Brown et al., 2009). Participants are required to rate their agreement with eight statements on a four point Likert-type scale. The scale has been found to have satisfactory reliability (coefficient 0.82), and internal validity analyses indicate the scale is measuring the social distance construct only (Antonak & Harth, 1994).

Nine articles used measures where the standardisation, reliability and validity were questionable. Of these studies three were rated as of low quality (Claire, 1986, Jaffe, 1967; Nosse & Gavin, 1991), six as of medium quality (Lau & Cheung, 1999; Roper, 1990a; Roper 1990b; Tachibana, 2005; Tachibana & Watanabe, 2003; Williams, 1986) and none as of high quality. Claire (1986) used an 81 item questionnaire consisting of two opposite adjectives rated on a scale, developed by the author, although the details of this process are not reported. Jaffe (1967) used four scales of attitude, one of which, an evaluative factor, was reported to have an internal consistency coefficient of 0.84. The description of the measure is unclear however, and there are no further reliability statistics reported. Lau and Cheung (1999) measured attitudes towards people with intellectual disabilities (and mental health difficulties) via a telephone survey where participants were required to give their responses to nine statements on a five point Likert-type scale. These scores were then averaged to get a score to compare the disorders. Reliability alpha coefficients are reported (0.621 for intellectual disabilities and 0.854 for mental health difficulties) although the description of the measure is vague and there is a lack of clarity as to why each of the adjectives were chosen.

In Nosse and Gavin's (1991) study participants were asked to write five adjectives which described their feelings towards adults with intellectual disabilities - the 'Adjective Generation Technique' - which were then given favourability and anxiety values. Participants were also presented with two polar opposite adjectives on a seven point scale and asked to rate their feelings towards people with intellectual disabilities. Although both of these methods had been used in previous studies, they were adapted for this study and were not designed specifically for measuring attitudes towards people with intellectual disabilities. No reliability or validity data were presented. Roper (1990a; 1990b) designed a tool for the study based on previous measures (including that used in St Claire, 1986) using bipolar adjectives on a seven point scale as well as a social distance scale. The measure was piloted and modified based on this, but no reliability or validity analyses were conducted.

Tachibana (2005) and Tachibana & Watanabe (2004) (two articles which utilised the same data) employed a measure based on items which had been previously used in a study by Zentokuren (1962). They adapted the measure to include items to enable an international comparison. The measure required participants to rate their agreement with attitude statements and to answer questions relating to their 'schemata' of intellectual disabilities. There were a number of open ended questions included in the measure which were analysed qualitatively in Tachibana (2005). The studies did not include any reference to reliability or validity of the measure. Tachibana and Watanabe (2003) used a slightly adapted version of the questionnaire, although they do not reference where the items were developed from and make no reference to Zentokuren (1962). There is no description of how or when the measure was developed, nor any analysis of reliability or validity.

Participants in a study by Williams (1986) were required to rate on six point scales the extent to which they believed each of 18 personality traits characterised people with intellectual disabilities, compared to people of 'normal intelligence'. These were taken from the Rokeach Value Survey (Rokeach, 1973) which were found to load onto three factors, with internal reliability scores for these factors found to be between .68 and .79. Although they were able to provide reliability data for the factors they were assessing (competence, amiability and restraint), the traits were not designed for an assessment of attitudes towards intellectual disabilities and it is unclear whether this is a valid measure of such.

Many measures of attitudes have been used within studies. Those of higher quality have used standardised measures with reliability and validity statistics presented. All the measures reviewed are self-report, explicit measures of attitude, which are more susceptible to biases such as social desirability, than implicit measures. Explicit measures have been found to show positive public trends in attitudes towards people with disabilities in comparison to implicit measures which demonstrate negative attitudes (Wilson & Scior, 2014). Many studies have used more than one measure of attitude which demonstrates the multi-dimensionality of the attitude construct. Despite this no studies have measured the behavioural component of attitudes, although some have measured behavioural intent through ‘social distance’. This is a strong limitation of the studies since, although there appears to be a moderate correlation between opinions and actions (Kraus, 1995), there are a number of factors that influence this, such as the strength of the attitude and domain of the behaviour (Maio & Haddock, 2009). There is also evidence to suggest that explicit measures of attitude may only predict deliberative and not spontaneous behaviour (e.g. Dovidio, Kawakami, Johnson, Johnson, & Howard 1997).

2. To what extent does contact with people with intellectual disabilities affect attitudes towards people with intellectual disabilities in the general population?

Of the 23 articles included in the review, 14 reported a positive association of contact with attitudes, however eight reported little or no significant association. Of those finding a positive association of contact, three were rated of low quality (Jaffe, 1967; Nosse and Gavin, 1991; St Claire, 1986), four of medium quality (Antonak et al., 1995; Tachibana & Watanabe, 2003; Tachibana & Watanabe, 2004; Yazbeck et al., 2004), and six of high quality (McManus et al., 2010; Morin, Rivard, Crocker et al., 2008; Oullette-Kuntz et al., 2010; Scior et al., 2012; Scior et al., 2013; Sheridan & Scior, 2013). Tachibana (2005) is a qualitative study using the same data as the medium rated study by Tachibana & Watanabe (2004).

The majority of the studies included in the review are cross-sectional in design, examining the relationship between contact and attitudes at a specific point in time and therefore are not able to examine the cause and effect relationship, unlike intervention studies, of which two were included in the review (Kobe & Mulick, 1995; Nosse & Gavin, 1991). Although the majority of studies found contact had a positive association with attitudes towards people with intellectual disabilities, the findings suggest that the relationship between contact and attitudes is influenced by a number of factors. The factors relating to contact will be discussed in more detail in the next section.

There is some suggestion in the literature that contact may affect different components of attitude. Jaffe (1967) found that people who had contact with people with intellectual disabilities assigned more favourable traits to a person with intellectual disabilities, but did not find any significant differences on other measures including a social distance scale. He suggests contact may influence the cognitive dimension of attitudes while the affective dimension may remain unaffected. The lack of reliability and validity of the measure, as well as the dichotomous nature of contact measurement and the unrepresentative sample (high school senior students) does however raise questions about these conclusions. Morin et al. (2008) found that attitudes towards people with intellectual disabilities varied as a consequence of a number of factors including the number of people with intellectual disabilities participants knew (grouped as 0, 1-10 and 11 plus), as well as the frequency and quality of contact with people with intellectual disabilities. They found that these factors had a significant effect on different scales, for example quality of contact had a significant effect on the discomfort scale - a measure of emotional reaction. Quantity of contact did not have the same significant effect on this scale. This provides some indication that different aspects of contact could affect different attitude domains; however the current literature does not provide enough evidence for such a conclusion.

Some studies indicated that only certain aspects of contact had a significant association with attitudes. McManus et al. (2010) found that quality of contact (positive/negative nature of contact) with people with intellectual disabilities, significantly predicted attitudes but that quantity of contact did not. These results also remained significant after controlling for social desirability. Ouellette-Kuntz et al. (2010) found that people differed significantly on social distance scores if they had a close family member with intellectual disabilities, compared to all other levels of contact, including no contact. They found no significant differences between people with other types of contact and no contact. Tachibana & Watanabe (2004) found that in general, the closer the relationship, the more positive the attitudes. The authors noted however that the comparative attitudes between the immediate relatives of people with intellectual disabilities, who have a significantly higher amount of contact compared to other groups, did not differ with the same magnitude as predicted. Participants with close family contact also failed to demonstrate the most favourable attitudes on the ‘independent life’ scale. The results are discussed in the context of people who have a ‘dispositional favourable attitude’ towards people with intellectual disabilities, which they hypothesised would be found in the non-relative groups, however this was not measured. Tachibana (2005) concluded that ‘passive’ contact experiences appear to have little impact on attitudes, whilst positive attitudes develop with close family or friend contact. An unpleasant experience with a person with intellectual disabilities, especially at a young age, was associated with negative attitudes.

Individual factors, specifically culture and religion, were also found to interact with the association between contact and attitudes. Scior et al. (2012), found contact to be a significant predictor on attitudes on all four CLAS-ID subscales. Contact was also a predictor of social distance however it accounted for only a small amount of variance. Interestingly, they found differences in the association with contact depending upon the ethnicity of the participant. Black participants were reportedly twice as likely as Asian participants to report contact with people with intellectual disabilities, yet demonstrated a greater desire for social distance. They found that in general, members of Black and minority ethnic communities reported much lower prior contact with people with intellectual disabilities in comparison to White participants despite otherwise similar demographics. Understanding this relationship is, however, limited by the dichotomous question on contact. Sheridan & Scior (2013) found that prior contact with a person with intellectual disabilities had a significant effect on all CLAS-ID scales, with more positive attitudes associated with prior contact. They also described significant differences between the level of reported contact among different religious groups, finding that Christian, non-religious and Atheist participants were much more likely to report prior contact than people of Muslim, Hindu, Sikh and other religions.

The effect of contact may also be influenced by the severity of the intellectual disability. Antonak et al. (1995), rated high quality, found that familiarity was the most influential demographic variable in predicting attitudes towards people with moderate and severe intellectual disabilities, whilst education was the most influential for mild intellectual disability. The familiarity variable within this study included the relationship with the individual, the frequency and intensity of the contact as well as knowledge of intellectual disabilities, something which has been included as a separate variable in other studies. The comparative value of the variable with others which include contact only, may therefore be affected. Similarly, Yazbeck et al. (2004) found that people with prior contact with people with intellectual disabilities had more positive attitudes, but measured this dichotomously as ‘prior knowledge of a person with intellectual disabilities’, which could alter the comparative value of this variable with other studies. McManus et al. (2010), however, found that knowledge of intellectual disabilities was not an independent predictor of attitudes - suggesting that this may not necessarily be a significant flaw in the above studies.

As well as the subjective nature of the contact variable, other methodological flaws include invalidated measures, small sample sizes and high numbers of statistical analyses. Nosse & Gavin (1991), measured attitudes pre and post contact experience. They found that participants attributed more positive adjectives to people with intellectual disabilities post-contact experience and in comparison to controls. Prior contact, although measured, was not analysed but the experimental and control group were relatively similar in their experience. The extremely small sample and differences between the control and experimental groups in their study courses, as well as the experimental group all knowing the co-ordinator personally indicate significant methodological flaws in this study. St Claire (1986) found that lay public who had contact with people with intellectual disabilities were more positive than people without contact experiences on the majority of scales, however the number of statistical analyses conducted indicate the possibility of false positive results. They compared lay people to a small comparison group of Psychologists, who they reported to have more negative attitudes towards people with intellectual disabilities and found contact to have little impact on the professionals' beliefs.

Familiarity with people with intellectual disabilities was associated with more positive attitudes in Tachibana & Watanabe’s (2003) study; although ‘familiarity’ also included contact through a friend and so may have differed to some extent from contact as measured in other studies. Within this study another factor which was found to have an association with attitudes was the participants' estimates of how likely it was for them to have a person with intellectual disabilities within their family. People who estimated smaller numbers demonstrated more negative attitudes. This may indeed interact with contact, especially family contact, but the authors of the study did not comment on this possibility.

Nine articles found little or no association with contact. Of these one was rated low quality (Horner-Johnson et al., 2002), six were rated medium quality (Furnham & Pendred, 1983; Kobe & Mulick, 1995; Lau & Cheung, 1999, Roper, 1990a; Roper 1990b; Williams, 1986) and two were rated high quality (Scior et al., 2010; Ten Klooster et al., 2009).

Whilst these studies demonstrated little or no association between contact and attitudes, two of them suggest that this was due to an overall positive attitude which stopped any differences reaching significance. Lau and Cheung (1999), rated medium quality, found that people with prior contact had lower levels of discrimination towards both people with intellectual disabilities and mental health difficulties. They conclude, however, that due to the generally low discrimination against people with intellectual disabilities (in comparison to mental health difficulties) overall, this ‘suggests’ little variation between people who do and do not have prior contact. The method and statistical analyses to back up this conclusion are unclear. It is implied (although not explicit) that whilst they measured participants' prior contact with people with intellectual disabilities, they only analysed prior contact with people with any disability. It is unclear why they have not tested their hypothesis statistically. Williams (1986), rated medium quality, found that ‘level of exposure’ had little impact on attitudes towards people with intellectual disabilities. Contact was measured in regards to the nature and quality of the relationship and attitudes were measured as a ‘perception’ of people with intellectual disabilities. Attitudes were found to be generally positive, with participants rating people with intellectual disabilities higher than people without intellectual disabilities on eight out of 18 desirable characteristics. People with prior contact with people with intellectual disabilities did demonstrate the most positive attitudes, but this did not reach significance, possibly due to this general positive attitude. This may have also been affected by the measurement tool and small sample size for the large number of analyses.

Other studies also indicated a general positive attitude following contact, but this was not significant. Horner-Johnson et al. (2002) found that people with a close relationship with a person (family member or friend) with a disability held more support for the rights of people with intellectual disabilities, but these correlations did not reach significance. Their statistics were affected by type 1 error and this was considered in their discussion. This study's relevance to the current review is questionable, however, as the authors do not appear to have differentiated contact/familiarity with people with intellectual compared to other disabilities. Ten Klooster et al. (2009) looked at nursing attitudes to both physical and intellectual disabilities but compared these to the matched non-nursing peers and hence the study was included within the review. They found that having a relative or friend with an intellectual disability was not predictive of attitudes. This was in contrast to attitudes towards people with physical disabilities where having a relative or friend was a strong independent factor. It may be that the sample size in this study was too small to find the differences in attitudes towards people with intellectual disability. Ten Klooster et al. (2009) discuss the need for contemporary normative data for the scales in order to assess this.

One study suggested that sustained contact with people with intellectual disabilities may lead to less positive attitudes. Roper (1990a; 1990b) found that in general attitudes were not changed in a positive direction as a result of contact as a volunteer. People with no contact experiences were found to score significantly lower on the perception scale in comparison to people who knew a person with intellectual disabilities as a friend, family member or through work. People who reported contact as a friend had more positive scores than people who reported contact through family or work, which Roper hypothesises, could mean that sustained contact leads to less positive perceptions. This study only tested people who were volunteering at the Special Olympics; these participants are likely to have somewhat differing attitudes from the non-volunteering general public.

Prior contact with people with disabilities was found to have little association with attitudes in Furnham & Pendred’s (1983) study. They grouped their respondents according to their contact with people with physical disabilities, intellectual disabilities, both physical and intellectual disabilities and neither physical nor intellectual disabilities, and they found that these categories were not significantly different in their attitudes. They found that contact (compared to no contact) had some association with attitudes, however these were only analysed in the context of all disabilities (physical and intellectual) and were present on only a few items. Due to the small sample size and number of statistical analyses conducted it is questionable whether these are valid observations. This study's relevance to the review was queried as it did not present any analysis for prior contact and attitudes towards people with intellectual disabilities specifically. The article indicates that other aspects of contact were assessed, for example the regularity of contact and length of acquaintance, but these were not reported within the results section. There is only a suggestion these variables were analysed as they claim people with ‘close contact with disabled people’ thought there should not be ‘special schools’ for children with disabilities.

Two studies suggested no effect or association of contact and attitudes. Kobe & Mulick (1995) found that students who had prior contact with people with intellectual disabilities were not significantly different to people with no prior contact in their attitudes on the AMRE (Antonak, Fiedler & Mulick, 1993). The study included a direct contact experience working with people with intellectual disabilities. This did not significantly interact with prior contact on attitudes, although people with no prior contact did significantly improve on their ‘knowledge’ score, compared to people with prior contact, however the change in score was actually very slight. This study had a very small sample size (n=37) with only 13 people having no prior contact with people with intellectual disabilities. Moreover, the fact that the sample was mainly psychology major students is likely to have influenced the data to some extent. The authors also describe a proportion of participants' 'attitude' scores declining over the course of the intervention, which subsequently had an effect on the rest of the data. Scior et al. (2010) found a major disparity between British and Hong Kong Chinese participants in the level of prior contact they reported, but found contact to not predict any of the subscale scores. Contact was not measured in regard to quantity or quality and they consider in their discussion whether this may have impacted the results.

Overall the data suggests that contact has a positive association with attitudes but that the relationship is affected by a number of variables. These include individual variables such as religion and ethnicity as well as variables relating to contact and attitudes, and how they are measured.

3. Do any specific elements of contact emerge as particularly important when considering its effect on, or association with attitudes?

Three elements of contact were considered in the studies reviewed: frequency, quality and the nature of contact.

