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ORIGINAL PAPER

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Public attitudes towards people with mental illness in six German cities

Results of a public survey under special consideration of schizophrenia

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Abstract *Objectives* Attitudes of the urban population in Germany towards people with mental illness were investigated in this study. The results are compared with those of attitude surveys conducted by other research centres participating in the World Psychiatric Association's (WPA) global anti-stigma-programme "Fighting Stigma and Discrimination because of Schizophrenia – Open the Doors" (WPA 1998). *Methods* A total of 7,246 German-speaking persons aged 16 and over were interviewed in private households in six German cities by telephone using a standardised questionnaire. The respondents were asked about their knowledge in regard to schizophrenia, their social distance towards people with schizophrenia and estimations of the social stigmatisation of mental patients in general. *Results* 33.1 % of the interviewees were able to name causes of schizophrenia. 76.5 % of the interviewees believe that people with schizophrenia often or very often need prescription drugs to control their symptoms. 81.1 % believe that most people would pass over the job application of a former mental patient in favour of another applicant. *Conclusions* Improvements in the education of the public about mental illnesses and provision of the opportunity for personal contact with mentally ill people are considered to be important measures for promoting the acceptance of the mentally ill by the public.

Key words stigma · public attitudes · mental illness · schizophrenia

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Introduction

Negative attitudes and rejecting behaviour of the public towards the mentally ill and people with schizophrenia in particular are some of the main obstacles to successful treatment. The most common consequences of discrimination for people with schizophrenia are social distance and exclusion as well as being disadvantaged with regard to housing and employment opportunities (cf. Crisp 2000, Link 2000, World Psychiatric Association 1998). The stigma of severe mental illness exacerbates the patient's burden due to his illness (Link et al. 1997, Sartorius 1998, Wiersma and van Busschbach 2001). Particularly in the case of schizophrenia, the burden of stigma often occurs with chronic social impairment (an der Heiden and Haefner 2001). The stereotype of the "unpredictable and dangerous lunatic" (Angermeyer 1995) is being reinforced in the public by one-sided or false representation in the media, e. g. the association of mental disorders with violence in sensationalised reports, which leads to fear and rejection of the mentally ill by the public (cf. Penn et al. 1999).

As a result of the stigma associated with mental illness, especially with schizophrenia, people suffering from mental illness often do not accept professional help until a very late stage. The fear that they will be labelled simply because they have received psychiatric treatment is too great (Link et al. 1989, 1997). Furthermore, the experience of stigma correlates with reduced self-esteem and reduced life satisfaction (Markowitz 1998, Wahl 1999, Dickerson et al. 2002). Stigmatisation and discrimination are directed both at the families and friends of people with mental illnesses and at members of the helping professions (Schulze 2000). Additionally, negative public attitudes against people who are mentally ill complicate the establishment of mental health services in the community (Rössler & Salize 1995). Stigmatisation of mentally ill people is also reflected in disadvantages in social legislation and health insurance practice (Haefner 2000).

The aim of the present survey is to examine knowledge about schizophrenia and attitudes towards persons suffering from schizophrenia in the German public. For this purpose a population survey was carried out in six German cities (Berlin, Bonn, Düsseldorf, Essen, Cologne and Munich) in spring 2001. The survey is part of a research project on "The reduction of stigma and discrimination of people with schizophrenia" conducted to educate the public and specific target-groups in the framework of a nationwide research project entitled "German Research Network on Schizophrenia" funded by the German Federal Ministry of Education and Research. The results of this study are to be used to plan and evaluate interventions performed to promote attitudinal and behavioural change in certain target-groups and to compare the attitudes found with those of the public in other countries carrying out the World Psychiatric Association's anti-stigma programme. For this purpose the obtained data will be compared with a Canadian survey from 1998/99 (Stuart & Arboleda-Florêz 2001) who applied the same questionnaires and interview methods, and a German survey (Angermeyer 1994, Angermeyer & Matschinger 1996) which provides data about stigmatisation of the mentally ill in Germany. In this framework the results of further surveys in which public attitudes towards people with mental disorders have been examined (Brockinton et al. 1993, Wolff et al. 1996, Brändli 1999, Link et al. 1999, Crisp et al. 2000, Lauber et al. 2000), cannot be adapted in detail.

The following topics relating to schizophrenia will be examined: information resources about schizophrenia in the media, knowledge about schizophrenia and social distance towards people with schizophrenia. Furthermore, social stigmatisation of former mental patients in general and recommendations to improve the acceptance of mental patients will be discussed.

