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Review article

Prejudice and schizophrenia: a review of the 'mental illness is an illness like any other' approach

Read J, Haslam N, Sayce L, Davies E. Prejudice and schizophrenia: a review of the 'mental illness is an illness like any other' approach.

Objective: Many anti-stigma programmes use the 'mental illness is an illness like any other' approach. This review evaluates the effectiveness of this approach in relation to schizophrenia.
Method: The academic literature was searched, via PsycINFO and MEDLINE, to identify peer-reviewed studies addressing whether public espousal of a biogenetic paradigm has increased over time, and whether biogenetic causal beliefs and diagnostic labelling are associated with less negative attitudes.
Results: The public, internationally, continues to prefer psychosocial to biogenetic explanations and treatments for schizophrenia. Biogenetic causal theories and diagnostic labelling as 'illness', are both positively related to perceptions of dangerousness and unpredictability, and to fear and desire for social distance.
Conclusion: An evidence-based approach to reducing discrimination would seek a range of alternatives to the 'mental illness is an illness like any other' approach, based on enhanced understanding, from multi-disciplinary research, of the causes of prejudice.

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Summations

- Biogenetic causal beliefs and diagnostic labelling by the public are positively related to prejudice, fear and desire for distance.
- Internationally, the public, including patients and carers, have been quite resilient to attempts to promulgate biogenetic causal beliefs, and continue to prefer psychosocial explanations and treatments.
- Destigmatization programmes may be more effective if they avoid decontextualized biogenetic explanations and terms like 'illness' and 'disease', and increase exposure to the targets of the discrimination and their own various causal explanations.

Considerations

- Only a small number of large studies have as yet examined the relationship between biogenetic causal beliefs and negative attitudes found by earlier, smaller studies.
- No simple solutions have been identified to overcome possible resistance, from those with vested interests, to a more evidence-based approach.
- More research is required into the relationship between attitudes and actual behaviour.

Introduction

Negative attitudes towards people with mental health problems are well documented (1–7). These attitudes lead to discrimination in many domains, including the workplace and housing, and to rejection by family and friends (6, 8–10). They can also lead, via anticipated and actual discrimination (11) and internalized stigma (12, 13), to decreased life satisfaction and self-esteem, and to increased alcohol use, depression and suicidality (7, 14–18). A recent *Acta Psychiatrica Scandinavica* editorial called on researchers not only to produce a 'more rigorous understanding of stigma and its various ways of harming people with mental illness' but also to conduct 'an objective evaluation of approaches meant to erase its impact' (19).

Aims of the study

The aim of the study, therefore, was to evaluate the effectiveness of the approach most frequently used to date in anti-discrimination programmes targeting schizophrenia.

Material and methods

The academic literature was searched, via PsycINFO and MEDLINE and recent review papers, to identify peer-reviewed studies that addressed the following three questions.

i) Has the 'mental illness is an illness like any other' approach, as intended, increased public acceptance of a biogenetic paradigm in terms of (a) belief in biological and genetic causes, (b) confidence in medical approaches to treatment, and (c) ability or willingness to recognize as 'mental illnesses', and apply diagnostic labels to, the behaviours that mental health professionals see as symptoms of psychiatric disorders?
ii) Is belief in biogenetic causation related to positive attitudes and reduced discrimination?
iii) Is the public's labelling of disturbed or disturbing behaviour as 'mental illness' related to positive attitudes and decreased discrimination?

The PsycINFO searches (updated at the time of resubmission of this paper, January 2006) covered the time period up to and including December 2005. A 'keyword' plus 'autoexplode' search strategy produced 1437 papers combining 'prejudice' or 'stigma' or 'stereotyped attitudes' (16 155) with 'mental disorders' (268 476) and 283 papers when the same three keywords were combined with 'schizophrenia' (62 578). Thus approximately one half of 1% of all studies of either mental disorders (0.54%) or schizophrenia (0.45%) deals with the subject of this review.

Corrigan (19) suggests that research in this area has 'exploded in the past decade'. Our analysis confirms that, although destigmatization efforts have been under way for over 50 years, it is only in the past few years that stigma, and efforts to combat it, have received serious attention from researchers. January 2000 to December 2005 (inclusive) accounts for 60.5% of relevant articles concerning 'mental disorders' and 68.2% of relevant articles concerning 'schizophrenia'. Despite this increased research activity, very few studies have evaluated the relative effectiveness of strategies that employ differing causal beliefs.

Results

To put the results of the review in context, we first briefly summarize the research relating specifically to prejudice towards people diagnosed with schizophrenia, and then describe the 'mental illness is an illness like any other' approach to combating this prejudice.

People diagnosed with schizophrenia are the target of some of the worst prejudice and discrimination (1, 20–25). Negative attitudes about schizophrenia are consistent over time and place, with dangerousness and unpredictability forming the core of a toxic stereotype (1, 22, 25–29). That the problem is pervasive is seen in negative attitudes even among some mental health staff (30–33). The effects of hostility are seen in the high relapse rates of patients living with criticism (34, 35). Even relatives encounter prejudice (36).

Attitudes do not seem to have improved over the 50 years they have been studied (37–39). Source evidence even suggests that they are deteriorating (6, 22, 40, 41). In the USA, the perception of dangerousness increased between 1950 and 1996 (24). The German public's desire for distance from people diagnosed as 'schizophrenic' increased between 1990 and 2001 (42).

