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The effects of a documentary film on reducing stigmatisation about schizophrenia

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ABSTRACT

Negative public reactions towards people with mental health problems, and in particular those diagnosed with schizophrenia, may result in a number of negative consequences, including aggravating their condition and making it even more difficult for them to assimilate into society. The present study examined young people's attitudes about schizophrenia and evaluated the effect of a documentary film (depicting the lives of people diagnosed with schizophrenia) on reducing stigmatization about schizophrenia. One hundred and fifteen undergraduate psychology students first provided information concerning their attitudes and knowledge about schizophrenia, in addition to filling out a questionnaire assessing their degree of acceptance of negative stereotypes and degree of social distance towards schizophrenia patients. One week later, participants viewed the documentary film and completed the same questionnaire. The film significantly and positively influenced participants' negative attitudes concerning schizophrenia. In particular, after having watched the film, participants revealed less negative and derogatory stereotypical attitudes about schizophrenia and desired less social distance with schizophrenia patients. This change was not related to social desirability, age,

Introduction

Not only do those with mental health problems, and in particular those diagnosed "schizophrenic", endure great psychological distress due to their

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disorder, but public reaction to the disorder in the form of stigma, also increases this distress. Persons diagnosed with schizophrenia are often stereotypically viewed as dangerous, unpredictable and irresponsible (Corrigan & Penn, 1999; Crisp, Gelder, Rix, Meltzer, & Rowlands, 2000). Stigmatisation has a number of negative consequences including reduced housing and work opportunities, lowered quality of life, reduced self-esteem and increased symptoms and stress (Corrigan & Penn, 1999; Penn, Chamberlin, & Mueser, 2003; Rüsch, Angermeyer, & Corrigan, 2005), thus making an already difficult situation even worse. Perhaps more importantly, assimilation into society is especially difficult for people diagnosed with schizophrenia as a consequence of psychiatric stigma.

A number of strategies may be proposed to attempt to reduce stigma: protest, contact and education. Protest refers to expressing disapproval of inaccurate and hostile representations of people with mental health problems. Contact refers to promoting interpersonal contact with persons with mental health problems. Finally, education tries to diminish stigma by providing contradictory information through books, pamphlets, films or structured teaching programmes. As indicated by Corrigan and Penn (1999), it is important to note that these stigma-reduction strategies are not always conducted in isolation. For instance, combining education with contact has shown particular promise (Rüsch et al., 2005).

In that protest-type strategies involve opposing inaccurate and hostile representations of mental health problems in public statements, media reports and advertisements, this type of strategy may have an impact on large numbers of people. Also, studies show that protest strategies are particularly effective in stopping stigmatizing advertisements or media messages (Rüsch et al., 2005). However, little is known about the effect of protest against people's prejudices. Furthermore, protest-type strategies may actually create a rebound effect (i.e. subjects who are asked to suppress thinking in a stereotypical way after a while actually have more stigmatising thoughts than before) and they have been found to be less effective in promoting positive, new attitudes (Rüsch et al., 2005).

Studies show that education can reduce stigmatising attitudes among a wide variety of participants (Corrigan & Penn, 1999). On the other hand, research on educational campaigns shows that effect sizes are often limited and that they seem to be most effective for participants with prior knowledge about mental health problems and/or who have had previous contact with people with mental

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health problems (Rüsch et al., 2005). Furthermore, the content of educational programmes may have a negative impact, especially as many educational programmes propose biological causes of schizophrenia. A focus on biological and genetic causes is problematic in that this may actually increase the sense of separation between "us" and "them" (e.g. due to a supposedly different genetic makeup or brain structure, persons diagnosed with schizophrenia may be viewed as "a different species") and in addition paints a rather negative picture concerning recovery (e.g. by suggesting a genetic, unchangeable aetiology; Rüsch et al., 2005). Indeed, studies also show that the view of schizophrenia as being of biological origin actually leads to a greater desire for social distance from persons with schizophrenia (Dietrich et al., 2004) and is positively correlated to perceptions of dangerousness and unpredictability (Read & Harre, 2001; Read & Law, 1999; Walker & Read, 2002). Moreover, a large body of evidence points to quantitative rather than qualitative differences between clinical and non-clinical populations for psychotic symptoms. Therefore, a clear distinction between "them" and "us" is not valid on a scientific level (Johns & Van Os, 2001). Another problem with educational programmes is that structured educational courses are lengthy and therefore few people may be willing to participate in them.