Method

Study design

This paper presents the results of a pre-intervention survey serving as baseline for later surveys. The choice of cities in which the surveys were conducted was established in co-operation with other projects in the German Research Network on Schizophrenia which are performing surveys among patients on how they experience stigma and discrimination. The cities Düsseldorf and Munich are the experimental centres where the anti-stigma programme of the World Psychiatric Association is being implemented. An awareness programme is being carried out in the cities Cologne and Bonn, as an additional part of the German Research Network on Schizophrenia. The focus of the awareness programme lies on the early recognition of schizophrenia in the general public, whereas the interventions of the programme "Open the Doors" aim to reduce stigmatisation of people with schizophrenia in the public and in specific target groups. The effectiveness of both programmes is to be compared with the control centres Essen and Berlin. Following a 24-month intervention phase in the experimental centres, the interviews will be repeated under the same conditions with the same respondents.

Conduct of the study

A total of 7,246 German-speaking persons aged 16 and upwards who could be contacted by telephone were interviewed in private households in the cities Berlin, Bonn, Düsseldorf, Essen, Cologne and Munich. The computer-aided interviews each took an average of 15–20 minutes to complete and were carried out during the first 3 months of 2001 by a professional survey institute, commissioned by the study management. A structured questionnaire was employed. Twenty interviewers were supervised and introduced to the questionnaire and the conduction of the interview by the scientist in charge and a co-worker from the research site in Düsseldorf.

In order to ensure that the sample was random and representative, the following procedure ("Next Birthday Method") was employed (Häder 1994). Lists of candidates were drawn up for each of the six cities consisting of each hundredth entry in the respective local telephone directories. Each telephone number on this list of candidates was dialled, up to 5 times if there was no reply. As soon as the telephone was answered the person whose birthday was next was asked to come to the telephone. The telephone interview was then conducted with this randomly selected private individual, who will be the informer for both survey time points (in 2001 and 2003).

The numbers of households dialled and response rates in each city are shown in Table 1. The number of contacts vary due to the goal of an average of 1,175 completed interviews. The total response rate of 75.4 % has proved satisfactory.

In Table 2, the demographics (age, sex) of the survey respondents are compared with those of their corresponding city populations

Table 1 Distribution of the numbers of households dialled and response rates of the telephone interviews in six German cities

	Number of contacts		Percentages			
	households: dialled[a]	households: completed	response rate	not contacted	refusals	drop-outs[b]
Berlin	1,692	1,215	71.8	9.1	12.9	6.2
Bonn	1,432	1,163	81.2	7.2	7.4	4.2
Düsseldorf	1,555	1,187	76.3	8.1	10.9	4.7
Essen	1,580	1,174	74.3	8.5	13.3	3.9
Cologne	1,503	1,129	75.1	7.8	11.5	5.6
Munich	1,729	1,278	73.9	6.4	13.6	6.1
Total:	9,491	7,246	75.4	7.9	11.6	5.1

[a] basis for the survey
[b] agreement to the interview but refusal during the interview

Table 2 Sample characteristics

	Berlin				Bonn				Düsseldorf			
	respondents		corresponding city population[a]		respondents		corresponding city population[a]		respondents		corresponding city population[a]	
	n	%	n	%	n	%	n	%	n	%	n	%
Age Group												
16–30	299	24.6	643812	25.0	311	26.7	55154	25.0	268	22.6	97210	22.8
31–45	430	35.4	887269	34.4	425	36.5	81412	37.0	448	37.7	147849	34.7
46–60	291	24.0	687222	26.6	242	20.8	53608	24.3	243	20.5	112005	26.3
> 60	195	16.0	360656	14.0	185	15.9	30127	13.7	228	19.2	68782	16.2
	$\chi^2 = 7.27$, df = 3, p = 0.064				$\chi^2 = 11.45$, df = 3, p = 0.010				$\chi^2 = 25.15$, df = 3, p < 0.001			
Sex												
Female	614	50.5	1279629	49.6	587	50.5	112219	50.9	659	55.5	217207	51.0
Male	601	49.5	1299330	50.4	576	49.5	108082	49.1	528	44.5	208639	49.0
	$\chi^2 = 0.43$, df = 1, p = 0.515				$\chi^2 = 0.08$, df = 1, p = 0.771				$\chi^2 = 9.696$, df = 1, p = 0.002			
	Essen				Cologne				Munich			
	respondents		corresponding city population[a]		respondents		corresponding city population[a]		respondents		corresponding city population[a]	
	n	%	n	%	n	%	n	%	n	%	n	%
Age Group												
16–30	277	23.6	95823	22.4	313	25.5	177838	24.7	312	24.4	228646	24.8
31–45	450	38.3	139673	32.6	453	36.9	253900	35.3	511	40.0	311762	33.8
46–60	250	21.3	117632	27.5	251	20.4	181131	25.2	278	21.8	250069	27.1
> 60	197	16.8	74944	17.5	212	17.2	106296	14.8	177	13.8	130596	14.2
	$\chi^2 = 29.36$, df = 3, p < 0.001				$\chi^2 = 17.25$, df = 3, p = 0.001				$\chi^2 = 28.59$, df = 3, p < 0.001			
Sex												
Female	614	52.3	215310	50.3	630	51.3	360723	50.2	625	48.9	464411	50.4
Male	560	47.7	212762	49.7	599	48.7	358442	49.8	653	51.1	456662	49.6
	$\chi^2 = 1.88$, df = 1, p = 0.171				$\chi^2 = 0.55$, df = 1, p = 0.457				$\chi^2 = 1.14$, df = 1, p = 0.285			