Throughout this long period of stagnant or worsening prejudice, a core assumption of many anti-stigma programmes has been that the public should be taught to recognize the problems in question as disorders, illnesses or diseases, and to believe that they are caused primarily or exclusively by biological factors like chemical imbalance, brain disease and genetic heredity (10, 29, 43–45). The thinking behind this 'mental illness is an illness like any other' approach is that 'if the causes of mental disorders were attributed to factors outside the

individual's control, people's reactions to those with mental illness would be less negative' (42). A competing theory, which may have received insufficient attention in the planning of destigmatization programmes, is that an illness model may lead people to believe that the ill have no control over their behaviour and may thereby increase the already widespread fear of the unpredictable and dangerous 'schizophrenic' (25).

The term 'mental health literacy' has been coined to describe the degree of belief in biogenetic explanations and the ability or willingness to apply diagnoses (46). Destigmatization campaigns and research studies often equate 'knowledge' with espousal of an illness paradigm. A study (29) from the World Psychiatric Association schizophrenia campaign (32) portrays the belief that schizophrenia is a 'debilitating disease' as 'sophisticated' and 'knowledgeable'. Another study actually used 'mental illness is an illness like any other' as an item measuring a 'liberal, knowledgeable, benevolent, supportive orientation toward the mentally ill' (47). Another measured 'knowledge' with items like 'good mental health is the absence of brain disease' (48). A USA destigmatization programme taught children that mental illnesses are 'illnesses of the brain', testing them with items such as 'Mental illness is like other diseases because a person who has it has symptoms that a doctor can diagnose' (49). A recent Canadian study that asked participants to indicate whether the person in a 'schizophrenia vignette' was experiencing a 'crisis' or had an 'illness', described the latter response as 'correct recognition of the described person as being ill' (21). The South African public's belief in the social causes of schizophrenia and other mental health problems, and their rejection of medication, are characterized as 'misinformation' demonstrating the 'need to address ignorance' (50).

Question 1: Has public espousal of a biogenetic paradigm increased?

Causal beliefs. Table 1 summarizes 37 studies of causal beliefs about schizophrenia from 17 countries spanning over 50 years.

As early as 1961, the USA's Joint Commission on Mental Illness and Health had concluded:

> The principle of sameness as applied to the mentally sick versus the physically sick has become a cardinal tenet of mental health education… Psychiatry has tried diligently to make society see the mentally ill in its way and has railed at the public's antipathy or indifference (51).

A 1970 review confirmed that the USA public rejected the idea that 'mental illness is just like any other illness' (52). A 1987 USA study found that the most frequently cited causes of schizophrenia were: 'environmental stress' and 'major unpleasant emotional experiences', and that the public cited 'poor parenting, bad upbringing' more often than psychiatric professionals (45). A 1999 USA survey, however, found that although 91% cited 'stressful circumstances', 85% cited 'chemical imbalance' and 67% cited 'genetic or inherited' (22).

When Londoners were asked about schizophrenia, 'Overall subjects seemed to prefer environmental explanations referring to social stressors and family conflicts' (53). Another London study found that the most endorsed causal models were 'unusual or traumatic experiences or the failure to negotiate some critical stage of emotional development', and 'social, economic, and family pressures' (54). 'Subjects agreed that schizophrenic behaviour had some meaning and was neither random nor simply a symptom of an illness… It seems that lay people have not been converted to the medical view and prefer psychosocial explanations.'

A survey of over 2000 Australians found that the most likely cause of schizophrenia (94%) was 'day-to-day-problems such as stress, family arguments, difficulties at work or financial difficulties.' 'Problems from childhood such as being badly treated or abused, losing one or both parents when young or coming from a broken home' were rated as a likely cause by 88.5%. Only 59% endorsed 'inherited or genetic' (55).

In a survey of 2118 West Germans and 980 East Germans, the most cited cause of schizophrenia was 'psychosocial stress' (56). A recent survey of 1596 Japanese found that the most frequently cited cause was 'problems in interpersonal relationships' (57). Similarly, in a survey of South Africans (55% Afrikaans-speaking) 83% stated that schizophrenia was caused by 'psychosocial stress' (difficulties in work or family relationships, stressful life events) while only 42.5% thought it was a 'medical disorder' (brain disease, heredity, constitutional weakness) (50).

Beyond the USA, England, Australia, Germany, Japan and South Africa, the preference for psychosocial explanations over biogenetic causes for 'schizophrenia' has been found in Ireland (58), India (59), Turkey (60, 61), Malaysia (62), China (63, 64), Italy (65), Ethiopia (66), Greece (67, 68) Russia (20) and Mongolia (20). Thus the finding has been confirmed in 16 countries.

Although schizophrenia is seen as primarily psychosocial in origin, the degree to which biogenetic factors are cited is somewhat greater than

Table 1. Surveys assessing public preference for biogenetic (BIO) or psychosocial causal (PS) causal beliefs for schizophrenia