Contact with persons with mental health problems has been associated with improved attitudes, especially when members of the majority are given opportunities to interact with the minority group members and when there is equal status among participants (Corrigan & Penn, 1999). However, direct contact with persons with mental health problems is not always possible to organise due to practical restraints. Furthermore, in cases where this has been made possible, this service is only available to a small number of people. Thus, the effectiveness of this intervention for reducing psychiatric stigma may be limited because of its inability to reach large numbers of individuals in a cost-effective manner. Such a weakness can be addressed by utilising methods to disseminate information about mental health problems to a relatively large audience while at the same time providing a "proxy" for direct personal contact (Penn et al., 2003). This can be achieved via the media, and, in particular, via the film media.

Although films have a long history of depicting mental health problems, and in particular schizophrenia, little research has been done to show how effective this medium is in reducing negative, inaccurate or derogatory attitudes

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associated with schizophrenia (Owen, 2007). Hyler, Gabbard and Schneider (1991) have argued that films can be used to educate the public about mental health problems provided that they include authentic fictional cinematic portrayals. However, such films are very limited in number, leaving the large majority of (popular) films depicting mental health problems in general, and schizophrenia in particular, in highly inaccurate, negative and derogatory stereotypical ways (Wedding & Niemiec, 2003). For instance, Domino (1983) found (in a group of college students) greater negative attitudes towards people with mental health problems following their viewing of *One flew over the cuckoo's nest.* Interestingly, studies suggest that children are similarly exposed to negative and inaccurate stereotypical portrayals of mental health problems in children's films, such as in Disney-animated films (Lawson & Fouts, 2004). Thus, although there may be a potential in using films to educate the public about schizophrenia, popular films may actually have a deleterious effect. In contrast, documentary films may provide more accurate and realistic portrayals of schizophrenia.

At present, only one study has evaluated the specific effects of a documentary film about schizophrenia on psychiatric stigma (Penn et al. 2003). One hundred and three undergraduate students were randomly assigned to one of four experimental conditions: no documentary film, documentary about polar bears, documentary about fears of being overweight, and documentary about schizophrenia. The results indicated that although the film influenced participants' attributions about schizophrenia, it did not affect either general attitudes about the illness or behavioural intentions to participate in a focus group with persons with schizophrenia. Even though a number of the stigma measures went in the expected direction, the mean differences were not statistically significant. This might have been related to the small number of participants in each group (around 40 in each group). Also, certain measures may not have been sensitive enough (e.g. the measure of behavioural intention was limited to a single item). Furthermore, participants were asked to answer "yes" or "no" to this item and therefore different degrees of behavioural intention could not be assessed. Additionally, this item may have been too ambitious. That is, it is unlikely that participants would accept to commit themselves to such a degree simply after having seen a documentary film, especially in light of the fact that participants who responded "yes" were required to give their phone number so that they could be contacted regarding

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the meeting. Scores on the measure on blame and responsibility were very low (i.e. suggesting a floor effect) in all four groups revealing that participants did not feel that schizophrenia patients were to blame or could not be held responsible for their condition. Finally, lack of a significant finding in this study may have been related to the film. Indeed, as the authors noted, the information in the film may have been too diffuse, or the contact too impersonal, to affect attitudes about psychiatric stigma.

In the present study we wished to re-examine young people's (undergraduate psychology students) attitudes about schizophrenia as well as to evaluate the effect of a documentary film on reducing stigmatization about schizophrenia. In contrast to Penn et al. (2003), the present study:

- included a larger number (*n*=115) of participants who were exposed to a relevant documentary film (38 were exposed to the relevant documentary in Penn et al., 2003);
- included both general attitudes about schizophrenia ("What comes to your mind when you hear the word 'schizophrenia'?") and specific aspects (social distance and stereotypes);
- we examined whether knowing someone with schizophrenia beforehand might have an affect on results; and
- finally, we asked participants to describe how the film changed their attitudes about schizophrenia.