Frequency of Contact

Some of the studies indicated that frequency of contact was particularly important. Morin et al. (2013) found that the more frequent the contact, the more positive attitudes towards people with intellectual disabilities were on the ‘interaction’ factor. This factor appears to measure comfort and agreeableness to interacting with people with intellectual disabilities, indicating that frequency of contact might have an impact. In contrast, McManus et al. (2010) found that the quantity of contact did not independently predict attitudes towards people with intellectual disabilities.

Quality of Contact

Greater perceived quality of contact (positive experiences) was found to independently predict more positive attitudes towards people with intellectual disabilities in McManus et al.’s (2010) study (unlike quantity of contact or knowledge of intellectual disabilities). The quality of the contact may have an effect on emotional responses towards people with intellectual disabilities; Morin et al. (2013) found that a greater perceived quality of relationship had a significant impact on both the ‘interaction’ factor as well as ‘discomfort’. Qualitative analyses of the descriptions participants used to explain their perceptions of people with intellectual disabilities in Tachibana's (2005) study highlighted that people who judged themselves to be less tolerant than the general public, generally identified a negative experience as their reason for this. In particular a negative experience in childhood appeared to have a significant effect on increasing negative attitudes. They note however, that not everyone who experienced a negative event in childhood had subsequent negative attitudes later in life; although an explanation for this could not be gathered from the data.

Nature of Contact

Some studies included questions about the nature of the participants' relationships with people with intellectual disabilities, for example if they are a family member, friend etc. Most studies indicated that the closer the relationship with people with intellectual disabilities, the more positive the attitude, however there were some exceptions to this. Tachibana & Watanabe (2004), for example, described how family members of people with intellectual disabilities scored lower on the 'independent' subscale. They discuss their findings in the context of a ‘dispositional favourable attitude’ which they expect to be found in the personalities of people who are not relatives of people with intellectual disabilities and have therefore chosen to have contact with people with intellectual disabilities.

An important methodological difference to highlight is the studies' separation of the factors which contributed to ‘contact’ (if they measured these), for instance (as discussed above) with regard to the frequency and quality of the contact with people with intellectual disabilities. Oullette-Kuntz et al. (2009) for example, equate greater frequency of contact with a closer personal relationship with people intellectual disabilities. These two variables may indeed have a strong overlap, but may differ on an individual basis.

The literature suggests that different elements of contact are important to take into account when considering changing attitudes. In particular quality of contact appears important in ensuring positive attitudes. Negative experiences may lead to negative attitudes. More research into these areas is important to make any substantial conclusions.

Discussion

This review indicates that research into the effect of contact on attitudes towards people with intellectual disabilities is thus far limited, with the majority of studies investigating contact as a demographic variable only and employing cross sectional designs which do not allow us to infer any effects of contact on attitudes.

The evidence available to date suggests that contact with people with intellectual disabilities mostly appears to have a positive association with attitudes. The relationship appears to be affected by a number of variables, in particular the quality of the contact. There is tentative evidence to suggest that negative contact experiences, especially in childhood, may have a negative association with attitudes but this merits further careful examination.

Methodological Issues

The evidence has a number of important limitations that should be addressed in future research in this area. Of the 23 papers, only two studies looked at the actual effects of contact (Kobe & Mulick, 1995; Nosse & Gavin, 1991) and one of these studies used a contact experience where participants volunteered in a professional capacity to work with people with intellectual disabilities (Kobe & Mullick, 1995). Both studies used a repeated measures design but had methodological flaws. The remaining studies examined associations between contact and attitudes, rather than measuring the effects of contact on attitudes.

Most studies used standardised methods of measuring attitudes, with good reliability and validity, albeit all results presented were derived from explicit self-report measures of attitudes. Whilst the majority of studies employed the use of self-report paper questionnaires, two studies (Morin et al., 2013; Ouellette-Kuntz et al., 2010) used telephone interviews which may increase social desirability biases (e.g. Acree, Ekstrand, Coates & Stall, 1999) and reduce standardisation of administration, given the relationship with the interviewer. No studies employed implicit measures of attitudes, which have attracted increasing attention recently (e.g. Greenwald et al., 2002). Explicitly measured attitudes may differ from those measured implicitly (e.g. Wilson & Scior, 2014) and this requires further investigation. While some studies measured behavioural intentions through the use of social distance scales, the relationship between contact, attitudes and actual behaviour was not assessed in any of the studies reviewed, which is a major limitation given evidence on the, at best, moderate correlation between attitudes and actual behaviour (Kraus, 1995). The attitude literature suggests that explicit measures of attitudes may predict only deliberative rather than spontaneous behaviour, where implicit measures may predict the latter (Maio & Haddock, 2010), demonstrating limits in what current studies may be able to explain. As noted by Ten Klooster et al. (2009), few contemporary norms are available for the standardised measures used. These norms and what are defined as negative attitudes may differ between cultures, for example on some measures attitudes which do not promote independence may be defined as negative, but less emphasis may be placed on the autonomy of the individual within that culture.

The measurement of contact in the studies raises many issues. All studies reviewed were based on self-report measurement of contact without any robust method for measuring this. It is conceivable that self-reported information regarding contact is inaccurate, not least as it may be based on misunderstandings of the diagnostic label, e.g. ‘learning disabilities’, referred to. Furthermore in six studies, participants were grouped on a dichotomy of contact versus no contact, with little or no attention to other factors. Other studies included assessment of different components of ‘contact’, such as frequency and quality, although these were often used only as a method of grouping participants. There is some suggestion in the literature that frequency of contact may have an effect on attitudes, possibly relating to willingness to interact with people with intellectual disabilities, but may not influence the affective components of attitudes (Morin et al., 2013).

Quality of contact is likely to be important and has been shown to independently predict attitudes towards people with intellectual disabilities (McManus et al., 2010). The mental health literature indicates that contact is likely to reduce stigmatising views towards people with people with mental illness (Couture & Penn, 2003), but also that the type of contact, as well as the amount, may be important factors (Alexander & Link, 2003). Therefore more research focussing on contact, its relating factors and attitudes towards people with intellectual disabilities is required to understand this in more detail.

Further research is needed to address Pettigrew et al.'s (2011) suggestion that 'mere exposure' accounts for positive attitudes following contact. More information about negative contact experiences, for example, is required to make any conclusions as to whether this could result in negative attitudes. Allport's (1954) conditions, hypothesised to be needed for contact to have a beneficial effect, have not been explicitly tested within the reviewed literature. Further information is required to assess these conditions for contact with people with intellectual disabilities.

Another question raised by the present findings is whether the level of disability affects attitudes. The attitude measures which included a vignette (such as the IDLS, Scior & Furnham, 2011) may have controlled this somewhat, but this may also affect the applicability of the reported attitudes to all people with intellectual disabilities. The labels used to describe people with intellectual disabilities vary within the reviewed literature, differing depending on the time and culture where the paper was written. The terminology used in the studies may well have affected their findings, for example people may associate the term 'mental retardation' with more severe intellectual disabilities than those implied by the term 'learning disabilities'. Furthermore, lack of knowledge or misconceptions about the term 'intellectual disability' may affect not only attitudes but also participants' rating of questions regarding contact. Many studies did not include a definition of intellectual disabilities or the respective term used in the study and did not exclude other terms or diagnoses (such as Autism or specific learning difficulties) which people may associate with intellectual disabilities.

As discussed previously, a proportion of studies required participants to state whether or not they had prior contact with people with intellectual disabilities. This raises the question as to whether people have truly had no contact and whether they may be either unaware of such contact, or possibly unwilling to report it. Within the literature reviewed, there were differences in the likelihood of people reporting contact depending on demographic variables such as culture and religion (e.g. Sheridan & Scior, 2013). Given that the prevalence of intellectual disabilities does not appear to vary considerably across cultural groups (e.g. McGrother, Bhaumik, Thorp, Watson & Taub, 2002), it is suggested that in some religious or cultural communities people might be less aware that someone has an intellectual disability, perhaps due to a desire to "hide" it arising from increased stigma (e.g. Scior et al., 2012).

Inclusion and Exclusion of Articles

It is questionable whether some studies should have been included in the review, as their methodology was unclear (Furnham & Pendred, 1983; Nosse & Gavin 1991; Lau & Cheung, 1999). Some other studies initially considered for the review (e.g. Choi & Lam, 2001), were excluded because they did not differentiate the type of disability in assessing prior contact. One study had to be excluded as it did not differentiate between contact towards people with intellectual disabilities and people with mental illness, despite looking at attitudes towards both separately (Schwartz & Armony-Sivan, 2001).

Future Research

In order to measure and analyse contact it is important that there is some standardisation in how it is measured, as has been discussed previously. Dichotomous measurement is unlikely to be reliable and will most likely encompass subjective interpretations of ‘contact’. Previous measures such as the Contact with Disabled Persons (CDP) scale (Yuker & Hurley, 1987), which assesses contact with a range of people with various disabilities, should be considered in future research, and adapted and analysed for reliability and validity.

There is a need for more focussed research into the impact of contact on attitudes, looking at various aspects such as quality, frequency and nature of contact and how these may influence different aspects of attitudes. Attitude measures need to consider the behavioural domain, perhaps through the use of experimental designs, but at the least including a measure of behavioural intent. These are likely to create much clearer possibilities for interventions aimed at reducing stigma.

Clinical Implications

The current review suggests that contact may be effective in reducing negative attitudes towards people with intellectual disability. There is a need for further research though, especially looking into the different facets of contact, to identify the type of contact most likely to improve public attitudes towards people with intellectual disabilities and reduce stigma.

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Part 2: Empirical Paper

The Association between Contact and Intellectual Disability and Mental Health Literacy and Stigma

Abstract

Background: Contact is seen as a key route to tackling the stigma and discrimination associated with disability and illness. Contact theory states that the quality and type of contact, as well as circumstance of the contact experience, influence the effect of contact on prejudice; however the majority of research in intellectual disabilities and mental health focuses on contact as present or absent only.

Aims: The present study set out to examine whether a model that accounts for different aspects of contact (frequency, closeness and nature of contact) is better in explaining the relationship between contact, recognition, causal beliefs and social distance, than a model that only considers contact as present or absent. This question was examined in relation to both intellectual disabilities and mental health problems.

Method: 1397 adult members of the UK general population completed measures of symptom recognition, social distance and causal beliefs in response to two vignettes, depicting someone with intellectual disabilities or schizophrenia. Participants also reported the nature, closeness and frequency of any previous contact with people with intellectual disabilities or mental illness.

Results: A nuanced variable, including frequency, closeness and nature of contact explained more of the variance in social distance, compared to the binary variable for both intellectual disabilities and schizophrenia. Only the closeness of the relationship was individually predictive though, and the models explained only relatively small amounts of the variance. Structural equation modelling of contact, recognition, social distance and causal beliefs demonstrated that the schizophrenia vignette was best modelled with the nuanced contact variable, but that this did not hold for the intellectual disability vignette.

Conclusions: Future research aimed at increasing our understanding of mental health and intellectual disability stigma should avoid assessing contact as a binary variable only, but consider other factors, particularly the closeness of the relationship. Anti-stigma campaigns may benefit from focussing on diagnostic causal attributions as a method of reducing stigma.

Introduction

Stigma has been defined as an ‘attribute that is deeply discrediting’ (Goffman, 1963, p3) which ‘exists when elements of labelling, stereotyping, status loss, and discrimination occur together in a power situation that allows them’ (Link & Phelan, 2001, p377). Stigma and discrimination towards people with mental health problems and intellectual disabilities are significant social problems. It is widely acknowledged that contact is likely to be important in tackling stigma. Research into the relationship between contact and stigma is limited however by a lack of a clear operational definition of contact (Alexander & Link, 2003) and frequent measurement of contact as a binary variable only (Couture & Penn, 2003). This paper seeks to advance our understanding of the relationship between different aspects of contact and stigma; aiming to increase our understanding of factors that contribute to discriminatory beliefs and attitudes in order to focus efforts at reducing stigma in the fields of intellectual disability and mental health. This study investigated the relationship between contact and the public’s beliefs, recognition of and behavioural intentions towards people with intellectual disabilities and schizophrenia, using previous research to provide a theoretical framework. Similarities and differences in the relationships between contact and these two diagnoses were explored.

Research into stigma has increased dramatically in recent decades and there is a much greater awareness of the impact that being a member of a stigmatised group can have. Despite significant improvements in inclusion and current legislation and policy to support the rights of people with mental health problems and intellectual disabilities, stigma is reported to still have significant negative effects on relationships, opportunities and employment as well as the stigmatised individual’s self esteem (e.g. Jahoda & Markova, 2004; Couture & Penn, 2003).

Contact, defined as personal experience with members of a stigmatised group, and its effect on prejudicial attitudes, has been the focus of research for a number of decades. Intergroup contact theory (Allport, 1954), developed following observations of racial prejudice, detailed optimal conditions for contact to lead to improved attitudes towards members of stigmatised groups. It was proposed that: a) members of different groups must be of equal status in the situation, b) contact supports the realisation of a common goal, c) contact is with members of a majority group and members of higher status within the minority group, d) that the contact must be promoted by officials/the social climate, e) the contact is intimate, f) it is pleasurable, g) that members of both groups interact in important activities and have common valued goals, h) that the contact is by choice, and i) is selected over other rewards (Livneh, Chan & Kaya, 2013). Research continues to provide evidence to suggest that these conditions are optimal, but that contact per se has a positive effect in reducing negative attitudes (Pettigrew & Tropp, 2006).

Contact is thought to provide opportunities for the individual to encounter a member of a stigmatised group who does not meet the negative expectations of the individual’s stereotypes. This challenge to the individual’s belief system is reconciled by an improvement in attitudes and a generalisation to other members of the same group (effectively adapting the stereotype) (Desforges et al., 1991). As well as changes to the individual’s belief system, the individual's emotional reaction to contact is likely to be important; for example it has been suggested that factors which may be important in contact having an effect on reducing prejudicial attitudes are a reduction in intergroup anxiety and a fondness towards or ‘liking’ of the stigmatised person (Pettigrew & Tropp, 2006).

While stigma and its public expression in the form of discrimination, bullying and hate crime are major concerns for people with intellectual disabilities (Mencap, 2010), to date stigma has found limited attention in the intellectual disability field, in contrast to the large body of literature on mental health stigma. Studying intellectual disabilities and mental health stigma together can advance our understanding, as identification of similarities and differences in the stigma processes may enable learning to be shared, particularly in designing effective interventions. Pettigrew & Tropp (2006) found in their meta-analysis of studies assessing intergroup contact theory, that the same principles of intergroup contact may be relevant across different stigmatised groups, but that contact varied in its effect on prejudicial attitudes, with the greatest effect being with people with physical disabilities, followed by intellectual disabilities and then psychiatric disabilities. By investigating the two areas of research together, a greater understanding of contact and what underlies the process of change in attitudes can be better understood.

Comparison of different diagnoses is common in the literature, for example studies assessing stigma in mental health have compared stigma towards schizophrenia and depression (e.g. Angermeyer, Beck, Dietrich & Holzinger, 2004; Angermeyer, Matschinger & Corrigan, 2004). Whilst this allows distinctions to be made, it can be argued that these diagnoses are not particularly helpful comparisons given the disparity in prevalence, with depression occurring in approximately 4-10% (NICE, 2010) and schizophrenia in approximately 1% of adults (NICE, 2009), as well as the high level of co-morbidity of the diagnoses (Buckley, Miller, Lehrer & Castle, 2009). There are various reasons why comparing stigma of intellectual disabilities and schizophrenia in particular may be useful, including suggestions that recognition and understanding of both conditions is poor in the general population (Jorm, 2000; Mencap, 2008). Furthermore it could be argued that schizophrenia is suitable for comparison with intellectual disabilities, given the pervasive nature of both conditions and broadly similar prevalence rates (Scior & Furnham, 2011).

Contact towards people with mental health problems

Contact has been found to be an effective method in reducing mental health stigma (Corrigan & Penn, 1999; Corrigan, 2013) and to yield significantly better change than education, especially among adults (Corrigan, Morris, Michaels, Rafacz & Rusch, 2012). Research is examining the processes underlying the effects of contact. It has been suggested, for example, that the relationship between contact and stigma (towards people with schizophrenia and depression) can be modelled by contact/familiarity altering beliefs about perceived dangerousness, which consequently reduces fear and has a positive impact on social distance (Corrigan et al., 2001; Angermeyer, Matschinger & Corrigan, 2004). Whilst this model explained a significant amount of the variance for both schizophrenia (20.6%) and depression (14.8%), a large proportion was unexplained and it has been suggested that other processes, such as attributions about cause, may affect the relationship (Angermeyer, Matschinger & Corrigan, 2004). Research into stigma has drawn on attribution theory (Weiner, 1985) which acknowledges that people make causal inferences to explain events on dimensions of control and stability. It is proposed that stigma increases when lay people make inferences about mental health problems being stable over time and that people are in some way to ‘blame’ for their symptoms and so it has been suggested that the promotion of external attributions such as the biomedical model can counter this (Corrigan, 2000).