[a] Data information provided by the Regional Offices for Data Processing and Statistics in North Rhine-Westphalia, Berlin and Bavaria on the basis of the city populations at December 31, 2000

(source: the Regional Offices for Data Processing and Statistics in North Rhine-Westphalia, Berlin and Bavaria). Apart from Düsseldorf the sex distributions of the respondents did not differ from those of the city populations. Significant differences were found with respect to age. Due to a higher refusal rate during the interview's initial phase in the group of 46–60 years, the proportion of survey respondents in this age group was lower than in the city populations. Thus, all items will be analysed with respect to age and gender effects.

Measures

The questionnaire was compiled from the questionnaire used in a study by the Canadian project partners in the WPA's anti-stigma programme (Stuart and Arboleda-Flôrez 2001) and the German translation of Link's Discrimination-Devaluation Scale (Link et al. 1989, German translation Matschinger & Angermeyer 1991). The questionnaire employed in the Canadian study was adopted as a whole, following translation and back-translation from English to German by a professional translation bureau. This was carried out in order to ensure comparability with the Canadian study and other studies of the Global Anti-Stigma Programme planned for the future.

Information on schizophrenia obtained through the media

In order to establish to what extent the respondents were cognisant of reports on schizophrenia in the media, they were asked whether they had obtained information about schizophrenia from the media during the last six months, and if so, from which media source (open question). A second open question concerned the kind of description of people with schizophrenia in the news.

Knowledge about schizophrenia

The section on "knowledge" includes open questions on the prevalence rate and causes of schizophrenia. Ten items on symptoms of, behaviour of, and treatment options for people with schizophrenia were rated on a four-point scale (1–never, 2–rarely, 3–often, 4–frequently), e. g. whether people with schizophrenia hear voices that tell them what to do or whether people with schizophrenia can work in regular jobs.

Social distance

The respondents' social distance towards people with schizophrenia was measured with a modified six-item version of the Bogardus (1925) social distance scale for rating stigmatising attitudes towards cultural minorities (Stuart and Arboleda-Flôrez 2001). Six questions were rated on a four-point scale (1–definitely not, 2–probably not, 3–probably and 4–definitely). In addition, a question regarding the acceptance of a group home for schizophrenia patients in their neighbourhood (supporting – indifferent – worrying about – opposing) was asked. Those who answered "opposing" were asked whether they would try to prevent people with schizophrenia from moving into their neighbourhood.

Social stigmatisation

The perception of social stigmatisation of psychiatric patients by the public was assessed with Link's Discrimination-Devaluation Scale (Link et al. 1989, German translation Matschinger & Angermeyer 1991). The five-point scale (1–strongly disagree to 5–strongly agree) originally comprises 12 items and includes statements on the perceived social acceptance of psychiatric patients such as "Most people

believe that a former mental patient is just as trustworthy as the average citizen". It also includes statements on social stigmatisation and discrimination of former mental patients such as, for example, "Most people think less of a person who has been resident in a mental hospital". A gender-specific item "Most young women would be reluctant to date a man who has been hospitalised for a serious mental disorder" was added to complement the item "Most young men would be reluctant to date a woman who has been hospitalised for a serious mental disorder" taken from the original questionnaire.

Recommendations for measures to improve the acceptance of mentally ill people in society

The interviewees were asked if they considered interventions to improve the acceptance of the mentally ill in society to be important. If the interviewees believed this to be the case, they were asked for their opinion regarding 5 further statements about possible interventions to achieve more acceptance of the mentally ill (rated 1–completely unimportant, 2–rather unimportant, 3–important, 4–very important), such as "more education and information on mental illness" or "more opportunities for contact with the mentally ill". If an interviewee stated education and information on mental illness as important, he was also asked at whom he believed this education should be directed (open question).

Data analysis

The analysis is based on a total of N = 7,246 respondents. For scales and questions with defined rating categories, the relative frequencies were calculated in relation to sex and age. Chi-square-tests, t-tests and ANOVAs were employed to test sex- and age-related differences for significance. Relative frequencies of the most common answers are described for all open questions.

Results

Information about schizophrenia in the media

In answer to the question about sources of information on schizophrenia 15 % (N = 1,086; female: 16.5 %; male: 13.4 %; chi-square-value$_{df=1}$: 14.145; $p \leq 0.001$; age: n. s.) of the interviewees stated that they had learned something about schizophrenia from the media during the last six months. Of these 15 %, 30.2 % had seen something on television, 23.7 % had read descriptions in magazines, news magazines and in scientific journals, and 18.8 % in newspapers (resulting from adding 9 % in local daily newspapers, 3.4 % in supra-regional daily newspapers, 2.1 % in tabloids and 4.6 % in other daily newspapers – the difference between the sum 19.1 % and the value of 18.8 % is due to possible multiple answers).