We chose a group of undergraduate psychology students for two reasons: (1) they are young and a number of studies show that targeting young people with anti-stigma campaigns is particularly effective (Sartorius, 1998; Schulze & Angermeyer, 2005; Schulze, Richter-Werling, Matschinger, & Angermeyer, 2003; Stuart & Arboleda- Florez, 2001), and (2) they represent persons who will most likely be working with people diagnosed with schizophrenia or with people with mental health problems in general. We chose a documentary film ("Radio Schizo") based on results from pilot studies suggesting that this film appealed to young people and provided changes in attitudes about schizophrenia.

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Methods

All participants signed a written informed consent. The project was approved by the local ethics committee.

PARTICIPANTS

One hundred and fifteen second-year psychology students at the University of Geneva participated in the study. The students had already received some general information about schizophrenia and symptoms in schizophrenia in class. The average age of the participants was 22.9 (range=19-59; SD=5.59) and 81% were female. The average number of years of education was 14.17 (range=10-20; SD=1.60). In total, 85 participants (75% of participants) did not know a person diagnosed with schizophrenia.

PROCEDURE AND MEASURES

In the context of a course, participants were asked to complete a number of questionnaires before watching the film and, one week later in the same course, they were asked to complete the same questionnaires directly after having watched the film.

Briefly, the documentary film entitled "Radio Schizo" (55 minutes long) follows several people with a diagnosis of schizophrenia for 4 months who are all members of a self-help organisation entitled "asbl Réflexions". The film includes a number of different scenes including intimate interviews of around five people who describe what it is like to be a schizophrenia patient, scenes showing patients involved in the production of a radio programme about schizophrenia for the general public, and scenes showing the patients in various social interactions. Although the patients in the film can be considered relatively stabilised and well-functioning, they differed in a number of aspects (e.g. severity and types of symptoms, degree of insight and compliance, whether they are hospitalised or living alone or living with their parents, etc.).

Before viewing the film, participants were asked to answer a number of general questions which included an open-ended question about their associations with the word "schizophrenia" ("What 3 words first come to your mind when you hear

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the word 'schizophrenia'?"). They were also asked to report if they know someone with schizophrenia and, if so, to describe their relation with the person (e.g. close family member, distant family member, friend, colleague, etc.). Participants were then required to complete a 19-item questionnaire based on Schulze et al. (2003). This questionnaire assesses both stereotypes of schizophrenia (7 items) and the degree of social distance with a person diagnosed with schizophrenia (12 items). All items were rated on a 5-point Likert scale (1 = "I strongly agree"; 2 = "I agree"; 3 = "unsure"; 4 = "I disagree"; 5 = "I strongly disagree"), where higher scores indicated disagreement with stereotypes and reduced social distance. Previous research (Schulze et al., 2003) has shown that this scale has adequate internal consistency (Cronbach's a for the stereotype scale=0.73 and for the social distance scale=0.80). Finally, all participants completed the Marlow-Crowne social desirability scale (Crowne & Marlow, 1960).

One week later, and directly after having seen the film, the same participants were given an open-ended question ("Describe how the film has changed your conception of schizophrenia") and thereafter completed the same 19-item questionnaire described above.

Results

Results from the open-ended question (i.e. "What 3 words first come to your mind when you hear the word 'schizophrenia'?") given one week before viewing the film are presented in Table 1. Based on this, the most common terms mentioned by participants were "hallucination" (43% of participants), "multiple personality" (41%), and madness/mad (30%).

Scores on the 19-item questionnaire consisted of the sum of responses on the 5-point Likert scale. Three scores were calculated: total score (sum of scores on all 19 items), stereotype scale (sum of scores on the 7 items pertaining to stereotypes) and social distance scale (sum of scores on the 12 items pertaining to social distance). Internal reliability of the questionnaire was established by a high Cronbach α coefficient for all items (a=0.86). The Cronbach α coefficient was high for the social distance scale (a=0.87), but was lower for the stereotype scale (a=0.62). Finally, corrected item-to- total score correlations (i.e. the correlation of each item with the total score corrected by excluding the given item from calculation of the total) were calculated. These were significant (ranging from $p<0.01$ to $p<0.001$), with Pearson r values ranging from 0.20 to 0.69.