	Year	Country	Target stimulus	Sample	Preference for biogenetic vs. psychosocial – causal beliefs
Jones et al. (72)	1963	USA	Own 'illness'	Patients	PS
Alivistasos and Lykestos (68)	1964	Greece	Relative's 'illness'	Relatives	PS
Weinstein (74)	1974	USA	Own 'illness'	Patients	PS
Lefley (82)	1985	USA	Label	Clinicians who were relatives	BIO
McGill et al. (79)	1983	England	Relative's 'illness'	Relatives	PS
			Own 'illness'	Patients	PS
Wahl (45)	1987	USA	Label	Public	PS
Angermeyer and Klusmann (77)	1988	Germany	Own 'illness'	Patients	PS
Angermeyer et al. (78)	1988	Germany	Relative's 'illness'	Relatives	PS
Furnham and Rees (53)	1988	England	Label	Public	PS
Barry and Greene (58)	1992	Ireland	Vignette	Public	PS
Furnham and Bower (54)	1992	England	Label	Public	PS
Molvaer et al. (67)	1992	Greece	Own 'illness'	Patients	PS
Pistrang and Barker (73)	1992	England	Own 'illness'	Patients	PS
Angermeyer and Matschinger (56)	1994	Germany	Vignette	Public	PS
Karanci (60)	1995	Turkey	Relative's 'illness'	Relatives	PS
Angermeyer and Matschinger (81)	1996	Germany	Vignette	Relatives†	BIO
Razali* (62)	1996	Malaysia	Own 'illness'	Patients	PS
Whittle (83)	1996	England	Relative's 'illness'	Relatives	PS
			Own 'illness'	Patients	PS
			Patient's 'illness	Staff	PS
Jorm et al. (55)	1997	Australia	Vignette	Public	PS
Link et al. (22)	1999	USA	Vignette	Public	PS
Phillips et al. (64)	2000	China	Relative's 'illness'	Relatives	PS
Shibre et al.* (66)	2001	Ethiopia	Label	Relatives	PS
Srinivasan and Thara (59)	2001	India	Relative's 'illness'	Relatives	PS
Gaebel et al. (107)	2002	Germany	Label	Public	PS = BIO
Holzinger et al. (71)	2002	Germany	Own 'illness'	Patients	PS
Taskin et al. (61)	2003	Turkey	Label	Public	PS
Thompson et al. (28)	2002	Canada	Label	Public	BIO
Hugo et al. (50)	2003	South Africa	Vignette	Public	PS
Dietrich et al. (20)	2004	Russia	Vignette	Public	PS
		Mongolia	Vignette	Public	PS
Furnham and Chan (63)	2004	China	Label	Public	PS
		Britain	Label	Public	BIO
Magliano et al. (65)	2004	Italy	Label	Public	PS
Magliano et al. (80)	2004	Italy	Label	Relatives	PS
			Label	Nurses	BIO
			Label	Psychiatrists	BIO
Mcabe and Priebe (76)	2004	England	Own 'illness'	Patients	PS
Angermeyer and Matschinger (42)	2005	Germany	Vignette	Public	PS
van Dorn et al. (75)	2005	USA	Label	Patients	BIO
			Label	Relatives	BIO
			Label	Public	BIO
			Label	Clinicians	BIO
Jorm et al. (87)	2005	Australia	Vignette	Public	PS
Tanaka et al. (57)	2005	Japan	Vignette	Public	PS

*'Supernatural' preferred to both PS and BIO beliefs; † members of relatives' organizations.

for some other disorders such as depression, post traumatic stress disorder (PTSD) or alcohol dependence (22, 69).

Patients and relatives. The explanatory models of people who experience psychosis are varied and complex (70). Nevertheless, studies of the causal explanations held by people diagnosed with schizophrenia, spanning 40 years and a range of countries, have found strong psychosocial beliefs (67, 71–74). For example, a recent US study of four stakeholder groups concluded: 'Of the factors consistent with a non-biomedical view of mental illness, consumers, family members, and the general public consistently endorsed these as causes more frequently than did the clinicians' (75). Consumers were the most likely (66%), and clinicians the least likely (18%), to cite 'the way he was raised' as a cause. Clinicians were significantly more likely to endorse genetics than the other three groups, and consumers were less likely than clinicians to endorse chemical imbalance.

Furthermore (although the researchers, curiously, viewed this as a 'biomedical cause'), 'stressful circumstances' was cited more often by consumers and family members than by clinicians.

In East London, only 5% of a multiethnic group of people diagnosed as schizophrenic believed that the cause of their problems was a 'mental illness' and only 13% cited other 'biological' causes, whereas 43% cited 'social' causes such as interpersonal problems, stress and childhood events. The three ethnic minority groups (African-Caribbean, West African and Bangladeshi) were even less likely than their white counterparts to endorse biological causes and more likely to endorse social or 'supernatural' causes (76).

The causes espoused as 'likely/very likely' by Germans with psychoses were: 'recent psychosocial factors' – 88%, 'personality' – 71%, family – 64% and 'biology' – 31%. German people diagnosed 'schizophrenic' are particularly likely to identify family as a cause (77). The relatives of the people in this study also favoured psychosocial explanations (78). The researchers cite previous studies of relatives with similar findings (68, 79).

A recent Italian study of 709 relatives of people diagnosed as schizophrenic found that the most commonly endorsed causes were 'stress' and 'psychological traumas'. Only 21% endorsed 'heredity', compared with 74% of nurses and 75% of psychiatrists (80). In fact, 68% of these relatives stated that schizophrenia is caused entirely by psychosocial factors (65).

There are two exceptions to this pattern of findings. A German study found that relatives belonging to organizations for the families of 'schizophrenics' believed in brain disorder and heredity more strongly than psychosocial factors (81). The researchers attributed this anomalous finding partly to high exposure to psychiatric experts. This hypothesis is consistent with the fact that the other exception was of relatives who were also, themselves, mental health clinicians (82). Additional support comes from the finding that patients' and relatives' beliefs become slightly more biological after a first admission to hospital (83). The hypothesis is also consistent with a study of relatives in Turkey, where there are only 0.6 psychiatrists per 100 000 people (60), who cite stressful events (50%) and family conflicts (40%) more than biological/genetic factors (23%). Similarly, 55% of 254 Indian relatives cited social stressors, with 5% citing heredity and 14% brain disorder (59).