The literature exploring contact suggests that both retrospective and prospective contact can reduce negative attitudes (Couture & Penn, 2003) but existing research rarely considers factors such as quality and quantity of contact, which are likely to affect the relationship between contact and stigma. Alexander & Link (2003) used a nationally representative sample to test the link between contact and stigma towards people with mental health problems. They found that, in general, as contact increased, participants' ratings of perceived dangerousness and desired social distance decreased across a range of contact types. They found however, that the type of contact - that is whether it was intentional or unintentional and personal or impersonal - influenced its impact and they concluded that contact type should be considered when studying stigma. In this study contact was classified as impersonal or personal (e.g. family contact: personal, work contact: impersonal), without attention to other aspects of contact relationships that may well influence its effects, such as their closeness or the frequency of contact.

Contact towards people with intellectual disabilities

Despite the limited research on the stigma-contact relationship in intellectual disabilities, studies to date do indicate a positive association between contact and positive attitudes, however the relationship appears to be more complex than contact per se (Scior, 2011). For example, the quality of the contact is indicated as an important variable, with negative contact experiences, especially at an early age, possibly leading to an increased desire for social distance (Narukawa, Maekawa, & Umetani, 2005). The closeness of the relationship has also been found to be associated with lower stigma (e.g. Oullette-Kuntz, Burge, Browne & Arsenault, 2010), although it has also been suggested that the voluntary nature of the relationship may also be important in reducing stigma (Tachibana & Watanabe, 2004). This indicates that although contact, as a binary variable, is predictive of social distance, a more nuanced understanding of the complex contact-stigma relationship may have implications for interventions designed to reduce stigma.

Mental Health and Intellectual Disability Literacy

The concepts of 'mental health literacy' (Jorm, 2000) and 'intellectual disability literacy' (Scior & Furnham, 2011) address the understanding of a condition, typical symptoms, causes and suitable interventions of the general public towards mental health problems and intellectual disabilities. There has been a large body of research into mental health literacy (Jorm, 2012), including how interventions can be developed to reduce stigmatising attitudes and behaviour (e.g. Jorm, 2000), with much less research in the area of intellectual disability literacy.

Stigma research has been criticised as being 'confused' (Jorm & Oh, 2009), with multiple variables being measured using a variety of methods. Research, particularly in the mental health field, indicates that literacy, attributions and social distance are likely to be closely linked. Recognition and knowledge of a disorder have been found to be associated with social distance, with the direction of this relationship differing depending on the diagnosis. Recognition of schizophrenia appears to increase social distance (Angermeyer & Dietrich, 2006) whilst the opposite appears to hold true for intellectual disabilities (Conolly, William & Scior, 2013). Recognition of a condition has been found to affect lay people's attributions about the cause, with recognition of intellectual disability increasing biomedical attributions (Scior, 2013). The literature for schizophrenia is less clear, indicating that recognition increases either biomedical or social attributions (Angermeyer & Dietrich, 2006; Schomerus, Matschinger & Angermeyer, 2006). There is also little consistent evidence in the mental health field to suggest which causal beliefs are associated with lower social distance (Jorm & Oh, 2009). This is of importance, given that anti-stigma campaigns such as England's Time to Change emphasise a biomedical understanding of mental health problems. There is a need for associations between literacy, attributions and social distance, already indicated in the literature, to be modelled and tested statistically to provide clarity.

Study Aims

This study set out to examine the role of contact in relation to lay responses to intellectual disabilities and schizophrenia. The central aim was to examine whether a model that accounts for contact as a nuanced variable, is better at explaining stigma (social distance), causal beliefs (attributions) and literacy (recognition) for intellectual disabilities and schizophrenia, than a model that only considers contact as present or absent. This question was examined in relation to both intellectual disabilities and severe mental illness/schizophrenia. To do justice to the complexity of contact, and to expand further on previous research, it was defined and measured not only as the presence or absence of contact, but also the nature (voluntary or involuntary), frequency and closeness of the contact relationship. It was hypothesised that by including frequency, closeness and nature of the relationship in the models, more variance in the contact, stigma and literacy relationship would be explained in comparison to the presence of contact only.

Method

Sample

The total sample consisted of 1397 respondents from the UK general population of 16 years old or over. 341 respondents completed the survey during the current recruitment process. This data was merged with data previously collected by my supervisor and members of her research team between late 2010 and early 2012 (n=1056), using the same measures and procedure. The sample size for this study exceeded what was required as calculated through a-priori power analysis (Soper, 2014). Calculations for the structural equation models for effect size 0.1 produced a sample size of 152 for contact as a nuanced variable and a sample size of 400 for the binary variable.

The mean age of respondents was 26.2 years (range 16 to 74 years), with 46.9% of the sample female and 53.1% male. Previous contact with people with intellectual disabilities was reported by 46.9% (n=655) and with people with mental health difficulties by 71.5% (n=999). Of the total sample, 3.8% (n=54) had been educated to age 16 or less, 68.1% (n=951) to age 18, 16.8% (n=234) were graduates and 11.3% (n=158) were postgraduates. In regards to ethnicity, 57.8% (n=808) identified themselves as ‘White’, 24.9% (n=348) identified as ‘Asian’, 7.3% (n=102) as ‘Black’, 8.6% (n=120) as ‘other’ and1.3% (n=18) of responses were missing.

Procedure

All participants were provided with a link to an online survey, hosted using the e-survey software Opinio. Upon visiting the study site, they were presented with the information sheet and then the full questionnaire pack including the measures and demographic questions. The invitation to participate was circulated via email to the student body at University College London (UCL) and via social networking sites to contacts of the researcher and supervisor’s research team, who were also asked to forward it on to others. To encourage participation respondents were given the chance to enter into a prize drawer for one of two £50 vouchers (or one £100 voucher for the previously collected data) for a retailer of their choice.

Participants were presented with the diagnostically unlabelled intellectual disability vignette and corresponding questions, and then the unlabelled schizophrenia vignette and corresponding questions. For each vignette participants were initially asked questions to assess their recognition of the condition before completing further items. Participants also completed the Community Living Attitude Scale – Intellectual Disability version (CLAS-ID; Henry, Keys, Jopp, & Balcazar, 1996) as part of the standard procedure, however this was not analysed for this study as it relates to attitudes towards social inclusion for people with intellectual disabilities only.

Participants were asked to provide their socio-demographic information, including details about their contact with people with “learning disabilities” and also those with “mental health problems”. Of note, as part of the CLAS-ID, participants were provided with a definition of ‘learning disabilities’, shortly before responding to questions about contact, to enhance the validity of their responses, see Appendix C. The entire questionnaire took approximately 15 to 20 minutes to complete. Finally, at the end of the questionnaire participants had the option of providing their contact details in order to be entered into the prize draw.

Design

This study used a cross-sectional design with contact as a between-subjects factor and diagnosis as a within-subjects variable. The exogenous variable within each model was contact, measured as a binary variable (yes/no) or as a more detailed measure of frequency of contact, closeness of the contact relationship and the nature of the relationship. Participants were instructed to report on the closest contact relationship if they had contact with more than one person in the respective category. The endogenous variables were recognition of condition (intellectual disability or schizophrenia), social distance and causal beliefs.

Measures

Contact

The frequency of contact was measured using seven categories: daily/almost daily, once or twice a week, once or twice a month, more than 3 times a year, once or twice a year, less than once a year and no contact. Closeness of contact was measured using a 9 point Likert scale, where 1 = not at all close and 9 = extremely close, with 0 representing no contact. The nature of the relationship was coded from the open ended responses, using seven categories: close relative (sibling, parent and child), distant relative (any other relative), friend/partner, acquaintance, fellow student/work colleague, employed to work with and no contact. Arguably the relationship between a friend and partner may differ to a significant degree, however, the closeness of the relationship is considered elsewhere and this categorisation allowed for consideration of the voluntary nature of both relationships. The nature of the relationship was then coded into three categories: voluntary (friend/partner, employed to work with), involuntary (close relative, distant relative, acquaintance, fellow student/work colleague) and no contact. For the analyses these were then made into binary variables - voluntary contact or anything else (involuntary and no contact) and involuntary or anything else (voluntary or no contact). The relationship types were also collapsed into four categories: employed; other relative and fellow student/colleague and acquaintance; friend/partner and close relative. These variables were only used to assess whether ‘nature’, the voluntary nature of the contact, could be improved by including the relationship type. This was done by creating four binary variables, relationship type compared to all others (including no contact).

Intellectual Disability Literacy Scale

Recognition, social distance and causal beliefs were assessed using the Intellectual Disability Literacy Scale (IDLS, Scior & Furnham, 2011, see Appendix D). This is a self-report questionnaire designed for use with the general population to assess stigma towards people with intellectual disabilities and schizophrenia. The measure has good psychometric properties, including in the context of cross-cultural research. The IDLS was designed to assess the following aspects: 1) respondents' recognition of markers of schizophrenia or intellectual disabilities; 2) 22 items regarding respondents' causal beliefs about intellectual disability and schizophrenia (in relation to the vignette) on four subscales: adversity, biomedical, supernatural, environment; 3) 22 items regarding respondents' beliefs about suitable interventions/sources of support on three subscales: lifestyle, expert help, religion/spiritual; 4) 4 items designed to measure respondents' desire for social distance as a measure of external stigma.

Recognition

Participants' knowledge of intellectual disability and schizophrenia was assessed by presenting them with two unlabelled vignettes of a male in his 20's with symptoms of mild intellectual disability or schizophrenia, to assess whether they can recognise typical markers of the respective condition. Responses were coded as either correct or incorrect. Coding as 'correct' included reference to intellectual disability or a synonym, as well as other developmental disabilities, namely specific learning difficulty (LD) or autism spectrum disorder (ASD), as previous research using the IDLS has indicated that people who identified any of these categories were distinct from those who failed to identify a possible intellectual disability, specific LD or ASD, on social distance (Scior, Potts & Furnham, 2013). For schizophrenia, only responses referring to schizophrenia/psychosis or a close synonym were coded as ‘correct’.

Social Distance

Participants rated their willingness to engage with the person in the vignette in four social situations of increasing intimacy, on a 7 point scale (1=strongly agree to 7=strongly disagree). A total score for the social distance scale was obtained from the mean of the five items, reversed so that higher scores indicate a greater desire for social distance.

Causal Beliefs

Participants responded to each of the 22 causal belief items on a seven-point Likert scale (1=strongly disagree to 7=strongly agree). Items load on four factors (Scior & Furnham, 2011): biomedical (five items), adversity (five items), supernatural (five items) and environment (seven items), see Appendix E.

Ethics

This study was part of a larger research project that has been approved by the UCL Research Ethics Committee (Project ID Number: 0960/01). All participants were initially provided with a brief information sheet which explained the purpose and content of the study in simple English. Participants were able to discontinue the survey at any time. It was not a requirement of the study to provide any contact details, however participants had the option to do so in order to be entered into a prize draw. The personal information was immediately separated from responses once downloaded from Opinio, and was stored in a separate password protected file to ensure confidentiality.

Data Analysis

The data were analysed using SPSS version 21. Descriptive statistics were used to describe the sample characteristics. Outliers were examined by using standardised scores; any value with $z > 3$ was replaced with the mean value for that variable +/- two standard deviations, as suggested by Field (2009). For the intellectual disabilities vignette, four outliers were identified for supernatural causal beliefs. For the schizophrenia vignette, six outliers were identified for this subscale and one outlier for environmental causal beliefs. Due to the large positive skewness for the supernatural subscale (the majority of participants disagreed with the items) this was log transformed.

Listwise deletion of missing cases was conducted for each data set (intellectual disability and schizophrenia). This ensured that cases were not included in the earlier regressions which would then later be excluded from the structural equation model. The intellectual disabilities vignette therefore had a sample size of N=1264; the schizophrenia vignette had a sample size of N=1354.

Hierarchical regression analyses and logistic regression analyses were conducted to examine the relationship between the contact variables, recognition, causal beliefs and social distance. Structural equation modelling (SEM) was conducted using AMOS version 21.0.0. The models with contact as a multi-faceted variable included two latent variables, contact and causal beliefs (unobserved), and nine observed variables (indicators). The models with contact as a binary variable only included one latent variable, causal beliefs (unobserved), and seven observed variables (indicators). SEM assumes that observations are taken from a continuous and multivariate normal population. The current models included both continuous and categorical variables. When using categorical variables in SEM it is assumed that each variable has an underlying continuous scale, which is considered to be difficult, if not unrealistic (Byrne, 2010). The χ^2 statistic in SEM has been found to be influenced most by binary variables and that this influence reduces as the number of categories increases (Green, Akey, Fleming, Hershberger & Marquis, 1997). The assessment of normality for each model in this study is reported, where the multivariate normality is not held (multivariate kurtosis critical ratio > 5.00), analyses were based on asymptotic distribution free (ADF) estimation (Browne, 1984), instead of the usual maximum likelihood (ML) estimation as suggested in Byrne (2010) for sample sizes of at least 1000.

The literature indicates that there is considerable debate as to how SEM models are evaluated for their 'fit' and that whilst 'norms' have developed in particular fields, there are no governing rules (Hoyle, 2011). In consideration of recommendations in the literature, the indices of fit used to assess the models were an overall chi-squared fit (χ^2), the comparative fit index (CFI) (>0.9 acceptable, >0.95 good fit; Hu & Bentler, 1999), the Tucker-Lewis Index (TLI) (with values between 0 and 1, with values close to 0.95 suggesting good fit; Tucker & Lewis, 1973) and the root mean square error of approximation (RMSEA) (< 0.05 considered a good fit, 0.08 to 1.0 mediocre fit, > 1.0 model not accepted; Byrne, 2010). Standardised parameter estimates, which correspond to effect-size estimates, were used to make comparisons about the pathways in the model. Chi-square difference tests were used to compare the models. Figures 2 and 3 map the predicted relationships between the dependent and independent variables examined for both the intellectual disability and schizophrenia models. Initially the models were run without accounting for any covariance, however on inspection of the modification indices one value, between the error terms for biomedical and adversity causal beliefs, was egregiously high for all four models. A covariance pathway was therefore included between biomedical and adversity attributions for all models. A direct pathway between recognition and biomedical causal beliefs was included for the intellectual disability vignette only, given previous evidence of this effect (Scior, 2013)

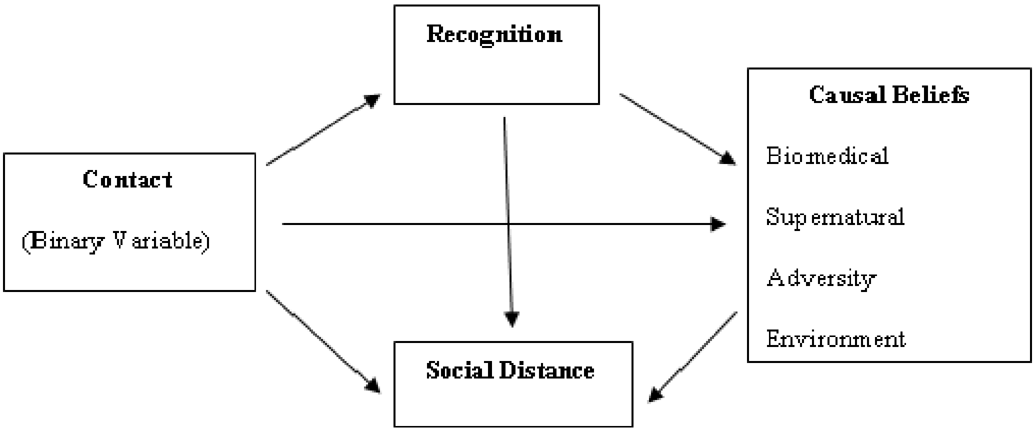

Figure 2. Theoretical Model of the Relationship between Contact (binary), Recognition, Social Distance and Causal Beliefs for the Intellectual Disability and Schizophrenia Vignettes.