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Table 1. Terms associated with the word "schizophrenia".

Term(s) mentioned	Number of participants (%)
Hallucination	46 (43%)
Multiple personality	43 (41%)
Madness/mad	31 (30%)
Illness in general (with no mention of type of illness)	24 (23%)
Delusion in general or specific type of delusion (e.g. persecutory, paranoid)	14 (13%)
Mental illness/psychopathology/psychosis	12 (11%)
Delirious	6 (5%)
Dissociation	6 (5%)

Table 2. Correlations between scores on the 19-item questionnaire and socio-demographic data and social desirability.

	Age	Years of education	Social desirability scale
Before film, total score	0.14	-0.03	-0.08
Stereotype	-0.07	-0.18	-0.00
Social distance	0.20*	0.03	-0.10
After film, total score	0.06	0.01	-0.13
Stereotype	-0.03	-0.01	-0.02
Social distance	0.08	0.01	-0.16

*$p<0.05$.

Total scores on the 19-item questionnaire (for both before and after viewing the film), and scores for both the stereotype and social distance subscales, did not significantly correlate with either age, number of years of education nor with scores on the Marlow-Crowne social desirability scale. The only exception was a significant correlation ($r=0.20$; $p<0.05$) between age and scores at the first

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assessment for the social distance subscale. These results are presented in Table 2. Furthermore, there were no significant differences (based on *t* tests) between male and female participants in terms of age, number of years of education, scores on the Marlow-Crowne social desirability scale, and total scores on the 19-item questionnaire (i.e. for scores for both before and after viewing the film) and for scores for both the stereotype and social distance subscales. Finally, there were no significant differences (based on *t*- tests) between those who knew a person diagnosed with schizophrenia compared to those who did not, in terms of their scores on first assessment on the 19-item questionnaire.

Table 3 presents scores for the 19-item questionnaire before and after viewing the film. In addition to the total score on this questionnaire, scores for items concerning stereotypes and degree of social distance are presented separately. This revealed significant differences (i.e. higher scores after viewing the film) for the total score and for the score on items concerning stereotypes and social distance, indicating that participants were less in agreement with negative stereotypes and revealed less social distance after having viewed the film.

Table 3. Scores for the 19-item questionnaire.

	Before the film (SD)	After the film (SD)	*t*
Total score	71.64 (7.1)	74.26 (7.9)	-2.56**
Stereotype	24.86 (2.4)	25.80 (2.6)	-2.65***
Social distance	46.75 (5.7)	48.46 (6.3)	-2.08*

*$p<0.05$; **$p<0.01$; ***$p<0.001$.

Table 4. Scores on the 19-item questionnaire for participants with prior contact.

	Before the film (SD)	After the film (SD)	*t*
Total score	73.45 (6.3)	77.00 (6.5)	-2.06†
Stereotype	24.69 (2.4)	26.00 (2.6)	-2.03†
Social distance	48.89 (5.2)	51.00 (5.3)	-1.58

†*$p<0.05$.*

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Table 5. Scores on the 19-item questionnaire for participants without prior contact.

	Before the film (SD)	After the film (SD)	*t*
Total score	71.02 (7.2)	73.31 (8.2)	-1.87†
Stereotype	24.95 (2.4)	25.73 (2.6)	-1.93††
Social distance	46.07 (5.7)	47.57 (6.4)	-1.57

†p=0.063; ††p=0.055.

Individual items from the 19-item questionnaire were then compared in terms of before and after having viewed the film. This revealed that, among the statistically significant changes, the largest changes occurred for item 6 ("Someone who has schizophrenia blows his/her top for the slightest reason"; t = -5.07; p<0.001) followed by (in descending order) item 4 ("When meeting someone with schizophrenia, one should better watch out"; t = -4.41; p<0.001), item 18 ("Someone who has schizophrenia should not work in jobs that involve taking care of children or young people; t = -3.70; p<0.001), item 1 ("Someone who has schizophrenia cannot cope with stress before exams"; t = 2.77; p<0.01) and item 15 ("I would not bring along someone with schizophrenia when I meet my friends"; t = -2.07; p<0.05). All but one item changed in the expected direction (i.e. less social distance or less agreement with negative stereotypes), item 1 ("Someone who has schizophrenia cannot cope with stress before exams") changed in the opposite direction: that is, after viewing the film compared to before viewing it, participants were more in agreement with the stereotype that schizophrenia patients cannot cope with exam-related stress.