Further evidence of relatives' resistance to biogenetic beliefs comes from research into 'psychoeducation' programmes designed to teach the illness model. One study assessed relatives' retention of 'knowledge' about the 'illness' and found 'absolutely no change in the amount of knowledge between pretests and posttests' (84). Another found that before psycho-education only 11% of relatives believed that the problems were caused by a 'disordered brain' and only 32% believed this after the training. Belief in 'genetic inheritance' increased from 11% to 15%. Only 3% of the patients adopted an illness model before or after the programme (79). Furthermore, the 'knowledge' gained from another educational intervention designed to teach relatives the illness model failed to reduce their fear of the patient (85).

Changes in causal beliefs over time. There is evidence that some change is beginning to occur (38). The findings of a Canadian survey about causes of schizophrenia were: brain chemistry – 64%, genetics – 29%, stress – 12%, trauma – 6% (29). The researchers acknowledged, however, that their methodology differed from other studies in that they used just the word 'schizophrenia' rather than a vignette showing behaviours indicative of schizophrenia. A recent US study, also using the label 'schizophrenia' (on a sample of just 59) found chemical imbalance – 100%, genetic/inherited – 86%, stressful circumstances – 71%, and 'way he was raised' – 44% (75). A recent Australian survey, again using the diagnostic label rather than a descriptive vignette, found that 'social/environmental', 'stress and upbringing' and 'genetic' were all endorsed as moderately or very important by more than 60% of the sample (86). We shall discuss later the effects of diagnostic labels (vs. neutral descriptions) on both causal beliefs and prejudice.

Two studies have compared samples in the same country at two different times, using the same methodology. The first compared matched samples of Germans in 1990 and 2001 (42). Endorsement of 'brain disease' had increased from 51% to 70%, and 'heredity' from 41% to 60%. Endorsement of 'broken home' had fallen from 55% to 39%. Nevertheless, in both 1990 and 2001 the most commonly endorsed cause was 'life event'.

The second study, comparing 2031 Australians in 1995 with 1823 in 2003–2004, produced similar findings (87). The proportion citing 'inherited or genetic' as a 'very likely' or 'likely' cause of schizophrenia had increased from 59% to 70%. However, all four psychosocial causal beliefs easily exceeded 70% (in 1995 and 2003/2004): 'problems from childhood' (88% and 91%, respectively), 'day-to-day problems' (93% and 90%, respectively), 'death of someone close' (85% and 88%, respectively) and 'traumatic event' (85% and 87%, respectively).

These findings of some recent increase in biological causal beliefs suggest that the 'mental illness is an illness like any other approach' may be beginning to have a small effect in some 'Western' countries. As we have seen, however, this has not translated into improved attitudes over the same time period.

Children. Some schoolchildren can be taught to espouse an illness model, if it is presented as the 'science of mental illness' and agreement is measured in a school test administered by teachers (49). Before being taught that they were wrong, only one-third agreed that 'mental illness is like other diseases'. After the class, two-thirds ticked the response they had been taught to view as correct.

Attitudes towards treatment models. The public also prefers psychosocial solutions to medical interventions for schizophrenia. In Australia and Germany, psychotherapy is perceived as even more helpful for schizophrenia than for depression (55, 88). A 2005 review found eight studies confirming this finding that 'the particular liking of psychotherapy is more developed for schizophrenia than for depression', and only one exception (89). In Australia, the public are more likely than mental health staff to recommend a counsellor or help from friends (55). In Canada, over 90% endorse work/recreation opportunities and involvement of family/friends. Only 49% endorse drug treatment and 42% (18% of relatives) endorse psychiatric hospitals (29). Similar results have been found in Britain (54). The 2005 review cited 13 studies supporting their conclusion that 'very negative views prevail about pharmacological treatments' (89). The reasons Australians reject anti-psychotic drugs include: 'prescribed for the wrong reasons (e.g. to avoid talking about problems, to make people believe things are better than they are, as a straight jacket)' and 'lack efficacy because they do not deal with the roots of the problem' (44). The most preferred treatment for schizophrenia in Germany is psychotherapy for 65% of respondents, compared with psychotropic drugs – 15% and ECT – 1% (88). South Africans are twice as likely to recommend 'talk it over with someone' or 'go for psychotherapy' as 'medication' (50). When Austrians are asked what they would do if a relative became psychotic the most common response is 'talk to them' (44).

Recent studies suggest that in the USA (90) and Germany (91, 92) the rejection of psychiatric drugs is weakening. Between 1990 and 2001, the percentage of the German public recommending drug treatment increased from 31% to 57%. Over the same period, however, the percentage recommending psychotherapy increased from 68% to 83% (92). Furthermore, the USA study found that the majority would not take the drugs themselves.

Recognition of 'mental illness'. In 1955, few Americans recognized the symptoms of a range of disorders as 'mental illnesses' (93). By 1999, a study found that 88% identify schizophrenia symptoms, and 69% major depression symptoms, as 'mental illnesses' (22). However, even in the 1955 study, paranoid schizophrenia had been recognized as a 'mental illness' by 78% of the public. Most of the increased willingness to define the phenomena as 'mental illness' has occurred with diagnoses other than schizophrenia (24). The public remains more likely to identify schizophrenia symptoms as mental illness than symptoms of depression or other disorders (22, 38, 55, 94, 95). Nevertheless, a 2004 Italian study found that only 21% of the public identified an unlabelled vignette of a person exhibiting schizophrenic symptoms as 'schizophrenia' (65).

Question 2: Are biogenetic causal beliefs associated with less negative attitudes?