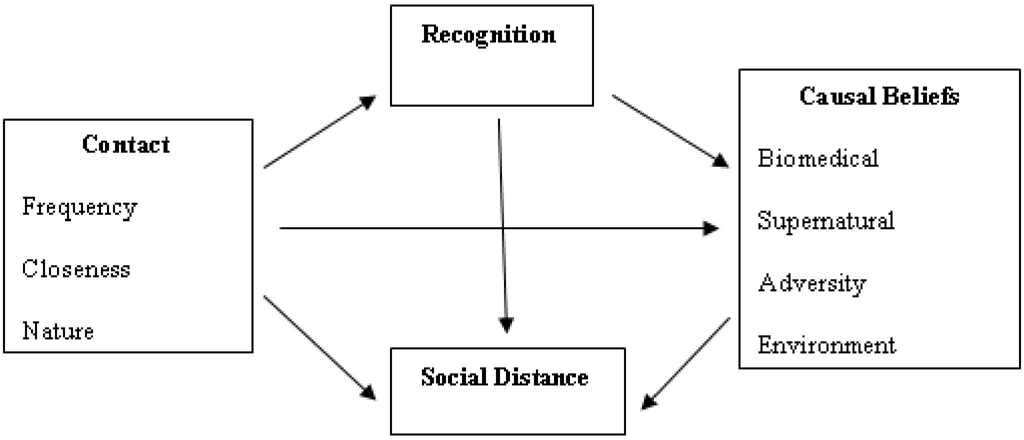

Figure 3. Theoretical Model of the Relationship between Contact (frequency, closeness and nature), Recognition, Social Distance and Causal Beliefs for the Intellectual Disability and Schizophrenia Vignettes.

Results

The overarching aim of this study was to examine whether an understanding of contact that goes beyond its common description as either present or absent can advance our understanding of lay people's responses to intellectual disability and schizophrenia. Accordingly, regression analyses were conducted to assess the effect of contact as both a binary and nuanced variable on social distance, recognition and causal beliefs. These analyses then informed the mapping of structural equation models which were subsequently tested. This process was conducted initially for the data for the intellectual disability vignette and then for the schizophrenia vignette. All analyses were conducted at the 5% significance level, although results approaching $p=0.05$ were treated with caution due to conducting multiple analyses.

1. Intellectual Disability

In order to assess whether a multi-faceted measure of contact explained significantly more of the variance in social distance for intellectual disability, compared to the binary contact variable, a hierarchical regression analysis was conducted, see Table 4. Contact as a binary variable was entered at step 1; frequency, closeness and nature of contact were added at step 2. The nature variable entered at step 2 was a binary variable (voluntary versus involuntary and no contact), this in conjunction with the contact binary variable (contact versus no contact) meant that participants with no contact had been accounted for, leaving the nature variable to assess the value of 'involuntary or voluntary'. Although contact was the key variable of interest, it was expected that whether or not participants recognised the disorder depicted in the vignette would have an effect on social distance and therefore recognition was added to the model at step 3.

Table 4

Hierarchical Regression for Intellectual Disability Vignette: Contact and Recognition as Predictors of Social Distance.

Variable	*B* (95% CI)	*SE B*	*β*	*p*
Step1				
Constant	4.36 (4.26, 4.47)	0.05		<.001
Contact (yes/no)	-0.67 (-0.83,-0.51)	0.08	-.22	<.001
Step 2				
Constant	4.39 (4.28, 4.50)	0.06		<.001
Contact (binary)	-0.20 (-0.50, 0.10)	0.15	-.07	.20
Frequency	-0.08 (-0.15, 0.00)	0.04	-.10	.06
Closeness	-0.07 (-0.11, -0.02)	0.03	-.11	.01
Nature (voluntary)	-0.04 (-0.30, 0.21)	0.13	-.01	.74
Step 3				
Constant	3.85 (3.70, 4.00)	0.08		<.001
Contact (binary)	-0.09 (-0.38, 0.20)	0.15	-.03	.53
Frequency	-0.06 (-0.14, 0.02)	0.04	-.08	.11
Closeness	-0.08 (-0.12, -0.03)	0.02	-.12	<.01
Nature (voluntary)	-0.05 (-0.29, 0.20)	0.12	-.01	.71
Recognition	0.79 (0.63, 0.95)	0.08	.26	<.001

Note:
R^2= .050 for Step 1, ΔR^2= .012 (R^2= .062) for Step 2 ($p < .001$), ΔR^2= .064 (R^2= .126) for Step 3 ($p < .001$)
Contact: 0 = no, 1 = yes; Frequency: 0 = no contact, to 6 = daily or almost daily contact; Closeness: 0 = no contact to 9 = extremely close; Nature: 0 = no contact or involuntary, 1 = voluntary; Recognition: 0 = correct, 1 = incorrect.

Prior contact with someone with intellectual disabilities predicted social distance; those reporting no prior contact scored higher on social distance than those reporting prior contact. More of the variance in the model, albeit only a small increase, was explained by including the three indicators of contact, with ‘closeness’ of the contact relationship emerging as the only contact variable that individually predicted social distance. Adding recognition to the model increased the amount of variance explained, with closeness and recognition both predicting social distance. 37.7% of participants correctly identified the vignette; recognition of the vignette was associated with a reduced desire for social distance. The frequency of contact and the nature of the relationship did not predict social distance in the model. The overall model, including recognition accounted for 12.6% of the variance in social distance. To assess whether the nature variable could be improved by taking a more detailed account of the type of relationship, beyond the distinction of it as either voluntary or involuntary, the regression was repeated, replacing ‘nature’ with the four binary relationship categories (employed vs. everything else; other relative and fellow student/colleague and acquaintance vs. everything else; friend/partner vs. everything else and close relative vs. everything else). The inclusion of these variables only altered the model slightly $\Delta R^2 = 0.03$; only ‘close relative’ was significant and only just at the 5% level ($p = 0.05$ at step 2 only). Given the increased risk of type 1 error due to multiple calculations, these ‘nature of the contact relationship’ variables were not included in any further analyses.

Whether or not a lay person identifies that the presentation in the vignette might relate to an underlying intellectual disability is likely to be affected by prior contact. To examine this relationship, a logistic regression was conducted; see Table 5, with recognition as the dependent variable and aspects of contact as the independent variables.

Table 5

Logistic Regression for Intellectual Disability Vignette: Aspects of Contact as Predictors of Recognition.

Variable	*B*	*SE B*	Odds Ratio (95% CI)
Model 1			
Constant	0.16	0.86	
Contact (yes/no)	0.61	0.12	1.85 (1.47 – 2.33) ***
Model 2			
Constant	0.22	0.25	
Contact (binary)	0.56	0.22	1.76 (1.15 – 2.68) **
Frequency	-0.07	0.06	0.93 (0.83 – 1.04)
Closeness	0.05	0.04	1.05 (0.98 – 1.13)
Nature (voluntary)	-0.02	0.18	0.98 (0.69 – 1.40)

Note:
*p<0.05 **p<0.01***p<0.001
Model 1: 0.02 (Cox & Snell), 0.03 (Nagelkerke), $\chi^2(1) = 27.482$, $p < .001$
Model 2: 0.02 (Cox & Snell), 0.03 (Nagelkerke), $\chi^2(3) = 2.763$, $p = .43$

The analysis indicated that participants who reported prior contact were almost twice as likely to recognise that the vignette might represent a person with intellectual disabilities, compared with those reporting no prior contact. The predictive power of contact was not increased by adding in frequency, closeness and nature of the contact relationship.

The previous hierarchical regression examining predictors of social distance only accounted for a modest amount of the variance. In line with the hypothesis that attributions, referred to here as causal beliefs, may improve our understanding of social distance, these were added to the model, see Table 6. Contact and in particular, recognition, emerged in preceding analyses as important in explaining the variance in social distance and therefore were entered in block 1, with the further indicators of contact added in step 2. Causal beliefs were added to the model in step 3, to examine whether more variance in the model was explained by these factors.

Table 6

Hierarchical Regression for Intellectual Disability Vignette: Recognition, Contact and Causal Beliefs as Predictors of Social Distance.

Variable	*B* (95% CI)	*SE B*	*β*	*p*
Step1				
Constant	3.82 (3.67, 3.98)	0.08		< .001
Recognition	0.78 (0.62, 0.95)	0.08	.26	< .001
Contact (binary)	-0.56 (-0.72, -0.40)	0.08	-.19	< .001
Step 2				
Constant	3.85 (3.70, 4.00)	0.08		< .001
Recognition	0.79 (0.63, 0.95)	0.08	.26	< .001
Contact (binary)	-0.09 (-0.63, 0.53)	0.15	-.03	.53
Frequency	-0.06 (-0.14, 0.02)	0.04	-.08	.11
Closeness	-0.08 (-0.12, -0.03)	0.02	-.12	<.01
Nature	-0.05 (-0.29, 0.20)	0.12	-.01	.71
Step 3				
Constant	3.65 (3.31, 3.99)	0.18		< .001
Recognition	0.35 (0.16, 0.54)	0.10	.11	< .001
Contact (binary)	-0.06 (-0.34, 0.23)	0.14	-.02	.70
Frequency	-0.06 (-0.13, 0.02)	0.04	-.07	.14
Closeness	-0.07 (-0.11, -0.02)	0.02	-.11	.00
Nature	-0.07 (-0.30, 0.17)	0.12	-.02	.59
Biomedical	-0.09 (-0.16, -0.03)	0.03	-.09	.00
Adversity	-0.17 (-0.25, -0.10)	0.04	-.15	< .001
Supernatural	0.27 (-0.17, 0.72)	0.23	.04	.23
Environment	0.37 (0.29, 0.46)	0.04	.30	< .001

Note:
R^2= .114 for Step 1, ΔR^2= .013 (R^2= .126) for Step 2 (*p* < .001), ΔR^2= .065 (R^2= .191) for Step 3 (*p* < .001)
Contact: 0 = no, 1 = yes; Frequency: 0 = no contact, to 6 = daily or almost daily contact; Closeness: 0 = no contact to 9 = extremely close; Nature: 0 = no contact or involuntary 1 = voluntary; Recognition: 0 = correct, 1 = incorrect.

Prior contact and recognition of intellectual disabilities predicted reduced social distance. The model explained more variance in social distance when the indicators of contact were included, however this was small and individually only closeness, not frequency or nature, predicted social distance. Adding causal beliefs increased the variance explained by the model; biomedical, adversity and environmental causal beliefs were individually significant predictors, whilst supernatural beliefs were not. Endorsement of biomedical and adversity-related causes of the difficulties presented in the vignette, were associated with lower social distance, whilst endorsement of environmental causes was associated with increased social distance. The model including causal beliefs accounted for 19.1% of the variance in social distance.

In summary, regression analyses demonstrated that a nuanced contact variable explains more of the variance in social distance than a binary variable, although only closeness of relationship was individually predictive. This was not the case for recognition where the nuanced variable did not explain more variance than the binary variable. To examine the relationships between contact, recognition, causal beliefs and social distance fully, and to determine whether a nuanced variable explained significantly more of the variance in the model, two structural equation models were developed and compared. Figure 4 includes contact as a binary variable only and Figure 5 includes contact as a nuanced variable, including frequency, closeness and nature of contact. The paths of the model were based on previous theory and the results of the regression analyses.

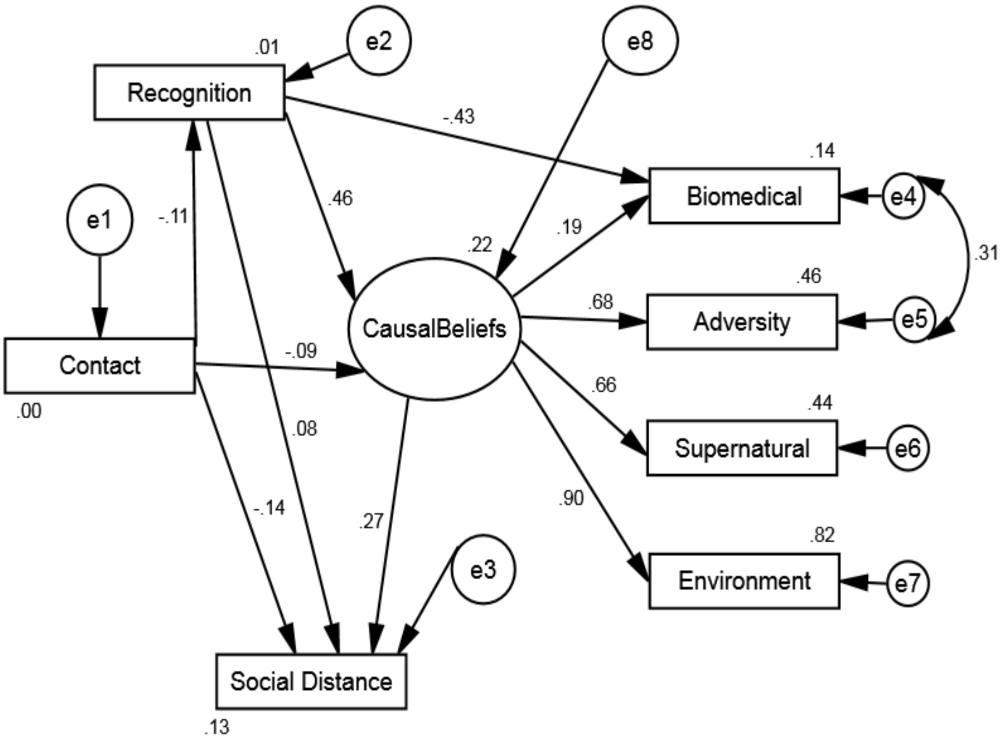

Figure 4. Structural Equation Modelling for Intellectual Disability Vignette: Contact as a Binary Variable, Recognition, Social distance and Causal beliefs, with Standardised Coefficients.

For the model presented in Figure 4, the assessment of normality indicated a multivariate kurtosis critical ratio of -7.04 therefore ADF estimation methods were used. The hypothesised model appeared to be a poor fit for the data $\chi^2 = 197.41$ (df = 9), $p<0.001$; CFI = 0.85; TLI = 0.64; and RMSEA = 0.13. All individual pathways were significant at the 5% level.

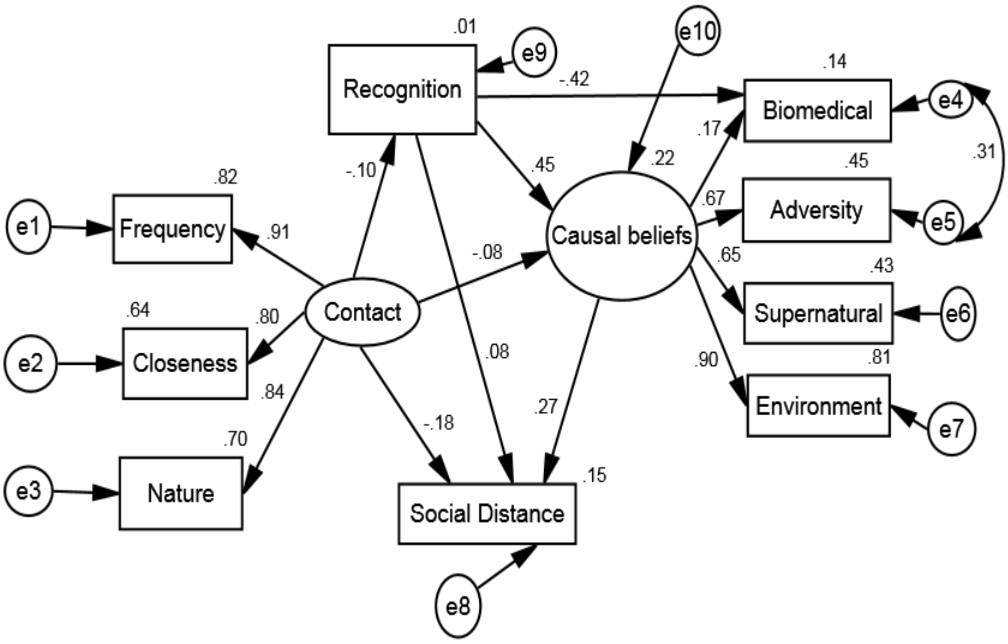

Figure 5. Structural Equation Modelling for Intellectual Disability Vignette: Contact as a Nuanced Variable, Recognition, Social distance and Causal Beliefs, with Standardised Coefficients.

For the model presented in Figure 5, the assessment of normality indicated a multivariate kurtosis critical ratio of 7.01 therefore ADF estimation methods were used. The hypothesised model appeared to be an adequate fit for the data $\chi^2 = 209.43$ (df = 21), $p<0.001$; CFI = 0.92; TLI = 0.86; and RMSEA = 0.08. All individual pathways were significant at the 5% level.