A total of 6.3 % (N = 454; sex: n. s.; age: 16–30 yrs. 4.9 %; 31–45 yrs. 5.5 %; 46–60 yrs. 8.6 %; 61 + yrs. 6.9 %; chi-square-value$_{df=3}$: 23.243; $p \leq 0.001$) of all interviewees had heard something about the illness on the news (daily news bulletins on the radio or television). 47.4 % of these 6.3 % could not remember the content, and 22.2 % recalled descriptions of schizophrenic people in the news as violent, being a danger to others or having committed a crime. 15 % recalled descriptions about symptoms such as hearing voices or talking to oneself. Multiple answers were allowed.

Knowledge about schizophrenia

Prevalence rate of schizophrenia: 75.3 % of the interviewees gave a prevalence rate of over 1 %, 13 % one of less than 1 % and 11.7 % one of 1 %. The mean prevalence rate was 5.6 % (stddev = 7.61; female: 6.4 %; male: 4.7 %, t-test $T_{df=7244}$: 9.476; $p \leq 0.001$; age: ANOVA n. s.).

Causes of schizophrenia: 33.1 % (N = 2,396; female: 36.1 %; male: 29.8 %; chi-square-value$_{df=1}$: 32.414; $p \leq 0.001$; age: n. s.) of the respondents said they knew causes of schizophrenia. Herein, the most frequently named causes were psychosocial factors such as traumatic experiences, upbringing or stress (49.2 %) and biological or genetic factors (47.3 %). The idea of schizophrenia as a "brain disease" ranked third (20.6 %). Multiple answers were allowed.

Knowledge and beliefs about symptoms, behaviour and treatment options: In Table 3, the relative frequencies of agreement (often or very often) are shown for the 10 items on knowledge and beliefs about symptoms, behaviour and treatment options. Furthermore, the relative frequencies due to sex and age are shown for each

Table 3 Knowledge and beliefs about symptoms, behaviour and treatment options (N = 7246)

Agreement to "People with schizophrenia often or very often …"	total	sex			age (years)				
	%	female %	male %	p	16–30 %	31–45 %	46–60 %	> 61 %	p
1 – suffer from split or multiple personalities	79.6	80.7	78.4	0.013	77.0	82.4	80.2	76.3	< 0.001
2 – need prescription drugs to control their symptoms	76.5	79.8	72.9	< 0.001	71.6	75.5	79.5	81.9	< 0.001
3 – can be successfully treated outside of hospital in the community	68.1	67.6	68.7	0.320	72.0	70.4	65.6	60.5	< 0.001
4 – hear voices that tell them what to do	55.9	60.0	51.6	< 0.001	53.3	57.7	57.8	53.4	0.003
5 – can work in regular jobs	51.9	48.1	56.1	< 0.001	55.2	58.5	47.1	38.4	< 0.001
6 – can be seen talking to themselves or shouting in city streets	48.0	48.8	47.1	0.149	49.8	45.8	49.5	48.2	0.031
7 – can be successfully treated without drugs using psychotherapy	45.0	41.4	48.8	< 0.001	54.3	44.8	38.6	39.8	< 0.001
8 – are dangerous to the public because of violent behaviour	18.2	18.4	18.0	0.638	16.1	15.3	18.7	27.1	< 0.001
9 – are a public nuisance due to begging or odd behaviour	12.9	12.9	13.0	0.904	10.7	11.0	15.2	17.8	< 0.001
10 – tend to be mentally retarded or of lower intelligence	10.0	9.7	10.4	0.342	7.8	7.3	12.2	16.9	< 0.001

item. Chi-square-tests for sex and for age were computed item-wise. More women than men believe that people with schizophrenia suffer from symptoms such as hearing voices and split personalities and that they need prescription drugs to control the symptoms of the disorder.

Concerning age, the following trends can be stated: more older than younger people associate people with schizophrenia with negative characteristics and behaviour (items 8, 9, and 10). They are more pessimistic about treatment options (item 3) and prefer medical treatment options (item 2) instead of being successfully treated without drugs and with psychotherapy only (item 7).

Social distance

Social distance questionnaire: In Table 4 the relative frequencies of agreement (probably or definitely) are shown for the 6 items of the social distance scale. Furthermore, the relative frequencies due to sex and age are shown for each item. Chi-square-tests for sex and for age were computed item-wise. Women demonstrate a greater social distance than men in 2 items (marriage and conversation), whereas 4 items do not differ in relation to sex. There is a significant relationship between higher age and higher social distance.

People with schizophrenia moving into a group home in the neighbourhood: 7.6 % of the interviewees would be supportive if a group of 6–8 people with schizophrenia were to move into their neighbourhood, 57.1 % were indifferent, 30.7 % of the respondents would be worried about it and 4.6 % would oppose such a group home in their neighbourhood. 53.8 % of the opponents of a group home (i. e. 2.5 % of all interviewees) would try to prevent people with schizophrenia from moving into their neighbourhood.