Table 2 summarizes 21 studies of the relationship between causal beliefs and attitudes. As long ago as 1970, Sarbin and Mancuso, having documented that the USA public tolerates more unusual behaviour than USA psychiatrists, found that the relatively rare occasions that the illness metaphor is adopted result in rejection of the person concerned (52). In 1975, Golding et al. also found that people espousing illness explanations are reluctant to befriend 'mental patients' (96). A Hong Kong study found that as 'knowledge' based on the mental illness perspective increased, attitudes became more negative (40).

By 1997, Mehta and Farina (97) reported numerous studies showing that 'the disease view engenders a less favourable estimation of the mentally disordered than the psychosocial view'. Their own study, addressing the largely neglected research question of whether attitudes and causal beliefs actually translate into behaviour, found that participants in a learning task increased electric shocks faster if they understood their partner's problems in disease terms than if they believed they were a result of childhood circumstances.

Two New Zealand studies found that young adults with biogenetic causal beliefs experience 'mental patients' as more dangerous and unpredictable than those with psychosocial causal beliefs, and are less likely to interact with them (28, 98). In a rare experimental comparison of the

Table 2. Studies finding significant relationships between biogenetic (BIO) or psychosocial (PS) causal beliefs and positive (+) or negative (–) attitudes

	Year	Country	Category	Causal belief	Attitude
Sarbin and Mancuso (52)	1970	USA	Mental illness	BIO	–
Langer and Abelson‡ (104)	1974	USA	Mental illness	BIO	–
Golding et al. (96)	1975	USA	Mental illness	BIO	–
Fisher and Farina* (15)	1979	USA	Mental illness	BIO	–
				PS	+
Morrison et al. (100)	1979	USA	Mental illness	PS	+
Morrison and Teta (101)	1979	USA	Mental illness	PS	+
Morrison and Teta (102)	1980	USA	Mental illness	PS	+
Morrison (136)	1980	USA	Mental illness	PS	+
Mehta and Farina (97)	1997	USA	Mental illness	BIO	–
Chou and Mack† (40)	1998	Hong Kong	Mental illness	BIO	–
Kent and Read‡ (105)	1998	New Zealand	Mental illness	BIO	–
Read & Law (98)	1999	New Zealand	Mental illness	BIO	–
				PS	+
Martin et al. (38)	2000	USA	Mental illness	BIO	+
				PS	+
Phelan et al.† (24)	2000	USA	Mental illness	BIO	–
Read and Harre (28)	2001	New Zealand	Mental illness	BIO	–
Haslam et al. (128)	2002	Australia	Mental illness	BIO	–
Walker and Read (99)	2002	New Zealand	Schizophrenia	BIO	–
Angermeyer and Matschinger (1)	2003		Schizophrenia	BIO	–
				PS	+
Dietrich et al. (20)	2004	West Germany	Schizophrenia	BIO	–
				PS§	+
		East Germany		BIO	–
		Russia		BIO	–
				PS§	+
		Mongolia		BIO	–
				PS	+
Magliano et al. (103)	2004	Italy	Schizophrenia	PS§	–
Angermeyer and Matschinger† (42)	2005	Germany	Schizophrenia	BIO	–

*Patients; †trend analysis over time period during which both biogenetic beliefs and negative attitudes increased; ‡staff; §only one of several psychosocial factors significantly related ('lack of parental affection' – Dietrich; 'disaffection in love' – Magliano).

effects of different causal beliefs, another New Zealand study found that a biogenetic explanation following a video of a person describing their psychotic experiences significantly increased perceptions of dangerousness and unpredictability. However, a video explaining the same experiences in terms of adverse life events led to a slight, but non-significant, improvement in attitudes (99). Four studies have found that challenging biological theories reduces social distance and stereotyping, among both adolescents (100) and young adults (98, 101, 102).

The first of two exceptions to this pattern is a study finding that 'stressful circumstances' and 'genetic transmission' are both related to reduced desire for distance (38). The second is an Italian study of the relationship between causal beliefs and the perception of unpredictability. Belief in heredity made no statistical difference, with 43% of those who thought schizophrenia was caused by 'heredity' believing 'schizophrenics' were unpredictable and 36% not. Predictors of perceived unpredictability included the belief that alcohol or drug abuse, or disillusionment in love were causes of schizophrenia (103).

The relationship between biogenetic causal beliefs and negative attitudes has also been found in staff and patients. Mental health professionals with a biological perspective perceive patients as more pathological (104), and are less inclined to involve patients in planning services (105). Psychosocial explanations induce, in clients, more efforts to influence their own situation than disease explanations (15).

In the USA, between 1950 and 1996, there was an increase in willingness to apply the 'mental illness' concept (especially to non-psychotic disorders), but over the same period perceptions that 'mentally ill' people are violent and frightening increased (24).

In recent German studies, involving 5025 interviews, a regression analysis found that both 'brain disease' and 'heredity' had no effect on anger, while fear was increased. If psychosocial stress was seen as the cause reactions were more favourable (1). Further analysis of the same data has confirmed relationships between specific biogenetic causal beliefs (particularly 'brain disease') and perceived dangerousness, fear and desire for social distance (106).

The same research team (20) have analysed interviews with 745 Russians and 950 Mongolians plus their original sample, which was comprised of West and East Germans. In a logistic regression analysis controlling for demographics, the belief that 'heredity' is a cause of schizophrenia was associated with greater desire for distance in all four samples. The belief that it is a 'brain disease' was associated with greater desire for distance in three of the four samples. In Mongolia, belief in three of the four psychosocial causes ('stress at work', 'broken home' and 'lack of parental affection', but not recent 'life event') were associated with reduced desire for distance. 'Lack of parental affection' was also found to be related to reduced desire for distance in Russia and West Germany.