The model with the nuanced variable appears to be a better fit for the data, Δ CFI = 0.07. However, a comparison of the chi-square values demonstrated the difference in fit not to be significant, $\chi^2 = 12.02$ (df=12), p = 0.45

2. Schizophrenia

The previous approach to the analyses was repeated for the data obtained for the schizophrenia vignette. Contact for this vignette related to contact with people with mental health problems, not specifically people with a diagnosis of schizophrenia. Initially the relationship between contact and social distance was examined using a hierarchical regression, see Table 7. Contact as a binary variable was entered at step 1 with the indicators frequency, closeness and nature of contact included at step 2. As with the intellectual disability vignette, recognition was hypothesised to have an effect on the relationship between contact and social distance, hence was included at step 3, although this effect was hypothesised to be smaller than that for intellectual disabilities.

Table 7

Hierarchical Regression for Schizophrenia Vignette: Contact and Recognition as Predictors of Social Distance.

Variable	*B* (95% CI)	*SE B*	β	*p*
Step1				
Constant	4.84 (4.69, 4.98)	0.08		< .001
Contact (binary)	-0.63 (-0.81, -0.45)	0.09	-.19	< .001
Step 2				
Constant	4.90 (4.75, 5.05)	0.08		< 0.001
Contact (binary)	-0.11 (-0.39, 0.17)	0.14	-.03	.45
Frequency	-0.01 (-0.07, 0.06)	0.03	-.01	.78
Closeness	-0.10 (-0.13, -0.06)	0.02	-.21	< .001
Nature (voluntary)	-0.02 (-0.21, 0.17)	0.10	-.01	.86
Step 3				
Constant	4.75 (4.55, 4.96)	0.11		< .001
Contact (binary)	-0.08 (-0.36, 0.21)	0.14	-0.02	.60
Frequency	-0.01 (-0.07, 0.06)	0.03	-0.01	.78
Closeness	-0.09(-0.13, -0.06)	0.02	-0.21	< .001
Nature (voluntary)	-0.01 (-0.20, 0.18)	0.10	-0.00	.90
Recognition	0.18 (0.00, 0.35)	0.09	0.05	.05

Note:
$R^2 = 0.035$, $\Delta R^2 = 0.026$ ($R^2 = 0.061$) for Step 2 ($p<0.001$), $\Delta R^2 = 0.003$ ($R^2 = 0.064$) for Step 3 ($p = 0.046$)
Contact: 0 = no , 1 = yes; Frequency: 0 = no contact, to 6 = daily or almost daily contact; Closeness: 0 = no contact, to 9 = extremely close; Nature: 0 = no contact or involuntary, 1 = voluntary; Recognition: 0 = correct, 1 = incorrect.

Prior contact with someone with schizophrenia was associated with lower social distance in comparison to no contact. More of the variance in the model was explained by including the three indicators of contact, however as for intellectual disability, ‘closeness’ of the relationship was the only variable that individually predicted contact. 32.6 % participants correctly identified the vignette as possibly depicting someone with schizophrenia or psychosis. Adding recognition to the model increased the amount of variance explained in the model, although this was small and only significant at the 5% level. Closeness and recognition predicted social distance, although the contribution of recognition was only just significant at the 5% level. Recognition of the vignette as possibly representing a person with schizophrenia, predicted less social distance. Frequency of contact and the nature of the relationship did not predict social distance in the model. The overall model only accounted for 6.4% of the variance in social distance, much less than for intellectual disability. To assess whether the nature variable could be improved by taking a more detailed account of the type of relationship, beyond the distinction of it as either voluntary or involuntary, the regression was repeated, replacing ‘nature’ with the four binary relationship categories (employed vs. all others; other relative, fellow student/colleague or acquaintance vs. all others; friend/partner vs. all others and close relative vs. all others). The inclusion of these variables only altered the model slightly $\Delta R^2 = 0.07$ and only contact through being employed to work with people with mental health problems was significant at the 5% level ($p = 0.03$ at step 2, $p = 0.02$ at step 3). Given the increased risk of type 1 error due to multiple calculations, these ‘nature of the contact relationship’ variables were not included in any further analyses.

Whilst recognition only played a small role in predicting social distance, as for the intellectual disability vignette, it seemed important to examine the effect of contact on recognition, see Table 8.

Table 8

Logistic Regression for Schizophrenia Vignette: Aspects of Contact as Predictors of Recognition

Variable	*B*	*SE B*	Odds Ratio (95% CI)
Model 1			
Constant	0.44	0.07	
Contact (binary)	1.17	0.15	3.21 (2.39 – 4.32)***
Model 2			
Constant	0.50	0.20	
Contact (binary)	1.02	0.22	2.76 (1.80 – 4.25)***
Frequency	0.00	0.05	1.00 (0.91 – 1.10)
Closeness	-0.02	-0.02	0.97 (0.93 – 1.03)
Nature (voluntary)	0.11	0.14	1.12 (0.86 – 1.46)

Note:
*p<0.05 **p<0.01***p<0.001
Model 1: 0.050 (Cox & Snell), 0.069 (Nagelkerke), $\chi^2(1) = 68.741$, $p < 0.001$
Model 2: 0.051 (Cox & Snell), 0.071 (Nagelkerke), $\chi^2(3) = 1.726$, $p = 0.631$

The analysis indicates that the odds of participants correctly recognising that the vignette might depict a person with schizophrenia were much greater for people who reported prior contact with someone with mental health problems. The predictive power of contact for recognition was not increased by adding frequency, closeness and nature of the contact relationship to the model.

Adding attributions to the model, a hierarchical regression was then conducted to assess the extent to which contact, recognition and causal beliefs predict social distance, see Table 9. Contact and recognition were entered in step 1; frequency, closeness and nature of contact were added in step 2. Causal beliefs were added to the model in step 3, to examine whether more variance in the model was explained by these factors.

Table 9

Hierarchical Regression for Schizophrenia Vignette: Recognition, Contact and Causal Beliefs as Predictors of Social Distance.

Variable	*B* (95% CI)	*SE B*	β	*p*
Step1				
Constant	4.67 (4.47, 4.88)	0.11		< 0.001
Recognition	0.19 (0.02, 0.36)	0.09	.06	.03
Contact (binary)	-0.59 (-0.77, -0.41)	0.09	-.18	< .001
Step 2				
Constant	4.75 (4.55, 4.96)	0.11		< .001
Recognition	0.18 (0.00, 0.35)	0.09	.05	.05
Contact (binary)	-0.08 (-0.36, 0.21)	0.14	-.02	.60
Frequency	-0.01(-0.07, 0.06)	0.03	-.01	.78
Closeness	-0.09 (-0.13, -0.06)	0.02	-.21	< .001
Nature	-0.01 (-0.20, 0.18)	0.10	-.00	.90
Step 3				
Constant	4.65 (4.30, 5.00)	0.18		< .001
Recognition	0.14 (-0.05, 0.32)	0.09	.04	.14
Contact (binary)	-0.01(-0.29, 0.28)	0.15	-.00	.96
Frequency	-0.02 (-0.08, 0.05)	0.03	-.02	.60
Closeness	-0.08(-0.12, -0.05)	0.02	-.19	< .001
Nature	0.02 (-0.17, 0.21)	0.10	.01	.85
Biomedical	0.06 (0.00, 0.13)	0.03	.06	.05
Adversity	-0.16 (-0.23, -0.08)	0.04	-.14	< .001
Supernatural	0.53 (0.10, 0.97)	0.22	.08	.02
Environment	0.11(0.02, 0.20)	0.04	.09	.01

Note:
R^2= .038 for Step 1, ΔR^2= .025 (R^2= 0.064) for Step 2 ($p < .001$), ΔR^2= .017 (R^2=0.081) for Step 3 ($p < .001$)
Contact: 0 = no, 1 = yes; Frequency: 0 = no contact, to 6 = daily or almost daily contact; Closeness: 0 = no contact to 9 = extremely close; Nature: 0 = no contact or involuntary 1 = voluntary; Recognition: 0 = correct, 1 = incorrect.

Prior contact and recognition of schizophrenia were associated with less desire for social distance. The model explained more variance in social distance when the indicators of contact were included, however this was small and individually only closeness, not frequency or nature, predicted social distance and recognition was only just found to be significant at the 5% level at this step. Adding causal beliefs increased the variance explained by the model. Adversity, environmental and supernatural beliefs were individually significant predictors, whilst biomedical at p=.05 appeared somewhat less important in predicting social distance. Adversity beliefs about cause predict less desire for social distance whilst environmental and supernatural beliefs were associated with increased social distance. The overall model accounted for only 8.1% of the variance in social distance, much less than the 19.1% of variance explained by this model for the intellectual disability vignette.

Regression analyses demonstrated that a nuanced contact variable explained more of the variance in social distance than a binary variable, although only closeness of relationship was individually predictive. This was not the case for recognition where the binary variable was sufficient. To examine the relationships between contact, recognition, causal beliefs and social distance fully and assess whether a nuanced variable explained significantly more of the variance in the model, two structural equation models were compared. Figure 6 includes contact as a binary variable only, while Figure 7 includes contact as a nuanced variable, including frequency, closeness and nature of contact. The paths of the model were based on theory and the results of the regression analyses.

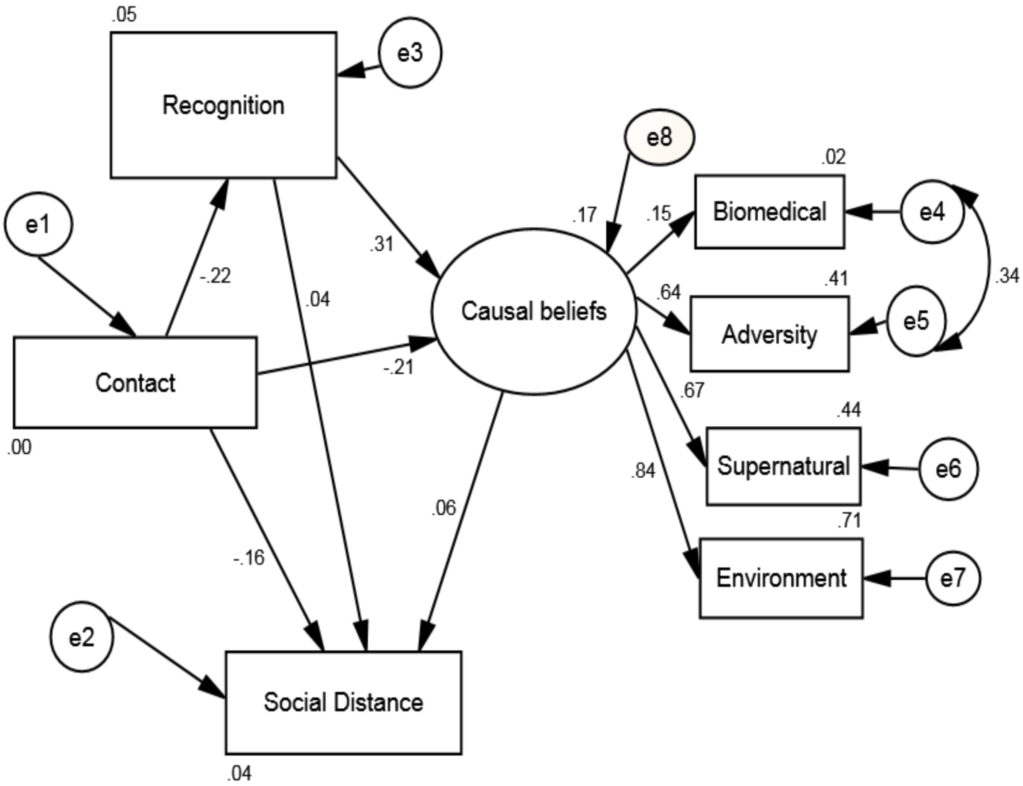

Figure 6. Structural Equation Modelling for Schizophrenia Vignette: Contact as a Binary Variable, Recognition, Social Distance and Causal Beliefs with Standardised Coefficients.

The assessment of normality indicated a multivariate kurtosis critical ratio of -4.75 therefore ML estimation methods were used. The hypothesised model appeared to be a poor fit for the data $\chi^2 = 204.28$ (df = 10), $p<0.001$; CFI = 0.89; TLI = 0.76; and RMSEA = 0.12. The pathways between recognition and social distance and between causal beliefs and social distance were not significant at the 5% level, though all other pathways were significant.

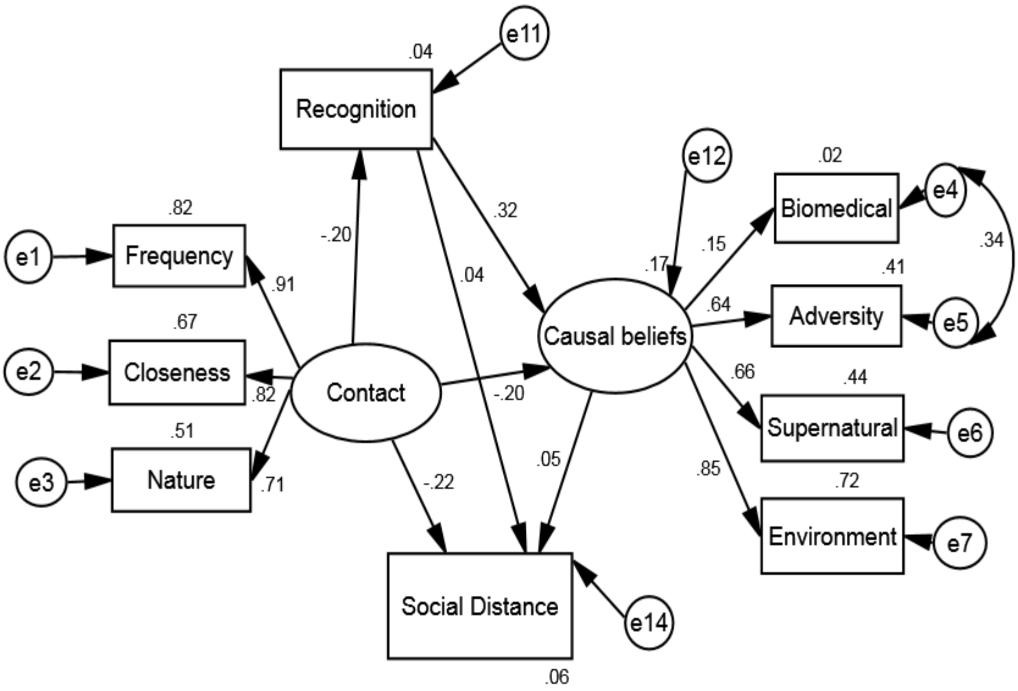

Figure 7. Structural Equation Modelling for Schizophrenia Vignette: Contact as a Nuanced Variable, Recognition, Social Distance and Causal Beliefs, with Standardised Coefficients

The assessment of normality indicated a multivariate kurtosis critical ratio of -.34 therefore ML estimation methods were used. The hypothesised model appeared to be an adequate fit for the data χ^2 = 246.01 (df = 22), $p<0.001$; CFI = 0.94; TLI = 0.90; and RMSEA = 0.09. The pathways between recognition and social distance and between causal beliefs and social distance were not significant at the 5% level, though all other pathways were significant.

The model with the nuanced variable appeared to be a better fit for the data, Δ CFI = 0.05 and a comparison of the chi-square values demonstrated this was significant, χ^2 = 41.73 (df = 12), $p < 0.001$; the model with the nuanced variable explained more of the variance.

Discussion

This study examined whether contact as a nuanced variable, including frequency, closeness and nature of the contact relationship is better at explaining social distance (stigma) and recognition (literacy) than a binary variable, that is contact as present or absent, for both intellectual disabilities and schizophrenia. Contact as a nuanced variable was found to explain a greater amount of variance in social distance for both the intellectual disabilities and schizophrenia vignettes, although only closeness, not frequency or nature, was individually predictive of social distance. The nuanced variable of contact was not better at explaining recognition than the binary variable for both intellectual disabilities and schizophrenia. When contact, causal beliefs, recognition and social distance were modelled, the nuanced contact variable provided a better model than the binary variable for the schizophrenia vignette but not for the intellectual disabilities vignette. The nuanced variable generally explained more of the variance in the relationships being modelled, compared to the binary variable.

Implications for Research

The results of the study provide partial support for concerns raised about stigma research that assesses contact as present or absent only (Couture & Penn, 2003), as this approach limits our understanding of the complexity of the role of contact. This study found little evidence for the intentional/unintentional distinction ('nature' in the current study) drawn by Alexander & Link (2003), but provides some support for their personal/impersonal continuum ('closeness' in this study). Perhaps surprisingly, the frequency of contact was not associated with reduced stigma or increased mental health or intellectual disability literacy, or at least not when the closeness and nature of the contact relationship were taken into account simultaneously. Whilst contact ‘per se’ as Pettigrew & Tropp (2006) suggest, is likely to have a positive effect on attitudes, this may be improved by optimal conditions including those suggested by intergroup contact theory (Allport, 1954). As this study was a retrospective examination of contact, whether or not contact met Allport’s optimal conditions could not be examined. This study does however provide evidence relating to two of Allport’s conditions; the findings support the importance of the intimacy of contact, whilst they raise questions about the importance of nature being volitional, which was accounted for in this study by the ‘nature’ variable and appeared to have little effect. These findings were consistent across both the intellectual disabilities and schizophrenia vignettes.