In regard to sex, less women (52.4 %) than men (62 %) were indifferent to, and more women (34.5 %) than men (26.8 %) would be worried about a group home in their neighbourhood (chi-square-value$_{df=1}$: 63.986; $p \leq 0.001$). A higher rate of anxiety and opposition to the prospect of the group home was found in the higher age groups (chi-square-value$_{df=9}$: 334,414; $p \leq 0.001$).

Assessments of social stigmatisation

In Table 5, relative frequencies of the agreement to statements about social acceptance and social stigmatisation of former mental patients in the public are shown. As in Table 3 and Table 4, the relative frequencies due to sex and age are specified for each item. Chi-square-tests for sex and for age were computed item-wise.

Women agreed more frequently to 2 items of social acceptance. For the other 4 items, no sex differences were found. Women agreed more frequently to 5 out of the 7 items of social stigmatisation. Concerning age, the findings show that younger people agree more frequently to items of social discrimination and less frequently to items of social acceptance.

Recommendations for interventions to improve the acceptance of mental patients by the public

A total of 82.5 % (N = 5,980; female: 85.3 %; male: 79.6 %; chi-square-value$_{df=1}$: 40.273; $p \leq 0.001$; age: 16–30 yrs. 83.7 %; 31–45 yrs. 83.2 %; 46–60 yrs. 82.3 %; 61+ yrs. 79.6 %; chi-square-value$_{df=3}$: 9.276; $p \leq 0.05$) of the survey participants stated that something should be done to improve the acceptance of people with mental disorders by the public. In Table 6, the relative frequencies are shown, specified for age and sex, of the agreement (important or very important) to suggested interventions. The reference group consists of those interviewees who were of the opinion that something should be done to improve the acceptance in general. Chi-square-tests for sex and age were computed item-wise.

More women than men agreed to the importance of all proposed interventions. Age differences were found in 2 items: more younger than older people prefer education and information, but more older people would prefer changes in legislation to be made as a means of reducing stigma.

Of the 5,735 respondents who stated that more education and information about mental illness is important or very important (item 1), 84.6 % were of the opinion that it should be directed in particular at the general

Table 4 Social distance felt towards people with schizophrenia (N = 7246)

Agreement to "Would you probably or definitely …"	total	sex			age (years)				
	%	female %	male %	p	16–30 %	31–45 %	46–60 %	> 61 %	p
1 – not marry someone with schizophrenia	77.0	79.4	74.5	< 0.001	67.1	74.3	83.2	90.0	< 0.001
2 – feel disturbed about sharing a room with someone …	42.8	43.3	42.3	0.390	37.3	40.5	45.2	53.2	< 0.001
3 – be unable to maintain a friendship with someone …	22.8	22.2	23.5	0.198	17.4	21.0	23.9	33.8	< 0.001
4 – be disturbed about working on the same job with someone …	16.1	16.3	15.9	0.569	14.1	14.5	17.2	21.5	< 0.001
5 – feel afraid to have a conversation with someone …	8.5	9.3	7.7	0.012	7.8	7.8	8.5	11.4	0.002
6 – feel ashamed if people knew someone in your family …	7.0	6.7	7.4	0.262	6.2	6.5	7.5	9.0	0.015

"… who has schizophrenia"/"… diagnosed with schizophrenia"

Table 5 Assessment of social stigmatisation and discrimination (N = 7246)

Agreement to "Most people …"	total	sex			age (years)				
	%	female %	male %	p	16–30 %	31–45 %	46–60 %	> 61 %	p
items of social acceptance									
a1 – believe that a person who has been in a mental hospital is just as intelligent as the average person	40.2	41.7	38.5	0.006	34.0	34.3	44.4	57.7	< 0.001
a2 – would accept a former mental patient as a close friend	37.5	38.9	36.0	0.012	36.2	35.4	37.4	44.7	< 0.001
a3 – would hire a former mental patient, if he or she is qualified for the job	29.8	29.3	30.4	0.300	29.5	24.4	29.8	42.9	< 0.001
a4 – believe that a former mental patient is just as trustworthy as the average citizen	28.1	27.7	28.6	0.409	24.3	22.5	32.9	40.8	< 0.001
a5 – would treat a former mental patient just as they would treat anyone	22.4	22.5	22.2	0.776	17.5	17.4	25.9	36.5	< 0.001
a6 – would accept a fully recovered former mental patient as a teacher of young children in a public school	20.9	20.9	21.0	0.930	18.5	16.8	23.7	30.4	< 0.001
items of social stigmatisation									
b1 – would pass over the application of a former mental patient in favour of another applicant	81.1	82.3	79.8	0.008	79.9	82.7	80.9	79.3	0.034
b2 – would not hire a former mental patient to take care of their children	74.1	75.6	72.6	0.004	76.0	76.2	72.4	69.0	< 0.001
b3 – young women would be reluctant to date a man who has been hospitalised for a serious mental disorder	69.6	70.9	68.1	0.009	68.4	71.6	67.4	69.3	0.020
b4 – young men would be reluctant to date a woman who has been hospitalised for a serious mental disorder	66.7	70.8	62.4	< 0.001	63.8	68.0	67.0	67.9	0.020
b5 – think less of a person who has been in a mental hospital	62.9	62.2	63.6	0.233	65.7	67.4	59.5	52.6	< 0.001
b6 – would take his or her opinion less seriously	50.0	49.7	50.2	0.681	50.0	53.4	48.3	44.0	< 0.001
b7 – feel that entering a mental hospital is a sign of personal failure	46.6	47.8	45.3	0.036	50.6	53.6	41.6	31.0	< 0.001