A trend analysis of changes in causal beliefs and desire for distance over 11 years (42) found that 'Although the endorsement of biological causes increased substantially, the public's rejection of people with schizophrenia increased in the same period'. In both 1990 and 2001, biological causal beliefs were related to greater desire for distance.

Question 3: Is labelling behaviour as 'schizophrenia' or a 'mental illness' associated with less negative attitudes?

A review, in this journal, of studies up to 2004, found that in all studies using vignettes to investigate the public's causal beliefs (i.e. where no diagnostic label is employed) 'psychosocial factors, particularly psychosocial stress, are predominating in comparison with biological factors' (89). The same review also pointed out that in the relatively few studies that use the diagnostic label 'schizophrenia', rather than just describing behaviours indicative of schizophrenia, 'the situation is quite different, with biological factors being as frequently endorsed as a cause or even more frequently than psychosocial stress.' These studies confirm that labelling behaviours 'schizophrenic' does indeed, as hoped by those trying to increase 'mental health literacy', increase belief in biogenetic causes (29, 55, 75, 107, 108). However, this diagnostic labelling simultaneously increases perceived seriousness of the person's difficulties (109), lowers evaluations of the person's social skills (110) and produces more pessimistic views about recovery (108). It also leads to social distance and rejection (52, 94). For example, in a recent Swiss study members of the public who 'correctly' identified an unlabelled schizophrenia vignette as an illness were more likely to want to keep their distance from the person than those who believed it described someone experiencing a 'crisis', as were people who favoured medical treatments (21).

Awareness of the damage done by a diagnosis of 'schizophrenia' has even led to the suggestion that the diagnosis be kept more secret (32). Studies of how many psychiatrists always inform patients of a 'schizophrenia' diagnosis produce figures of 50% (111), 17% (compared with 85% for depression) (33) and 7% (112). Some commentators, however, still seem to think the problem is how lay people and non-psychiatric professionals use the term, rather than the connotations of the term itself (32, 33).

Birchwood et al. found that 'patients who accept their diagnosis report a lower perceived control over illness' and that depression in psychotic patients is 'linked to patients' perception of controllability of their illness and absorption of cultural stereotypes of mental illness' (14).

Angermeyer and Matschinger (1) asked the German public to label a vignette depicting schizophrenia, and found that the negative effects (increased fear) of defining the individual in the vignette as mentally ill 'outweigh the positive effects' (less anger). In the same sample of 5025 Germans, labelling the vignette as mental illness was related to increased perception of dangerousness. This was not replicated in Russia or Mongolia (113). In all three countries, however, labelling as mental illness increased the perception of dependency and the desire for social distance. In Russia there was a 'direct inverse relationship between labelling and the expression of the desire to help, leading to an increased desire for social distance' (113). This effect appears, therefore, to be cross-cultural. A public survey in rural Turkey found that 'Interpretation of schizophrenia as a mental illness leads to more negative attitudes and increases the desire for social distance (61). In another Turkish study people who labelled a schizophrenia vignette 'akil hastaligi' (disorder of the brain/reasoning capacities) were more likely than people who labelled it 'ruhsal hastagi' (disorder of the spiritual/inner world) to believe that 'schizophrenics' are aggressive and should not be free in the community (114).

In Germany, labelling as mental illness does not lead to an increase in preference for medication as a treatment for schizophrenia (88). Nevertheless, between 1993 and 2001 trust in professionals had increased. Meanwhile trust in non-professional 'confidants' and self-help groups had declined. In the 2001 sample trust in 'confidants' was lower in people who either labelled the schizophrenia vignette a 'mental illness' or who thought it was caused by 'brain disease' or 'heredity'. People espousing a social causal model were significantly more likely to select a 'confidant' as their first choice of treatment (88). A USA study has also found that

labelling schizophrenia as 'mental illness' increased desire for distance (38).

An exception to this pattern of findings linking diagnostic or illness labelling to negative attitudes is a study of 116 young adults. For schizophrenia and depression vignettes combined there was no difference in anticipated discomfort between diagnostic/medical language and behavioural description (23).

A recent study found that imagining interacting with a person in a photograph produced more physiological arousal when the person was labeled 'schizophrenic' than when they were not, and that this negative arousal predicted desire for social distance (115).

Over the past 50 years, during which time public education programmes had some success in increasing the public's willingness to label a range of problems as 'mental illnesses', the perception of dangerousness in people with mental illness increased and remains strongly linked to schizophrenia (22, 24).

Summary of findings on the three questions

i) The public's greater emphasis on psychosocial than biogenetic explanations of schizophrenia has been found in many countries, using various methodologies. Most patients and relatives share these views. Industrialized and non-industrialized societies have been resilient, for decades, to attempts to promote biogenetic explanations. Some recent studies suggest, however, that traditional views, about etiology and treatment, may be starting to weaken. The public's willingness to recognize, and name, unusual or problematic behaviours as 'mental illnesses' has increased somewhat over time, primarily for non-psychotic problems. The public has always been willing to accept 'medical model' terminology for schizophrenia, but not biological explanations or treatments.

ii) From 1970, studies in several industrialized countries have found that biogenetic causal beliefs are related to negative attitudes. This has been demonstrated among patients and professionals as well as general populations. Biogenetic beliefs are related to perceptions of dangerousness and unpredictability, to fear, and to desire for social distance. Experiments have found that biogenetic causal beliefs increase both negative stereotyping (dangerousness and unpredictability) and actual behaviour (harsh and punitive). These findings have now been confirmed by well-designed surveys in Germany, Russia and Mongolia, and by a German trend analysis of changes in causal beliefs and desire for social distance between 1990 and 2001. Schizophrenia, which is seen as more biologically based than other disorders, remains the target of particularly high levels of prejudice.

iii) Similarly, most early studies found that the public's labelling of disturbed or disturbing behaviour as 'mental illness', or with an actual diagnosis, worsens rather than improves prejudice and discrimination. This has also been confirmed by recent studies.