In order to examine whether the fact of knowing someone with schizophrenia beforehand might differ with those participants who did not have prior contact with a schizophrenia patient, the same analyses were carried out separately, for those participants who did, and who did not, know a person diagnosed with schizophrenia (Tables 4 and 5).

This revealed that, for participants who knew a schizophrenia patient beforehand, there was a significant effect after having watched the film for the total score and for items on stereotypes, but not for social distance items. In contrast, this was not the case for participants who did not know a schizophrenia

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patient beforehand, although there was a statistical tendency for both the total score and the score for items concerning stereotypes (p=0.063 and p=0.055, respectively).

Finally, responses to the open-ended question ("Describe how the film has changed your conception of schizophrenia") were coded into whether participants expressed a change in their conception of schizophrenia or not. This revealed that 90 (78% of participants) declared that the film had changed their vision of schizophrenia, 11 (10%) stated that the film did not necessarily change their vision, and 14 (12%) either did not answer this question or provided answers which were difficult to determine whether or not their vision had changed. The proportion of participants whose conception changed did not differ according to whether or not they knew a person with schizophrenia, $\chi 2(1)=0.21$, p=. 65. Furthermore, in participants whose conceptions changed, the ways in which their conception had changed were grouped into various categories (Table 6). The most frequent ways in which their conception was modified were: that schizophrenia is heterogeneous and complex, the film instilled a less negative stereotyped view of schizophrenia, they could see that schizophrenia patients live normal lives and are not much different from people without schizophrenia, and it helped them realise how difficult it can be for them and the immense suffering that they experience.

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Table 6. Results of the open-ended question.

Category	Number of times mentioned
Realised that schizophrenia is complex/heterogeneous (patients vary in terms of severity and types of symptoms)	27
I had a less negative stereotyped view of schizophrenia	26
They can have normal lives	22
They are normal	22
I realised how difficult it can be for them	22
They are relatively conscious of their condition or symptoms	20
Realised that secondary effects of medications can worsen certain aspects of their lives	16
They explain and analyse their condition or symptoms with clarity	14
Crises are not continuous but are primarily passing	8
There is hope for them	4
Often positive aspects (they are highly creative/artistic)	3
Less severe (symptoms) than I thought	2
Schizophrenia patients are more accessible than I thought	1
I am less afraid to meet a person with schizophrenia	1
It's a real illness	1
I thought they were more handicapped	1

Discussion

In the present study we wished to examine attitudes about schizophrenia in a group of undergraduate psychology students and to evaluate the effect of a documentary film on reducing stigmatisation about schizophrenia. Results

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revealed that participants very frequently associated schizophrenia with "hallucination", "multiple personality", and "madness". Hallucination was the term that was most frequently associated with schizophrenia. This indicates that participants expressed an inaccurate stereotype in the form of a very strong association between schizophrenia and hallucinations. Although hallucinations are highly prevalent in persons diagnosed with schizophrenia, they also present with a number of other symptoms (e.g. poverty of speech, affective flattening, anhedonia, anxiety, depression), none of which were mentioned by the participants. Also, hallucinations are not exclusively associated with schizophrenia (but also with other psychiatric and neurological disorders), and furthermore cannot be considered a sign of pathology as a large body of evidence shows that hallucinations are present in healthy individuals without psychiatric or neurological disorders (for a review see Aleman & Larøi, 2008). Regarding the finding that a significant number of participants associated schizophrenia with the term "multiple personality", this is similarly inaccurate, as schizophrenia and split personality are neither aetiologically nor diagnostically related (American Psychiatric Association, 2000). This finding is in line with previous studies which reveal that the perception of schizophrenia among the public is dominated by the view that it entails a split personality or multiple personalities (Schulze & Angermeyer, 2005). Authors have noted that the general public seems to draw on a "Dr Jekyll and Mr Hyde" metaphor; that is, that individuals with schizophrenia or psychosis alternate between "good" (Dr Jekyll) and "evil" (Mr Hyde) personalities, an image which significantly contributes to the public fear of schizophrenia (Wahl, 1992). Interestingly, studies with adult populations show that one-third or almost half among the adult population connect schizophrenia with split personality (Stuart & Arboleda-Florez, 2001), whereas in children and adolescents these rates are much lower, only occurring in approximately 1 in 5 (Schulze & Angermeyer, 2005). Almost one-third of participants also associated the derogatory term "madness" or "mad" with schizophrenia. Finally, a number of participants also considered schizophrenia to be an illness: 21% of participants utilised the term "illness" in general and 11% associated schizophrenia with a type of mental illness.