Table 6 Recommendations for interventions to improve the acceptance of mentally ill by the public (N = 5980)

Agreement to "important or very important …"	total	sex			age (years)				
	%	female %	male %	p	16–30 %	31–45 %	46–60 %	> 61 %	p
1 – more education and information on mental illness	95.5	96.2	94.8	0.006	96.2	96.1	94.9	93.9	0.015
2 – more positive portrayals and reports in the media	88.6	90.3	86.6	< 0.001	88.6	88.1	88.9	89.3	0.752
3 – more art exhibitions or theatrical events involving mentally ill	87.0	89.0	84.7	< 0.001	86.4	87.9	86.7	85.9	0.388
4 – more opportunities for contact with the mentally ill	80.3	81.8	78.6	0.002	79.0	80.3	81.3	81.1	0.414
5 – changes in legislation	56.6	59.9	52.9	< 0.001	56.5	54.6	57.2	60.7	0.018

public, 17.8 % at schoolchildren and young people, 11.5 % at the relatives of the mentally ill, 7.4 % at work colleagues and superiors, 6.4 % at friends, and 5.3 % at health professionals (multiple answers were allowed).

Discussion

Knowledge about the causes of schizophrenia

In comparison to the Canadian population survey (Stuart & Arboléda-Florez 2001), in which respondents were reflected as having a multifactorial model of illness which is also endorsed by physicians and psychotherapists (63 %), only 33 % of the respondents could name causes of schizophrenia in the present survey. Thus, about a half of these respondents named biological causes of schizophrenia. Psychosocial factors were also named by 50 % of these respondents.

It seems that the German public is not sufficiently informed about the causes of schizophrenia. Though providing information alone is not expected to reduce stigmatisation, it is considered to be an important factor (Haghighat 2001). Accordingly, public information campaigns are recommended. Furthermore, in both the present and the Canadian study, women were better informed about the causes of schizophrenia than men. This may be due to an assumed greater role-specific in-

terest in mental health topics. This means that future interventions to provide information about schizophrenia should address men in particular.

Knowledge and beliefs about symptoms, behaviour and treatment options

A large percentage (80 %) of the interviewees associated schizophrenia with a split personality, whereas this rate was only 47 % in the Canadian study. Thus, in both countries most of the interviewees did not believe that people with schizophrenia are mentally retarded or less intelligent and most were of the opinion that they require prescription drugs for treatment, that they can be successfully treated outside the hospital in a familiar environment and can have regular jobs.

The answers in favour of medication for the treatment of schizophrenia obtained in the present study differ from those given in other population surveys carried out in 1990 and 1993 (Angermeyer 1994). In these surveys, psychotherapy was the most frequently recommended treatment modality and was favoured by more than half of the respondents, while the administration of psychotropic drugs ranked fifth on the list of treatment methods for schizophrenia and was favoured by only 20 % of the respondents. This result leaves open the question as to whether the differences in the evaluation of treatment methods are due to a change in attitudes over the past 10 years or whether they are attributable to substantial differences in the methods used to collect the data (telephone interviews vs. face-to-face interviews). The differences could also be attributed to the item construction and response categories: in the population surveys carried out by Angermeyer's research group, the respondents were presented case vignettes of mentally ill people and consecutively rated different treatment methods (psychotherapy, relaxation exercises, meditation, natural remedies, psychotropic drugs and acupuncture) according to how recommendable they considered them to be for the treatment of schizophrenia. In the present study respondents were only asked how frequently people with schizophrenia need medication to control the symptoms and how frequently they can be treated successfully by psychotherapy without medication. No other treatment methods were mentioned.

Social distance

The results concerning social distance are similar to those of the Canadian study (Stuart and Arboleda-Flôrez 2001) and also, with certain limitations – taking into consideration the differences in methods mentioned above – to those of Angermeyer (Angermeyer & Matschinger 1996). All three studies show that the extent of social distance increases with increasing intimacy of the relationship. That means the more close and private the imagined situation is, the more rejection of people with schizophrenia is to be expected. In Angermeyer's study (Angermeyer & Matschinger 1996) the proportions are higher, presumably because of the afore-mentioned methodological differences, e. g. the detailed presentation of case vignettes.