Discussion

How does the illness model produce negative attitudes?

In 1981, American causal belief researchers Hill and Bale (116) wrote:

> Not only has the attempt to have the public view deviant behaviour as symptomatic of illness failed, but the premise that such a view would increase public acceptance of persons engaging in such behavior seems to have been a dubious one to begin with. The notion that psychological problems are similar to physical ailments creates the image of some phenomenon over which afflicted individuals have no control and thereby renders their behavior apparently unpredictable. Such a viewpoint makes the 'mentally ill' seem just as alien to today's 'normal' populace as the witches seemed to fifteenth century Europeans.

So, was the well-intentioned assumption behind the 'mental illness is an illness like any other' approach, i.e. that reducing perceived responsibility and blame will improve attitudes because the person is seen as having no control, flawed from the outset? Using a film to reduce police prejudice towards schizophrenia did reduce blame but had no effect on perceptions of dangerousness or desired level of interaction (117). Similarly, Mehta and Farina (97), whose experiment found that disease explanations increased punitive behaviour, suggest that viewing distressed people as sick, while discouraging blame, produces a patronizing attitude in which 'They must be shown how to do things and where they have erred. Hence the harsher treatment.' They add that believing in biochemical aberrations renders them 'almost another species,' an explanation reminiscent of Hill and Bale's conclusion.

Of course many people live with great control over physical health conditions. Biological explanation need not mean actually having no control. But when the disease model is applied to the brain, the assumption is that the person is incapable of judgments, reason, autonomy – that their personhood is negated.

A study that explicitly examined the lack of control assumption within the 'mental illness is an illness like any other' approach used 5025 Germans to test the hypothesis 'that endorsing biogenetic causes increases the likelihood that people with schizophrenia and major depression will be considered as lacking in self-control, thus being unpredictable and dangerous, and, as a result, will experience social distance' (105). Using path analyses the hypothesis was confirmed, most strongly for schizophrenia. 'Brain disease' was even more closely associated with the idea of lack of self-control' than 'heredity'.

Any benefits gained by an illness model having replaced a moral model, such as bestowing the dignity of the sickness role and reducing blame, may no longer be operating. It seems that 'illness has lost much of its power to mitigate and excuse, so that 'sickos' are treated as if they were some strange minority or political sect' (118). We should remain cognizant that biogenetic explanations for mental health problems have been linked to many harsh policies, including compulsory sterilization and extermination (119–121).

Another factor may be a need to deny our own fear of 'going crazy' (25, 102) and to project our 'madness' onto others. Beliefs that create the impression of a categorically separate group, thereby denying the dimensionality of the problems (122–124), exaggerate differences between 'us' and 'them' and can fuel the reciprocal processes of distancing, fear, projection and scapegoating. When the suggested differences imply brain functioning so grossly abnormal that a person is denied responsibility for their actions, our fear is further fuelled by concerns that the person might lose control and become violent (25).

This belief in categories that are discrete, immutable and invariably rooted in a biological abnormality reflect the illness model's essentialist view of mental disorders as 'natural kinds' (125–127). Viewing mental disorders in this fashion has been found to be associated with prejudice along multiple pathways (128), just as the tendency to 'essentialize' other social categories is associated with the likelihood of endorsing social stereotypes (129). Seeing a mental health problem as immutable may promote pessimism and discourage efforts to engage constructively with the people concerned. Believing that a problem is rooted in a biological essence can promote the view that the disorder represents uncontrollable, untamed nature. Believing in discreteness can promote the view that people are categorically different from normality, rather than sharing in our common humanity.

Recent commentators on the latest research from Germany showing an increase in desire for distance from people diagnosed 'schizophrenic' (42) have added:

> Underlying all forms of discrimination, including psychiatric stigmatisation, is an exaggerated attribution of 'other-ness'.... The association of a biological marker with any stigmatized group acts as a signifier, further emphasising the group's distinctiveness. Previous attempts to elucidate biological markers in criminals and in certain ethnic groups have served only to etch this mistaken notion of fundamental difference a little deeper in the mind of the discriminator and, in doing so, to reinforce prejudice. We believe that the findings of Angermeyer & Matschinger may be partly explained through a similar effect following the promulgation of a biological theory of schizophrenia (130).

Alternatives to the 'mental illness' approach to combating prejudice are discussed below. It is worth noting here, however, that these commentators point out that 'Cognitive-behavioural therapists address this myth of difference... by emphasising the continuity of symptoms across the range from those designated as ''sick'' to ''normal'', offering the work of British psychiatrists Kingdon and Turkington (131) as a good example of this approach.

It is essential, however, to note that the problem with the illness model as applied to behavioural or emotional differences may not be that it focuses on differences *per se* but rather that it portrays those differences as negative. Rather than leading to acceptance of difference, this 'negative loading' encourages fear, prejudice and distance (132). In principle it should be possible to generate optimism about living with a condition – whether temporary or permanent – and to respect differences of experience.

Finally, believing that problematic behaviours should be explained, as an essentialist view implies, with reference to impersonal causal factors rather than to psychological or intentional ones may encourage a mechanistic rather than empathic view. Support for this possibility comes from a study which found that people giving impersonal, rather than intentional, explanations of antisocial personality disorder desired greater social distance (133).

What are the alternatives?