This study highlights variability among diagnoses in the effect of contact. In their meta-analysis, Pettigrew & Tropp (2006) found contact to have a greater effect on stigma towards people with intellectual disabilities in comparison to those with mental health problems. The current study found that more variance was explained by contact for intellectual disabilities in comparison to schizophrenia, suggesting that contact may have a greater impact for people with intellectual disabilities. Further research comparing mental health and intellectual disabilities stigma would be beneficial to examine differences in the effects of contact in greater detail.

Implications for Interventions

This study aimed to increase our understanding of contact and examine the implications for efforts aimed at reducing stigma. It has been widely acknowledged in the literature that contact is likely to be important in reducing stigma, but a surprising result of this study is that contact only explains a small amount of variance in the models. Both models indicate that closeness of the contact relationship is the important variable and that frequency and nature have little effect. Whilst this is important in considering future research into contact, it could also be seen to question the practicalities of using contact in anti-stigma campaigns. If contact has only a modest effect on stigma, it needs questioning whether it really is viable to make contact a cornerstone for anti-stigma work, given the challenges inherent in fostering close relationships between members of the general public and people with intellectual disabilities or mental health problems. Contact of any form was associated with increased recognition but whilst recognition had a direct main effect on social distance for intellectual disabilities, this was not the case for schizophrenia. This suggests that increasing lay people's understanding of the respective condition may be helpful in tackling intellectual disability stigma it may be less effective in relation to mental health stigma.

Causal beliefs as a latent factor did not affect social distance in the model for the schizophrenia vignette. This may be due to differences amongst the specific causal attribution scales. It was found that adversity attributions were associated with reduced desire for social distance for schizophrenia. For intellectual disabilities adversity, as well as biomedical causal beliefs, were associated with reduced social distance. Interestingly, endorsement of environmental causes for both intellectual disabilities and schizophrenia was associated with increased social distance. Targeting specific causal attributions, shown to be associated with reduced stigma in relation to the particular diagnosis, through education may be a more cost-effective method for anti-stigma campaigns. Education has been found to demonstrate significant but smaller changes in stigma in comparison to contact, with combined contact and education suggested to be the most effective anti-stigma intervention (Corrigan & Fong, 2014). It may be much more feasible to educate the public about the important role of adversity and hardship in the aetiology of intellectual disability and schizophrenia as a route to achieving reductions in stigma, than to foster close relationships with people affected by these conditions.

Limitations

One of the limitations of previous research into contact, highlighted by Alexander & Link (2003) was that much of the literature lacked a clear operational definition of contact. Whilst this study has improved on previous measurement of contact by considering various factors which make up such a ‘latent variable’, the measurement of contact does have some limitations. The questions used to measure contact in the study were not standardised and were fairly subjective. The study did not control for the number of people with intellectual disabilities/mental health problems known by the participants and instead asked them to respond in regards to only the person they felt closest to. The measures of the facets of contact were subjective - rating closeness for example, is very open to individual interpretation of what constitutes a ‘close’ relationship and may lead some people to consider a wide variety of factors including perhaps how much they ‘like’ the person in question. Reducing anxiety and increasing liking has been suggested as an effect of contact which could lead to a reduction in stigma (Pettigrew & Tropp, 2006), which could explain some of the impact of closeness on the data. It is recognised that there may be other ways of conceptualising the ‘nature’ of contact and this was controlled for to some degree by assessing the value of including the relationship categories, however the theory also indicated the ‘volitional’ aspect of contact was important. Future research would benefit from using and developing a standardised measure of contact, such as the Contact with Disabled Persons (CDP) scale (Yuker & Hurley, 1987) which would also enable greater comparisons to be made across different areas of stigma research.

The other important limitation in relation to the measurement of contact in this study, is that unlike the intellectual disabilities vignette where participants were asked directly about their contact with people with that diagnosis (learning disabilities), the schizophrenia vignette was followed by questions about contact with people with mental health problems. There are a number of limitations to this, especially given extensive evidence in the mental health literature that there are significant differences in the stigma associated with different diagnoses (e.g. Angermeyer & Dietrich, 2006; Angermeyer, Matschinger & Schomerus, 2013; Jorm & Oh, 2009). The current study does show however, that contact with people with any mental health problems may have a positive effect by reducing stigma and increasing literacy for schizophrenia.

The IDLS measure, although standardised with a high level of validity and reliability, does have limitations. The vignettes were unlabelled and as a consequence the responses to the question were based on participants' understanding of the primary difficulty represented by the vignette, rather than intellectual disabilities or schizophrenia per se. Whilst this allowed an assessment of literacy/recognition, if participants had been provided with labels for the vignettes, it is likely that this would have had an effect on the results. Providing a label has been found to reduce social distance and increase biomedical attributions for people with intellectual disabilities (Connolly, Williams & Scior, 2013) and also increase social distance for people with schizophrenia (Jorm & Oh, 2009). The use of a standardised questionnaire and some previously collected data also meant that no changes to the measure could be made. The measure is worded to suggest that people should answer the questions in relation to people 'like' the person described in the vignette, whereas participants may well respond to vignette measures as per the actual case described. Counterbalancing the presentation of the vignettes would have also increased validity through reducing any possible order affects. The intellectual disabilities vignette specifically related to a person with a mild intellectual disability. Previous research indicates that severity of intellectual disability is positively correlated with stigma (Oullette-Kuntz et al., 2010) and that contact may have the greatest influence in reducing stigma for people with moderate to severe disabilities, in comparison to education for reducing stigma towards people with mild intellectual disabilities (Antonak, Mulick, Kobe & Fiedler, 1995).

The use of data previously collected also meant that the process for the current recruitment needed to stay the same. The use of the internet to recruit participants is likely to have biased the sample. Indeed the demographics indicate that the sample was fairly young and well educated. However, this should be balanced against some of the benefits of conducting research online, where participants may feel more able to express views which are not socially desirable, the usual overrepresentation of females in psychological research is avoided and larger samples can be collected more readily (e.g. Gosling, Vasire, Srivastava & John, 2004).

Structural equation modelling was a sound method to build up an understanding of how the factors examined interact and was used here as a strictly confirmatory approach. The use of categorical variables in the model was not ideal and is likely to have had an effect on the interaction between the variables. The models could be developed with the output provided by AMOS, which suggests pathways which could improve the fit of the model. Whilst common, there is controversy over the use of structural equation modelling as an exploratory tool (Howell, 2011), especially given the increase in type 1 error. Given the limitations in previous research on the role of contact, there was little evidence for making adaptations as suggested by modification indices, with the exception being the covariance between biomedical and causal beliefs which was high and common to all four models. As stigma research develops, the models can be adapted to improve the fit. One surprising finding was that contact explained little variance in social distance, particularly for the schizophrenia vignette, indicating that there are other factors which may be important to consider in the development of our understanding of stigma and literacy. Possible factors not considered here, that have been shown to contribute to stigma, include emotional reactions (e.g. Angermeyer, Holzinger, & Matschinger, 2010; Pettigrew & Tropp, 2006), personality (e.g. Swami, Persaud & Furnham, 2011) and stereotypes (e.g. Corrigan & Watson, 2002).

Demographic characteristics of participants were also not included in the model. Whilst these were considered and are of obvious importance when studying social phenomena, this had to be balanced against increasing pathways and calculations in the model and increasing type 1 error. Examination of demographic factors in a comprehensive model looking beyond the affect of demographics on attitudes or stigma in isolation should be an area for future research.

Conclusions

This study has furthered our understanding of the role of contact in the areas of intellectual disabilities and schizophrenia. Research in the future should avoid looking at contact as a binary variable and consider a variety of factors, particularly the closeness of the contact relationship in assessing the likely effects of contact on stigma. Anti-stigma campaigns may not viably be able to improve prejudicial attitudes through the use of personal contact, if a close relationship is required.

Campaigns may benefit from paying close attention to causal attributions associated with lower stigma and focus on encouraging these through education.

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Part 3: Critical Appraisal

Introduction

This critical appraisal will focus on four main areas: a critique of the concepts and measures used in the study, an examination of web-based surveys, broader issues relevant to the study of stigma and future directions, and my personal reflections on the process of conducting a doctoral research project. These areas are discussed with the intention of supporting future research.

Critique of the Concepts and Measures

Literacy

Mental health literacy (Jorm, 2000) and intellectual disability literacy (Scior & Furnham, 2011) are defined as 'knowledge and beliefs about (mental) disorders which aid their recognition, management and prevention' (Jorm et al., 1997). Literacy, drawn originally from research in the area of physical diseases, is proposed to support a reduction in stigmatising attitudes through helping to overcome misconceptions (Jorm et al., 2006). However there is little evidence to support the notion that improved knowledge alone is associated with less stigma, even in the mental health field where this has been a much greater focus (Corrigan & Fong, 2014). Health inequalities for people with intellectual disabilities and mental health problems at an institutional level of stigma (e.g. Emerson & Baines, 2010) and evidence of negative attitudes of healthcare professionals (e.g. Wallace, 2010), where the expected level of knowledge/literacy is high, also raises questions about the relationship between knowledge and stigma.

The measure of literacy used in this study was the recognition of the condition in the unlabelled vignette, which in consideration of the definition presented above does raise some limitations, in not assessing the areas of management or prevention. Although there is crossover here with attributions, as described below, it is clear that the assessment did not encompass the whole definition. Whilst beliefs about treatment or management were assessed in the study using the Intellectual Disability Literacy Scale (Scior & Furnham, 2011), their covariance with causal beliefs presented a dilemma for analysis. As ‘literacy’ was not able to be modelled as a latent variable without a high number of indicator variables, which itself would void the analysis, a theoretical decision had to be made whether to focus on causal or treatment beliefs. The theory indicated causal attributions to be of greater hypothesised importance and as a consequence treatment beliefs were excluded from the analysis. Future research should consider how to develop the models to include and examine ‘literacy’ in greater detail.

The results indicated similar levels of recognition for schizophrenia and intellectual disability. Whilst recognition was associated with a reduction in social distance/stigma for intellectual disabilities, this was not the case for schizophrenia when all the variables, including attributions, were considered. This suggests that the importance of knowledge about a disorder, and its association with stigma, is likely to be diagnosis specific, something which should be an important consideration for anti-stigma campaigns.

Including recognition in the model meant that people who incorrectly identified the vignette answered the subsequent questions in terms of their explanation for the difficulties presented. This is a limitation given the emphasis in the study on the assessment of particular diagnoses or conditions. Recognition was hypothesised to be an important variable to consider given its emphasis in anti-stigma campaigns and therefore was included in the model despite the limitations. Previous research considering the effects of disclosure of diagnostic labels on stigma, using labelled and unlabelled vignettes, has found effects on social distance for both intellectual disabilities (Connolly, Williams & Scior, 2013) and schizophrenia (Jorm & Oh, 2009). This indicates that the results are likely to have differed with the use of labelled vignettes, something which could be considered in future research.

Attributions

Campaigns aimed at reducing stigma such as England's 'Time to Change', promote the professionally approved causal understanding of the conditions. The general professional consensus for both intellectual disabilities and schizophrenia is a biomedical causal understanding. It has generally been considered, in line with attribution theory (Weiner, 1985), that promoting a biomedical understanding will reduce attributions of personal responsibility/blame and therefore reduce stigma (Jorm et al., 1997). However, it has been found that promoting these ideas, in the mental health field, can lead to beliefs about poor prognosis (Corrigan & Fong, 2014) and emphasise difference (Link & Phelan, 2001). Particular concern has been raised in relation to the potential negative impact these attributions can have for stigma towards people with schizophrenia (Read, Haslam, Sayce & Davies, 2006).

This study measured causal beliefs on four distinct scales; biomedical, environment, adversity and supernatural. They are well evidenced as being distinct (but correlated) attributions in the measure (Scior & Furnham, 2011). The results demonstrated that biomedical attributions were associated with a reduction in stigma for intellectual disabilities, but this was not the case for schizophrenia. Adversity attributions were associated with reduced stigma for both. This scale includes the items: family arguments, financial stressors, traumatic accident, childhood abuse and recent bereavement, relating to psychosocial causes. The findings indicate that perhaps psychosocial explanations relating to adversity are best placed to reduce stigma. For schizophrenia, causal explanations emphasise the role of both biological and environmental factors (Gilmore, 2010) with experiences such as childhood abuse emphasised in the aetiology of the condition (e.g. Matheson, Shepherd, Pinchbeck, Laurens & Carr, 2013; Read, Van Os, Morrison & Ross, 2005). For intellectual disabilities, causal understanding is predominantly biogenetic (Gillberg & Soderstrom, 2003) but social factors such as poverty are associated with the condition (Emerson, 2007) and the interaction between genetic and psychosocial factors such as attachment problems has been emphasised (Taylor & Warner-Rogers, 2005). The findings from the current study demonstrate that adversity attributions should be a focus for anti-stigma campaigns where appropriate, given evidence about causality.

Stigma

Social distance is a self-report measure of behavioural intent to avoid a stigmatised person. The current study used ‘social distance’ as a measure of stigma. Whilst it is acknowledged that stigma is a multi-faceted concept, social distance has been found to be a reliably uni-dimensional component (Jorm & Oh, 2009), which enabled social distance to be modelled as an observed variable in the structural equation model. However, social distance’s association with personal contact, that is that people with lower social distance report more personal contact, has been used as a rationale for the validity of the measure (Jorm & Oh, 2009). This circular relationship is a limitation in the current study given that people with personal contact should be less likely to respond in a way which would indicate stigma. It also raises questions as to the direction of the relationship between contact and social distance. Social distance was a dependent variable in the current study, but it has been suggested that people who are less concerned about keeping stigmatised others at a distance are more likely to seek contact. To date there is little evidence for this

(Jorm & Oh, 2009), in part because the majority of the research in both the mental health and intellectual disability fields assessing stigma are measuring associations between variables only, through the use of cross-sectional research.

Another key issue is that, whilst social distance is the most commonly researched component of stigma, the relationship between self-reported behavioural intentions and actual discriminatory behaviour has not been tested (Jorm & Oh, 2009). One criticism of the scale is that the scenarios presented may be unlikely to occur and therefore may have little ecological validity for actual decision making. Many social psychology theories emphasise the link between behavioural intentions and actual behaviour (e.g. the Theory of Planned Behaviour, Ajzen, 1991) and whilst changing intentions have been found to have a consequential effect on behaviour, a medium to large change in intention has been found to have only a small to medium change in actual behaviour (Webb & Sheeran, 2006).

Ecologically and ethically valid measures of behaviour are difficult to design and implement in stigma research. As can be seen in the literature review, no measures of actual behaviour were used in any of the reviewed studies. This is a major limitation of the research given that the main priority of anti-stigma campaigns is to bring about the reduction of discriminatory behaviours or the increase in positive behaviours towards people who are stigmatised (Corrigan & Shapiro, 2010). Some efforts have been made in the literature to assess actual behaviour. A petition measure asking participants about changing laws to affect the allowance of homes for people with intellectual disabilities, in a study by Zsambok, Hammer and Rojahn (1999), was found to be more sensitive than a standard attitudinal measure to the variables of interest, including personal contact, and was also less influenced by extraneous variables. Whilst there is a need for improved methods to assess behaviour in the area of stigma research, social distance scales, although lacking somewhat in ecological validity, do have the benefit of allowing comparisons to be made across studies as a result of their common use. Future experimental research is required to ensure proper evaluation of the measures, assess the direction of variable relationships and their ecological validity.

Contact

The literature review highlighted the variability of the measurement of personal contact among studies in the intellectual disabilities literature, with many studies assessing contact as a dichotomy only. This is also a limitation in the mental health field. The empirical paper highlights that acknowledging other aspects of contact increases the explanatory power of the model, with closeness in particular being important. The method of examining contact in the current study relied on information about the 'closest' relationship and therefore the closeness, frequency and nature of other relationships were not considered. An important next step for research in this area will be to develop a standardised measure of contact, considering the variables which make up contact as well as different relationships. A scale such as the Contact with Disabled Persons (CDP) scale (Yuker & Hurley, 1987) which measures contact with a range of people with various disabilities should be considered for adaptation in future research.