The fact that every sixth person would feel disturbed about working on the same job with a person with schizophrenia, reflects the difficulties of reintegrating former patients into employment, evidently leading to socioeconomic disadvantages. Additionally, nearly every second person would feel disturbed about sharing a room with a person with schizophrenia. Regarding age as an influencing factor, the greater social distance found to exist in older people is in line with the previous finding that older people often place more emphasis on negative characteristics and behaviour. This finding and the small differences in gender confirm the results reported by Stuart and Arboleda-Flôrez (2001). Furthermore, more older than younger people would be against the establishment of a group home for persons with schizophrenia in their neighbourhood. The results regarding acceptance of a group home for people with schizophrenia in their neighbourhood were comparable to those of Stuart and Arboleda-Flôrez, who also found that less than 10 % of the Canadian public would be opposed to such an institution. Similar percentages were also found in Angermeyer's survey (Angermeyer 1994), although questions about the acceptance of a group home for mentally ill people were expressed in more general terms. This percentage may be biased by social desirability and therefore underestimated. Hence, the public needs to be prepared before group homes are established for former inpatients in the community (Rössler et al. 1995, Wolff et al. 1999).

Social stigmatisation

Most of the respondents rated stigmatisation of mental patients by the public as high. In regard to employment, child minding and choice of partner in particular, the respondents believed that mental patients would be rejected by most of the population. Since we are not aware of any more recent comparable studies having used the same measure, the present results can only be interpreted in comparison with those of an American population survey carried out by Link et al. in 1989. Compared to the American study, the German respondents rate social stigmatisation somewhat lower. Thus, 80 % of the 429 American respondents believed that most women would be reluctant to date a former mental patient, while this was true for 67–70 % of those interviewed in the present study. 70 % of the Americans in the study of Link et al. considered that most people would not take the opinion of a mental patient seriously, whereas this applied to 50 % of the survey participants in Germany. It remains still open to discussion, why the rates between the present and the American study differ.

The time gap of over 10 years and cultural differences between the USA and Germany may account for this finding.

Comparing the scale of social discrimination with the scale of social distance, it is noticeable that on the one hand the ratings of social stigmatisation of mental patients by the public ("most people") were high, while on the other hand a relatively high percentage of the respondents themselves expressed positive attitudes towards people with schizophrenia. While roughly 90 % of the interviewees in both Germany and Canada did not believe that people with schizophrenia are mentally retarded or less intelligent, only 40 % were of the opinion that most people would consider someone who had been in a mental hospital was just as intelligent as the average person. It is possible that the positive personal attitudes towards people with schizophrenia expressed by the respondents were influenced by social desirability. The high rating of social stigmatisation could also be attributable to the fact that the respondents had personally observed concrete disadvantages and cases of discrimination. People who frequently have contact with mentally ill people and are confronted with the daily disadvantages are likely to rate social stigmatisation particularly high (Phelan et al. 1998).

There are difficulties associated with the direct comparison of the personal attitudes and the ratings of social attitudes in so far as the questions on personal attitudes refer to people with schizophrenia, while the questions on the assessment of social stigmatisation refer to former mental patients in general. It is, however, unlikely that the respondents' attitudes towards mental patients are more negative than their attitudes towards people with schizophrenia since the social distance towards this group is greater and they are associated with more negative stereotypes than persons with other mental disorders (Angermeyer & Matschinger 1996; Crisp et al. 2000; Link et al. 1999).

Another point is that older people generally underestimate social stigmatisation of mentally ill people by the public. It seems that older people are less attentive of the social problems of mentally ill people. In relation to the previous finding of a higher social distance in higher age groups, specific antistigma-programs for older-aged people are recommendable.

Recommendations

More than 80 % of the respondents believe that something should be done to improve the acceptance of the mentally ill. One can assume that this finding is due to a social desirability effect and that as a result the proportions of agreement to the items are likely to be overestimated. According to the respondents, the most valuable intervention would be to provide more education and information about mental illness, followed by more positive portrayals and reports of mentally ill persons in the media. Obviously, the problem of a negative picture of the mentally ill in the media (Straub 1997, Condren & Byrne 2000) is also noticed by the public. The negative influence of the media on attitudes towards mentally ill people is substantial. The critical discussion about the Werther-effect in suicidal behaviour (Ziegler & Hegerl 2002) and the internet-based Stigma Alarm Network Australia (Rosen et al. 2000), which intervenes in cases of discrimination of mentally ill people, are exemplary for this approach. Changes in legislation as a means of intervention (Haefner 2000) were regarded as important by 47 % of all respondents. Even though this rate is the lowest of all recommendations, and also taking into account possible effects of social desirability, it supports the claims of relatives and user organisations (Brill 2002) for achieving equal opportunities for mentally ill people.