An evidence-based approach to combating prejudice clearly requires consideration of alternatives to promoting biogenetic causal theories. Should we promote psychosocial explanations instead? There

is strong evidence that viewing psychiatric symptoms as understandable psychological or emotional reactions to life events does reduce fear, distance and discrimination (28, 98–102, 134–136). The recent large German, Russian and Mongolian studies have confirmed this (1, 20).

Even commentators who continue to advocate for describing people as having a 'brain disease' (137) agree that 'research has shown that disease explanations for mental illness reduced blame but provoked harsher behaviour toward an individual with mental illness', that 'biological explanations may also imply that people with mental illness are fundamentally different or less human', that 'there is research evidence that biological arguments may actually strengthen dangerousness stereotypes' and that 'in contrast to biological arguments, psychosocial explanations of mental illness have been found to effectively improve images of people with mental illness and reduce fear'. Their explanation for continuing to recommend the brain disease stratagem is that omission of biogenetic explanations would be 'unethical.'

In resolving this difficult dilemma, however, we should remain equally vigilant about the ethics of continuing to ignore what the research tells us about what increases and what decreases prejudice and discrimination. Despite important differences in emphasis, there is a strong research consensus that biological, social and psychological factors all contribute to the actual etiology of schizophrenia (122, 138, 139). For example, a review of recent research concludes that 'Symptoms considered indicative of psychosis and schizophrenia, particularly hallucinations, are at least as strongly related to childhood abuse and neglect as many other mental health problems. Recent large-scale general population studies indicate the relationship is a causal one, with a dose-effect' (140). Many other psychosocial factors have also been found to contribute to the etiology of schizophrenia and psychosis (122, 139). Which etiological factors, if any, should be highlighted in anti-stigma programmes is a related, but different, question to the actual etiological contribution of various factors.

Perhaps it is not the focus on biological factors, *per se*, that is problematic, but rather the decontextualized way in which terms like 'brain disease' present these factors (141). They could be presented in conjunction with the fact that many biochemical or physiological differences can be caused by psychosocial factors, including the 'abnormalities' found in people diagnosed 'schizophrenic' (142). Ironically, this is well accepted in illnesses such as cardiovascular disease, hypertension, diabetes and lung cancer (141).

Our future efforts on behalf of, and with, those on the receiving end of the prejudice and discrimination, should try to acknowledge and minimize our sectarian professional interests. We may also need to be aware of the motivation of the funders of our efforts, especially, perhaps, in the case of the pharmaceutical industry (143–147). The president of the American Psychiatric Association recently warned that 'As we address these Big Pharma issues, we must examine the fact that as a profession, we have allowed the bio-psycho-social model to become the bio-bio-bio model' (148).

Beyond the issue of which, if any, causes to focus on, evidence-based programmes will also need to consider alternatives to diagnostic labelling (122, 149–151).

Perhaps anti-discrimination work in the mental health field has been overly focussed on causality, in ways that have not occurred in other areas. In challenging discrimination faced by people who use wheelchairs, the cause of their impairment is not relevant. What is relevant is their right to access social and economic life (6, 141, 152).

Many community-based efforts to reduce discrimination against people labelled mentally ill either do not adopt a medical paradigm or ignore causality altogether (6, 152–154). The principles on which these programmes are based include: promoting positive participation and contributions by people with mental health problems, understanding and addressing power differentials underlying discrimination, taking a multi-faceted approach, tackling stereotypes about violence (including efforts to contain the media in this area), lobbying for legislation changes to decrease discrimination, targeting different groups (gender, age, ethnicity, etc.) differently, targeting children (but not with attempts to promote a biogenetic perspective), acknowledging and valuing differences, and including the people on the receiving end of the discrimination in the design, management and provision of anti-stigma programmes (155). An additional principle to consider is that of not exporting any model to another country or culture without a great deal of thought (19, 76, 89, 134, 135, 155–157).

The chief of Public Psychiatry at the University of Chicago (19) reminds us, furthermore, that 'the seriously mentally ill are poor' and that:

> With poverty and unemployment come all the other social consequences of being underclass – vagrancy, panhandling, substance abuse, and crime. Yet, with appropriate resources for supported housing and job placement, the panhandling, dishevelled, homeless mentally ill person can become just another neighbour.

One principle with strong research support is that of increasing contact with the people who are the object of the discrimination (28, 89, 98, 154, 158). It seems unfortunate, therefore, that another goal of the illness model approach, that of increasing confidence in medical professionals and treatments, may have been achieved at the cost of reducing confidence in the helping capacities of ordinary members of the public (88), thereby potentially reducing precisely the sort of contact needed to combat prejudice.

Implications for future research

A research-based approach to the question of precisely how the illness model is related to desire for distance, via emotional reactions and stereotyped attitudes, is now possible using path analyses (106, 113). Future research and practice in this area will benefit from a multi-disciplinary approach. Indeed, the months leading up to the launch of The Royal College of Psychiatrists' anti-stigma campaign witnessed some far-reaching discussions of the origins of stigma, covering its psychological, economic, political and evolutionary functions (159, 160). Such broad understandings of the etiologies of prejudice seem essential to inform those designing practical programmes to combat discrimination. The involvement of economic and political scientists, for example, may shed light on why, in industrialized countries in general, particularly the USA, the individualizing and pathologizing of emotional distress has become increasingly popular over the last few decades – a period, paradoxically, when the psychosocial influences on a range of medical conditions, from heart disease to cancer, have become better understood (141).

Similarly, greater collaboration with researchers and practitioners in the broader 'disabilities movement' (7) may lead to a reduced focus on which of schizophrenia's many etiological factors should be promulgated and to increased attention, instead, on acceptance of human differences, increased contact between groups and the rights of everyone to full participation in social and economic life.

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