Since this study focussed on personal contact, other types of contact such as video contact via media campaigns were not considered. Comparison of video and in vivo contact based anti-stigma interventions in mental health have found both to have significant effects, although the effect sizes for video, (d = .155) were significantly less ($p<.001$) than those for in vivo contact (d =.516; Corrigan, Morris, Michaels, Rafacz & Rusch 2012). Imagined contact has also had some promising results especially given its simplicity as an intervention (Crisp & Turner, 2009). Whilst it would not have been feasible for the current study to account for other methods of contact, these methods will be important to investigate in relation to intellectual disabilities and mental health stigma. Video and imagined contact may be more feasible methods of using contact in anti-stigma interventions and it would be interesting to examine whether these methods can be used to enhance ‘closeness’, perhaps (for example) through greater disclosure in the person’s story, thus increasing a sense of familiarity.

A major limitation of the current study is the lack of consideration of demographic information in the model to assess the effects of contact on literacy, attributions and stigma but also in considering who is more or less likely to have contact. There is evidence in mental health and intellectual disabilities stigma research that demographic variables are important in understanding attitudes and that these can have a mediating effect on interventions (e.g. Farina, 1998; Scior, Addai-Davis, Kenyon, & Sheridan, 2012). While acknowledging the importance of these variables, decisions about what to include in the analysis had to be made based on the strength of theory, acknowledging that inclusion of further variables would complicate the model and increase the likelihood of type 1 error. Further research should consider the impact of demographic variables in their mediating effects on stigma. It would also be interesting to examine what circumstances/characteristics are more or less likely to lead to someone having personal contact, in particular because this would inform the focus of contact interventions.

Web-Based Recruitment

The Use of the Internet

The internet is becoming a popular context for survey research, with some clear benefits over more traditional methods of postal and interviewer-administered surveys. The internet presents survey researchers with a method which lowers many of the costs associated with conducting a survey, as large populations can be reached inexpensively and rapidly. In the context of a DClinPsy project, internet methods in the current study enabled me to utilise my time efficiently. Recruiting online meant that I was able to advertise my study when I was not actually present, and to use technology to quickly handle any queries.

Internet research may present challenges, however, in terms of quality of data. Concerns about the use of web-based surveys include the lack of diversity in the sample, impact of the format of the web page on participants (e.g. who is attracted to completing the survey), effects of anonymity (e.g. multiple responses, lack of motivation from participants) and that the findings do not equate to those collected using other methods. However, these concerns have generally been found to not hold when compared to traditional survey methods (Gosling, Vasire, Srivastava & John, 2004). The literature indicates some cause for concern relating to anonymity of participants, given repeat respondents (Birnbaum, 2004). However, Gosling et al. (2004) note that limiting incentives such as personalised feedback at the end of the survey, reduce the probability of this. Anonymity online also affords some benefits, in particular for stigma research, where participants may feel much more able to express true opinions and beliefs, and it has been noted that internet research has lower social desirability bias (Skitka & Sargis, 2006).

Sampling Bias

The method of recruitment in the current study was to use social-networking sites, an e-mail to UCL students, as well as contacts of both my supervisor, her research team and I to ‘share’ the survey and hence access a larger pool of potential participants. Incentivised participation supported this being a realistic method of recruiting a large number of participants. Although these recruitment methods are likely to bias the sample demographics, these criticisms do also apply to an opportunistic sample collected without use of the internet. It has been suggested in the literature that there is inherent bias in recruiting via the internet and there are obvious limitations, for example, people will be automatically excluded if they are unable to access or use a computer or the internet. Though this is of concern, it should be noted that recent statistics indicate that 73% of adults in Great Britain access the internet every day (Office of National Statistics, 2013) and that this is an ever increasing trend. Whilst those people who do not access the internet are likely to differ compared to the sample, this is a limitation of other survey methods. When internet samples are compared to traditional samples they have been found to actually be more representative in relation to demographic variables (Gosling et al., 2004).

Broader Issues and Future Directions

Researching Stigma

Stigma research has distinguished between the stigmatised: people with lived experience who may internalise stereotypes and experience self-stigma, and the stigmatisers: people who endorse the public stigma of others, all occurring within a social world with structural stigma at the level of social institutions (Corrigan & Fong, 2013). Even though this study has focussed on public stigma towards people with intellectual disabilities and schizophrenia, the ‘stigmatisers’, it is important to consider the impact of stigma on the individual, the ‘stigmatised’. Indeed stigma research has been criticised for being conducted by people who themselves are not members of the stigmatised group, focussing on theories which ignore the lived experience of the social injustice and giving priority to the science (Link & Phelan, 2001; Corrigan & Fong, 2013). Alongside research focused on the stigmatisers, what is much needed, particularly in the intellectual disability field where it has been very limited, is research that focuses on the stigmatised, their experiences of stigma and contact, and particular aspects that have been important in their experience in reducing negative and increasing positive attitudes and behaviour towards them. There is a danger, by focussing on research at the level of the ‘stigmatisers’, of distancing those people who the research aims to benefit and ultimately appearing to ignore their experience. In the area of contact, this is of particular importance when considering that contact interventions aimed at reducing stigma require people with lived experience to believe and invest in them.

Retrospective and Prospective Contact

The current study used a retrospective self-report measure of contact, which means that effects cannot be inferred. Whilst contact was found to have a significant association with stigma for both intellectual disabilities and schizophrenia, the data indicated that the closeness of the relationship was of particular importance. Retrospective contact studies in the mental health field have been criticised for not controlling for factors which are thought to be important to optimise contact, for possible reporting biases and for being limited in only being able to infer association not causality (Couture & Penn, 2003). Studies of prospective contact interventions, which generally do not develop intimate/close relationships, have been found to have a good effect in improving attitudes and behavioural intentions towards people with mental health problems. However, data to date has been insufficient for examination of long term outcomes (Corrigan et al., 2012). It is also important to note the conceptual differences between retrospective and prospective contact studies. In a retrospective study the person's attitudes and the relationship with contact is considered in relation to their life experiences, unlike prospective contact where the person is a recipient of an intervention (Couture & Penn, 2003). Prospective contact interventions in the mental health field have been criticised for their contact situations generally lacking ecological validity and varying widely in methodology, making comparison difficult (Couture & Penn, 2003). As noted in the literature review, there are also very few prospective contact studies in intellectual disabilities research, giving us little understanding of the comparative results in this field. It is clear that further research needs to be conducted into the long term effects of contact interventions and to examine the relationship between retrospective and prospective contact studies.

Effects of Lived Experience

One aspect which has not been taken into consideration in this study concerns situations where the 'stigmatiser' may also be 'stigmatised', as individuals' lived experiences of the conditions were not investigated. Although the procedural aspects of the survey mean that it is unlikely that people with intellectual disabilities would have participated, it is very likely that approximately one in four people conducting the survey will have lived experience of mental health problems (HSCIC, 2009). The effects of contact with people with intellectual disabilities on attitudes towards people with mental health problems, and vice versa were also not examined. As was noted in the literature review, studies were excluded based on the fact that contact had been examined towards people with intellectual disabilities and/or mental health problems (e.g. Choi & Lam, 2001; Shwartz & Armony-Sivan, 2001), rather than specifically to the people towards whom attitudes were being gauged. This is an interesting premise, that contact with members of an out-group could have an impact on attitudes towards other groups of stigmatised individuals. Future research would benefit from analysing the effect of lived experience on attitudes towards others, in the context of contact.

Personal Reflections on the Research Process

A Disruption in the Process and Change of Research Project

At the end of the first year of the DClinPsy I left the course to go on maternity leave. This meant that I had chosen a research project, prepared an initial research proposal, and had recruited one NHS service to the proposed study. During maternity leave I produced a revised research proposal ready for my return to the course at the beginning of the second year. My initial research project relied on NHS services recruiting participants, conducting an adapted IDLS measure with parents of children with intellectual disabilities. On my return to the course other services were recruited to the study and an application for ethics was made. At this stage however, it became clear that the research was no longer a priority for the services involved. One service for example was going through a major restructure. The ethics committee also raised some substantial queries which meant that the project was no longer deemed feasible.

I therefore changed my project in my final term of the second year. Whilst it was extremely hard to give up my project and frustrating to have spent time on something which did not come to fruition, I did learn some important lessons about clinical research. The NHS and the priorities of services are changeable (sometimes fairly rapidly so) and the break in my research made this very evident. It is important to remain in contact with services on a regular basis and to ensure as a researcher that one is astute to any organisational changes. I think it is important to regularly assess each aspect of the research in relation to its importance in consideration of practicalities as well as the minimum requirements. This appears especially important in regards to completing research for a DClinPsy, which brings its own constraints given the requirements to be on placement and at university on particular days.

Conclusions

Stigma is a complex field to research with great importance. The study has provided interesting insights into the association between contact and stigma and it has highlighted areas for further development. This review, whilst highlighting the many methodological considerations and limitations, hopes to support future researchers in their quest to examine these concepts.

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Appendices

Appendix A: Critical Appraisal Checklist

Critical Appraisal Checklist from the Health Evidence Bulletin (2004)

Question	Yes	Can’t tell	No
1. Relevance Is the study relevant to the needs of the project?			
2. Focus Does the paper address a clearly focused issue? *In terms of:* • *The population studied?* • *(case-control study only) Is the case definition explicit and confirmed?* • *The outcomes considered?* • *Are the aims of the investigation clearly stated?*			
3. Method Is the choice of study method appropriate?			
4. Population Is the population studied appropriate? • *(Cross-sectional) Was the sample representative of its target population?* • *(Cohort) Was an appropriate control group used – i.e. were groups comparable on important confounding factors?* • *(Case-control) Were the controls randomly selected from the same population as the cases?*			
5. Bias Is confounding and bias considered? • *Have all possible explanations of the effects been considered?* • *(Cohort study) Were the assessors blind to the different groups?* • *(Cohort study) Could selective drop out explain the effect?* • *(Cross-sectional) Did the study achieve a good response rate?* • *(Cross-sectional) Were rigorous process used to develop the questions?* • *(Case control study) How comparable are the cases and controls with respect to potential confounding factors?* • *(Case control study) Were interventions and other exposures assessed in the same way for cases and controls?*			
6. Cohort study Was the follow up long enough? • *Could all likely effects have appeared in the time scale?* • *Could the effect be transitory?* • *Was follow up sufficiently complete?* • *Was dose response demonstrated?*			
7. Tables and Graphs Are the tables/graphs adequately labelled and understandable?			
8. Statistical Methods Are you confident with the authors’ choice and use of statistical methods, if employed?			

Appendix B: Summary Judgement

Summary Judgement, as used in the National Institute of Clinical Excellence (2009) Guidelines

Summary Judgment:	
++	All or most of the criteria have been fulfilled. Where they have not been fulfilled the conclusions are very unlikely to alter.
+	Some of the checklist criteria have been fulfilled, or not adequately described, the conclusions are unlikely to alter.
–	Few or no checklist criteria have been fulfilled and the conclusions are likely or very likely to alter.

Appendix C: The Community Living Attitude Scale – Intellectual Disability Version (CLAS-ID)

What is a Learning Disability?

A '**learning disability**' is an umbrella term for a condition in which someone has an impairment in their ability to think (intellectual functioning) and to cope on their own on a day-to-day basis (social functioning) and which has been identified as having an onset before adulthood (18 years old). Learning disability is referred to in certain countries as an intellectual disability. In the past the terms **'mental handicap'** and **'mental retardation'** have also been used to denote this condition. Some specific syndromes and conditions such as Down's syndrome, Fragile X and Autism **may** in some cases be associated with having a learning disability.

Learning disabilities are different from specific learning difficulties such as Dyslexia, which are not the focus of this study.

Please indicate the extent to which you agree with the following statements according to this scale:

1 = Disagree strongly
2 = Disagree moderately
3 = Disagree somewhat
4 = Agree somewhat
5 = Agree moderately
6 = Agree strongly

---

1. People with learning disabilities should not be allowed to marry and have children. 1 2 3 4 5 6
2. A person would be foolish to marry a person with learning disabilities. 1 2 3 4 5 6
3. People with learning disabilities can plan meetings and conferences without assistance from others. 1 2 3 4 5 6
4. People with learning disabilities can be trusted to handle money responsibly. 1 2 3 4 5 6
5. The opinions of a person with learning disabilities should carry more weight than those of family members and professionals in decisions affecting that person. 1 2 3 4 5 6
6. Sheltered workshops for people with learning disabilities are essential. 1 2 3 4 5 6
7. Increased spending on programs for people with learning disabilities is a waste of money. 1 2 3 4 5 6
8. Homes and services for people with learning disabilities downgrade the neighbourhoods they are in. 1 2 3 4 5 6
9. People who have learning disabilities are a burden on society. 1 2 3 4 5 6
10. Homes and services for people with learning disabilities should be kept out of residential neighbourhoods. 1 2 3 4 5 6
11. People with learning disabilities need someone to plan their activities for them. 1 2 3 4 5 6
12. People with learning disabilities do not need to make choices about the things they will do each day. 1 2 3 4 5 6
13. People with learning disabilities can be productive members of society. 1 2 3 4 5 6
14. People with learning disabilities have goals for their lives like other people. 1 2 3 4 5 6
15. People with learning disabilities can have close personal relationships just like everyone else. 1 2 3 4 5 6
16. People with learning disabilities should live in sheltered facilities because of the dangers of life in the community. 1 2 3 4 5 6
17. People with learning disabilities usually should be in group homes or other facilities where they can have the help and support of staff. 1 2 3 4 5 6
18. Parents should bear the main responsibility for children with learning disabilities. 1 2 3 4 5 6
19. Families should hide their relatives with learning disabilities rather than draw attention to the learning disability through using services. 1 2 3 4 5 6
20. Having a person with a learning disability in a family may damage the marriage prospects of siblings. 1 2 3 4 5 6

Appendix D: The Intellectual Disability Scale (IDLS)

Attitudes towards people experiencing difficulties

We would like to invite you to participate in this important research project, conducted by University College London. Before you decide whether you want to take part, it is important that you read the following information carefully. It is up to you to decide whether or not to take part. Please ask if there is anything that is not clear or you would like more information.

Purpose of the research

We are interested in finding out more about attitudes in the general population towards people with various types of difficulties. We are also interested in finding out whether there are any differences in such attitudes between people from different cultural backgrounds.

Completing this questionnaire will take you about 15 to 20 minutes. We are very interested in your honest views, not any 'right' or 'wrong' answers.

To thank you for taking part you will be entered into a Prize Draw – you will have a chance of winning one of two £50 Amazon vouchers (or a shop of your choice).

All data will be collected and stored in accordance with the Data Protection Act 1998.

Researcher: Rachel Blundell, Trainee Clinical Psychologist. Email: rachel.blundell.10@ucl.ac.uk
Supervisor: Dr Katrina Scior, Clinical, Educational & Health Psychology, University College London, London WC1E 6HJ; Email: k.scior@ucl.ac.uk, Tel: 0207-6791845
This study has been approved by the UCL Research Ethics Committee (Project ID Number: 0960/001)

This questionnaire is in three parts. The first part presents two case studies - we would like you to give your views of likely causes and responses. The second part is about a specific form of disability. The third part asks some information about you. Please respond to all items - if you are unsure of a response please make a best guess or leave the question blank.

James is 22 and lives at home with his parents and younger brother. He found school a struggle and left without any qualifications. He has had occasional casual jobs since. When his parents try to encourage him to make plans for his future, James has few ideas or expresses ambitions that are well out of his reach. Rather than having him at home doing nothing, his mum has been trying to teach James new skills, such as cooking a meal, but James has struggled to follow her instructions. He opened up a bank account with his parents' help, but has little idea of budgeting and, unless his parents stop him, will spend all his benefits on comics and DVDs as soon as he receives his money.