Study limitations

The following methodological restrictions must be taken into consideration in the interpretation of the results: The Canadian study (Stuart & Arboleda-Flôrez 2001) has been conducted with the same data collection method and the same questionnaire in the year 1998/99. Therefore differences in the results can be attributed to cultural differences. The German survey (Angermeyer, 1994, Angermeyer & Matschinger 1996) employed different questions, was performed face-to-face and took place 10 years ago. Secondly, the survey was carried out in selected German cities and is therefore only representative of urban populations in Germany. Although the selection of the cities relies on the experimental design of the antistigma-programme in the framework of the German Research Network on Schizophrenia, these cities can be seen as representative of the urban population in Germany. This assumption is supported by the huge population basis represented (approximately 5.3 million people) in the sample located in three different regions of Germany (Bavaria, Eastern Germany, and North-Rhine-Westphalia) and by the fact that no systematic differences between the cities were found. The Canadian survey conducted by Stuart and Arboleda-Flôrez (2001) revealed that the rural population was less well-informed about the biological causes of schizophrenia and more frequently associated the disorder with a split personality and violent behaviour. Higher ratings of social distance towards people with schizophrenia were also found.

Concerning the application of telephone surveys as a method of data ascertainment, there is no consistent evidence for differences in response tendencies between telephone surveys and face-to-face interviews in general (Colombotos 1969, Wells et al. 1988). However there is evidence for underreporting delicate personal topics such as psychiatric symptoms (Hintikka et al. 1998 for suicidal ideation) and gun ownership (Ludwig et al. 1998) in telephone surveys. Hence, a bias due to social desirability as a result of the interview method can-

not be excluded, but is not expected to be significant as the personal involvement in the present survey is not considered to be as high as, for example, psychiatric symptoms. Nevertheless, in the present sample, a selection bias for the age group of 46–60 years was found. This bias may affect the total percentages of the scales knowledge and beliefs, social distance and social stigmatisation, but not to a sizeable degree.

Furthermore, a social desirability bias may occur due to the content of the questions, especially in the recommendation scale, the question regarding the establishment of a group home for schizophrenia patients in the neighbourhood and in the social distance scale. In the recommendation scale, the accounted recommendations are socially desirable and have no personal implications for the interviewees. Here, the high rates of agreement are presumably overestimated. In the question about the group home, the frequency of opposing answers may be underestimated, as it is likely to be true for the social distance scale.

Another point to be discussed is that different subjects were employed in the utilised scales. In the questions on social stigmatisation and recommendations to reduce discrimination, the subjects were mentally ill people or former psychiatric patients, whereas in the questions on attitudes, knowledge, and social distance, the subjects were people with schizophrenia. Consequently, the social stigmatisation scale in its absolute values is not directly comparable with the scales of attitudes, knowledge, and social distance. The values of social stigmatisation are likely to be somewhat higher for people with schizophrenia than for mentally ill people, though no final conclusion can be made. For the recommendations scale, one can assume that the given recommendations are suitable for mentally ill people in general, as well as people with schizophrenia, because people with schizophrenia denote a salient sub-population of the mentally ill (Arkar & Eker 1991).

Conclusions

The results corroborate the need to reduce the stigmatisation which people with schizophrenia face as well as people suffering from mental illness in general. This goal can be achieved by means of specially tailored education and training programmes such as those recommended in the global anti-stigma programme of the World Psychiatric Association and undertaken within the framework of the programme in Germany, "Open the doors". In addition to information about the nature, causes of, and treatment options for mental disorders, special emphasis should be placed on achieving a more realistic portrayal of people with schizophrenia in the media. Here, the focus should lie on a positive course of illness and achievements in treatment and rehabilitation. Furthermore, emphasis should be placed on promoting personal contacts with them. Information on the disorder and the factors underlying its stigmatisation should also reach relatives and friends, colleagues and superiors, as well as physicians, therapists and nursing staff. The frequently expressed desire for more opportunities for encounters with mentally ill people, for instance, at open days at psychiatric institutions, and for more art exhibitions or theatrical productions in which mentally ill people are involved, are in line with the interventions of the German anti-stigma programme. In the project centres involved in the implementation of this programme, activities such as a public health media service (Leipzig), psychosis seminars (Hamburg), an interactive "stigma alarm system" (Munich), educational projects and training units in schools and on wards (Düsseldorf) and numerous publicity events in the general public such as readings, art exhibitions and film evenings, accompanied by continuous press work are being carried out in addition to stigma research. Although these various efforts of anti-stigma-work are exemplary, one challenge still remains: How can we assure that changes of opinions lead to the intended changes in behaviour? Attitude changes do not necessarily result in behavioural changes, but they are a prerequisite for it. Measuring the subjective experiences of stigma and discrimination of schizophrenia patients in long-term studies, particularly if accompanying anti-stigma interventions are carried out in their environment, is as necessary as the development of standardised measures to assess discriminatory behaviour and to evaluate the impact of anti-stigma interventions also on course and outcome of the disorder.

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