1. What would you say is going on with James?

2. How do you think James could best be helped?

3. Many people experience problems such as James'. Please indicate the extent to which you agree that the following are a likely reason for problems such as James' in *anyone,* using this scale:

1 = Disagree strongly
2 = Disagree moderately
3 = Disagree somewhat
4 = Unsure
5 = Agree somewhat
6 = Agree moderately
7 = Agree strongly

1. overly spoilt as a child	1	2	3	4	5	6	7
2. virus / other infection that affects the brain	1	2	3	4	5	6	7
3. lack of daytime occupation	1	2	3	4	5	6	7
4. possession by spirits	1	2	3	4	5	6	7
5. family arguments	1	2	3	4	5	6	7
6. financial worries	1	2	3	4	5	6	7
7. punishment for own past wrongdoings	1	2	3	4	5	6	7
8. strong religious or spiritual beliefs	1	2	3	4	5	6	7
9. genetic factors	1	2	3	4	5	6	7
10. suffering abuse as a child	1	2	3	4	5	6	7
11. recent traumatic incident such as traffic accident	1	2	3	4	5	6	7
12. punishment for parents' wrongdoings	1	2	3	4	5	6	7
13. very poor schooling	1	2	3	4	5	6	7
14. complications at time of birth	1	2	3	4	5	6	7
15. being from a single-parent family	1	2	3	4	5	6	7
16. parents too lenient	1	2	3	4	5	6	7
17. lack of an intimate relationship	1	2	3	4	5	6	7
18. brain abnormality	1	2	3	4	5	6	7
19. a test from God / Allah	1	2	3	4	5	6	7
20. recent death of relative or close friend	1	2	3	4	5	6	7
21. meningitis	1	2	3	4	5	6	7
22. isolation from extended family	1	2	3	4	5	6	7

4. Please indicate the extent to which you agree that the following are likely to be effective in helping someone like James overcome his difficulties, using this scale:

1 = Disagree strongly
2 = Disagree moderately
3 = Disagree somewhat
4 = Unsure
5 = Agree somewhat
6 = Agree moderately
7 = Agree strongly

1. get him to take more responsibility	1	2	3	4	5	6	7
2. turn to close family	1	2	3	4	5	6	7
3. visit his GP (General Practitioner)	1	2	3	4	5	6	7
4. get out more	1	2	3	4	5	6	7
5. pray	1	2	3	4	5	6	7
6. see a counsellor	1	2	3	4	5	6	7
7. see a psychiatrist	1	2	3	4	5	6	7
8. see a religious person / clergy	1	2	3	4	5	6	7
9. get a job	1	2	3	4	5	6	7
10. get a good talking to from his parents	1	2	3	4	5	6	7
11. see a social worker	1	2	3	4	5	6	7
12. more physical activity	1	2	3	4	5	6	7
13. psychological treatment	1	2	3	4	5	6	7
14. get careers advice	1	2	3	4	5	6	7
15. attend a place of worship more often	1	2	3	4	5	6	7
16. see a spiritual or faith healer	1	2	3	4	5	6	7
17. socialise more	1	2	3	4	5	6	7
18. take prescribed psychiatric medication	1	2	3	4	5	6	7
19. make him face up to reality	1	2	3	4	5	6	7
20. find a girlfriend/ wife	1	2	3	4	5	6	7
21. go on holiday	1	2	3	4	5	6	7
22. be more religious	1	2	3	4	5	6	7

5. Please indicate your agreement with the following statements, using the same scale:

I would be happy to move next door to someone like James	1	2	3	4	5	6	7
I would be happy to spend an evening socialising with someone like him	1	2	3	4	5	6	7
I would be happy to make friends with someone like him	1	2	3	4	5	6	7
I would be happy for someone like James to marry into my family	1	2	3	4	5	6	7

6. Have you ever had problems similar to James'? Yes / No

7. Has anyone in your family or close circle of friends ever had problems similar to James'? Yes / No

8. Have you ever had a job that involved providing services to a person with problems similar to James'? Yes / No

Adam is 24 and lives at home with his parents. He did fine at school, but has only had a few casual jobs since. Over recent months he has spent lots of time alone, locked in his bedroom and frequently refuses to eat with his parents or have a bath. He sometimes gets very agitated for little apparent reason and his parents have heard him talking loudly even when he's alone in his bedroom. At times they find his speech disorganised and hard to follow. When his parents encourage him to make plans for his future he says this is too dangerous. They are certain he is not taking drugs because he never sees anyone or goes anywhere.

1. What would you say is going on with Adam?

2. How do you think Adam could best be helped?

3. Please indicate the extent to which you agree that the following are a likely reason for problems such as Adam's in *anyone*, using this scale:

1 = Disagree strongly 2 = Disagree moderately 3 = Disagree somewhat	4 = Unsure	5 = Agree somewhat 6 = Agree moderately 7 = Agree strongly

1.	overly spoilt as a child	1	2	3	4	5	6	7
2.	virus / other infection that affects the brain	1	2	3	4	5	6	7
3.	lack of daytime occupation	1	2	3	4	5	6	7
4.	possession by spirits	1	2	3	4	5	6	7
5.	family arguments	1	2	3	4	5	6	7
6.	financial worries	1	2	3	4	5	6	7
7.	punishment for own past wrongdoings	1	2	3	4	5	6	7
8.	strong religious or spiritual beliefs	1	2	3	4	5	6	7
9.	genetic factors	1	2	3	4	5	6	7
10.	suffering abuse as a child	1	2	3	4	5	6	7
11.	recent traumatic incident such as traffic accident	1	2	3	4	5	6	7
12.	punishment for parents' wrongdoings	1	2	3	4	5	6	7
13.	very poor schooling	1	2	3	4	5	6	7
14.	complications at time of birth	1	2	3	4	5	6	7
15.	being from a single-parent family	1	2	3	4	5	6	7
16.	parents too lenient	1	2	3	4	5	6	7
17.	lack of an intimate relationship	1	2	3	4	5	6	7
18.	brain abnormality	1	2	3	4	5	6	7
19.	a test from God / Allah	1	2	3	4	5	6	7
20.	recent death of relative or close friend	1	2	3	4	5	6	7
21.	meningitis	1	2	3	4	5	6	7
22.	isolation from extended family	1	2	3	4	5	6	7

4. Please indicate the extent to which you agree that the following are likely to be effective in helping someone like Adam overcome their difficulties, using this scale:

1 = Disagree strongly	4 = Unsure	5 = Agree somewhat
2 = Disagree moderately		6 = Agree moderately
3 = Disagree somewhat		7 = Agree strongly

1. get him to take more responsibility	1	2	3	4	5	6	7
2. turn to close family	1	2	3	4	5	6	7
3. visit his GP (General Practitioner)	1	2	3	4	5	6	7
4. get out more	1	2	3	4	5	6	7
5. pray	1	2	3	4	5	6	7
6. see a counsellor	1	2	3	4	5	6	7
7. see a psychiatrist	1	2	3	4	5	6	7
8. see a religious person / clergy	1	2	3	4	5	6	7
9. get a job	1	2	3	4	5	6	7
10. get a good talking to from his parents	1	2	3	4	5	6	7
11. see a social worker	1	2	3	4	5	6	7
12. more physical activity	1	2	3	4	5	6	7
13. psychological treatment	1	2	3	4	5	6	7
14. get careers advice	1	2	3	4	5	6	7
15. attend a place of worship more often	1	2	3	4	5	6	7
16. see a spiritual or faith healer	1	2	3	4	5	6	7
17. socialise more	1	2	3	4	5	6	7
18. take prescribed psychiatric medication	1	2	3	4	5	6	7
19. make him face up to reality	1	2	3	4	5	6	7
20. find a girlfriend/ wife	1	2	3	4	5	6	7
21. go on holiday	1	2	3	4	5	6	7
22. be more religious	1	2	3	4	5	6	7

5. Please indicate your agreement with the following statements, using the same scale:

I would be happy to move next door to someone like Adam	1	2	3	4	5	6	7
I would be happy to spend an evening socialising with someone like him	1	2	3	4	5	6	7
I would be happy to make friends with someone like him	1	2	3	4	5	6	7
I would be happy for someone like Adam to marry into my family	1	2	3	4	5	6	7

6. Have you ever had problems similar to Adam's?	Yes / No
7. Has anyone in your family or close circle of friends ever had problems similar to Adam's?	Yes / No
8. Have you ever had a job that involved providing services to a person with problems similar to Adam's?	Yes / No

About you:

Male / Female	Age:	Occupation:
Ethnicity: White British ☐ White Other, please specify …………………………… Black British ☐ Black African Caribbean ☐ Black African ☐ Black Other ☐ Indian ☐ Pakistani ☐ Asian Other, please specify …………………………… Middle Eastern ☐ Other, please specify …………………………………		Education: (Please tick highest) Primary School ☐ to age 16 (e.g. GCSE) ☐ to age 18 (e.g. A Levels) ☐ University degree ☐ Post-graduate ☐
Country of birth: UK / Other (please specify …………………………….) If not born in UK, age of entry to UK …………… years		Do you have children? Yes / No
Religion: Christian ☐ Muslim ☐ Hindu ☐ Sikh ☐ Buddhist ☐ Non-religious ☐ Other (please specify ………………………….)		How important is your religion in guiding your life? (Please circle the corresponding point on the line) Of little importance Very important ←┼─┼─┼─┼─┼─┼─┼→
How often do you visit a place of worship? Never / At most twice a year / 3 to 6 times a year / Fairly regularly / At least once a week		
Do you known anyone who experiences mental health problems ? Yes / No Type of mental health problem ………………………………		If yes, in what capacity to you know them? (e.g. sibling, distant cousin, fellow pupil, colleague etc) ………………………………………………………
How often do you see this person? On average ……… times per month / year (please delete)		How close is this person to you? (Please circle the corresponding point on the line) Not at all close Extremely close ←┼─┼─┼─┼─┼─┼─┼→
Do you known anyone with learning disabilities? Yes / No		If yes, in what capacity to you know them? (e.g. sibling, other relative, fellow pupil, colleague etc) ………………………………………………………
How often do you see this person? On average ……… times per month / year (please delete)		How close is this person to you? (Please circle the corresponding point on the line) Not at all close Extremely close ←┼─┼─┼─┼─┼─┼─┼→

Appendix E: IDLS Scoring Guide

Intellectual Disability Literacy Scale (IDLS) - Scoring Guide

Scior, K. & Furnham, A.F. (2011)

Reference: Scior, K. & Furnham, A.F. (2011). Development and validation of the Intellectual Disability Literacy Scale for assessment of knowledge, beliefs and attitudes to intellectual disability, *Research in Developmental Disabilities, 32*, 1530–1541.

Subscales for final 22 item version. Each subscale score is a mean score of the items listed.

1. Causal Beliefs

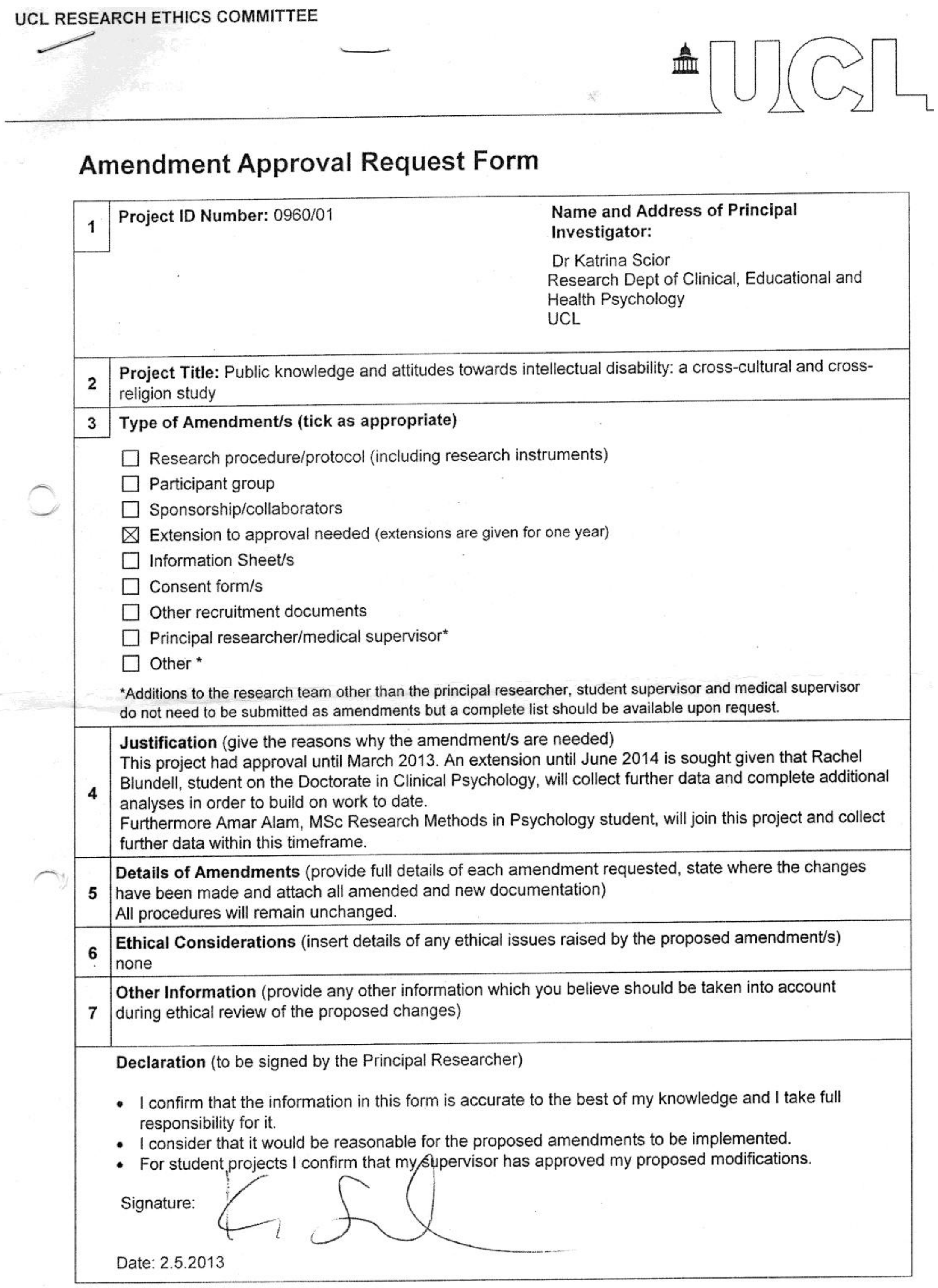
Factor 1 - Biomedical
5 items
2. virus / other infection that affects the brain
9. genetic factors
14. complications at time of birth
18. brain abnormality
21. meningitis

Factor 2 – Adversity
5 items
5. family arguments
6. financial worries
10. suffering abuse as a child
11. recent traumatic incident such as traffic accident
20. recent death of relative or close friend

Factor 3 - Environment
7 items
1. overly spoilt as a child
3. lack of daytime occupation
13. very poor schooling
15. being from a single-parent family
16. parents too lenient
17. lack of an intimate relationship
22. isolation from extended family

Factor 4 – Supernatural
5 items
4. possession by spirits
7. punishment for own past wrongdoings
8. strong religious or spiritual beliefs
12. punishment for parents' wrongdoings
19. a test from God / Allah

APPENDIX F: Ethical Approval



UCL RESEARCH ETHICS COMMITTEE

UCL

Amendment Approval Request Form

1	**Project ID Number:** 0960/01	**Name and Address of Principal Investigator:** Dr Katrina Scior Research Dept of Clinical, Educational and Health Psychology UCL
2	**Project Title:** Public knowledge and attitudes towards intellectual disability: a cross-cultural and cross-religion study	
3	**Type of Amendment/s (tick as appropriate)** ☐ Research procedure/protocol (including research instruments) ☐ Participant group ☐ Sponsorship/collaborators ☒ Extension to approval needed (extensions are given for one year) ☐ Information Sheet/s ☐ Consent form/s ☐ Other recruitment documents ☐ Principal researcher/medical supervisor* ☐ Other * *Additions to the research team other than the principal researcher, student supervisor and medical supervisor do not need to be submitted as amendments but a complete list should be available upon request.	
4	**Justification** (give the reasons why the amendment/s are needed) This project had approval until March 2013. An extension until June 2014 is sought given that Rachel Blundell, student on the Doctorate in Clinical Psychology, will collect further data and complete additional analyses in order to build on work to date. Furthermore Amar Alam, MSc Research Methods in Psychology student, will join this project and collect further data within this timeframe.	
5	**Details of Amendments** (provide full details of each amendment requested, state where the changes have been made and attach all amended and new documentation) All procedures will remain unchanged.	
6	**Ethical Considerations** (insert details of any ethical issues raised by the proposed amendment/s) none	
7	**Other Information** (provide any other information which you believe should be taken into account during ethical review of the proposed changes)	
	Declaration (to be signed by the Principal Researcher) • I confirm that the information in this form is accurate to the best of my knowledge and I take full responsibility for it. • I consider that it would be reasonable for the proposed amendments to be implemented. • For student projects I confirm that my supervisor has approved my proposed modifications. Signature: Date: 2.5.2013	

FOR OFFICE USE ONLY:

Amendments to the proposed protocol have been …approved… by the Research Ethics Committee.

Signature of the REC Chair, Professor John Foreman: ……………………………

Date: …5/6/2013…………