On a more positive note, very few participants associated schizophrenia with (more violent) negative personality characteristics, which is in contrast with other studies involving non-student adult populations (Angermeyer &

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Matschinger, 1995; Corrigan & Penn, 1999; Crisp et al., 2000). For instance, Angermeyer and Matschinger (1995) found that nearly one-sixth of participants named personality characteristics such as violence, inconsistency, unpredictability or delinquency.

Another purpose of this study was to examine whether a film documentary about schizophrenia could reduce stigma. The findings indicate that the film significantly influenced participants' negative and derogatory attitudes concerning schizophrenia. In general, based on the open-ended question, a large majority of participants stated that the film had changed their vision of schizophrenia in one way or another. Interestingly, the proportion of participants whose conception changed did not differ according to whether or not they knew a patient with schizophrenia. In particular, a number of participants mentioned that the film helped them realise how heterogeneous and complex schizophrenia is, it enabled them to have a less negative and derogatory stereotyped view of schizophrenia, they could see that persons diagnosed with schizophrenia live normal lives and are not much different from people without schizophrenia, and it helped them realise how difficult it can be for them and the immense suffering that they experience.

Concerning results from the questionnaire, after having watched the film, participants revealed less negative and inaccurate stereotypical attitudes about schizophrenia and desired less social distance with people diagnosed with schizophrenia. Furthermore, although there was a significant change for both negative stereotypes and social distance, the effect for stereotypes was stronger than for social distance. This change was not related to social desirability or to age, sex or years of education. Finally, this positive attitude change was more pronounced in the group of participants with prior contact with a person diagnosed with schizophrenia, compared to those without prior contact. All but one item changed in the expected direction (i.e. less social distance or less in agreement with negative stereotypes after having watched the film). This item: "Someone who has schizophrenia cannot cope with stress before exams" did not and had the opposite (statistically significant) effect. That is, after having watched the film, participants were more in agreement with the negative stereotype that people diagnosed with schizophrenia cannot cope with exam-related stress. Indeed, this is coherent with the different comments mentioned by the patients in the film (e.g. one patient mentioned that he experienced more difficulty in managing stress than his colleagues and therefore could not work

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full-time).

In general, the finding that viewing the documentary film reduced negative attitudes associated with schizophrenia has two implications. Firstly, it supports the use of films in reducing stigma for mental health problems, in particular when the film portrays real people (e.g. as opposed to including experts who give illness explanations). Secondly, it supports the use of contact-type strategies, as the documentary film can be considered a form of "proxy" contact for real people.

It is not clear exactly why the documentary had an effect on young people's attitudes about schizophrenia. However, it can be hypothesised that this change is, at least in part, due to the fact that the film provided a realistic, honest and present-day depiction of what it is like to have a schizophrenia diagnosis. The people portrayed in the film had approximately the same age as the students who viewed the film. Also, based on answers provided by the participants, many of the students could relate to the many issues and experiences brought to light by the patients such as difficulties becoming fully autonomous and independent, the presence of life crises, and expressions of their personal goals and desires. In line with this, studies suggest that stigma-reducing interventions that include a first-person perspective and personal information of schizophrenia patients are the most effective (Mann & Himelein, 2008). Furthermore, another positive element of the film is that it does not emphasise negative characteristics of schizophrenia and does not primarily focus on disorder-related deficits. Finally, although certain biological aspects are mentioned in the film (e.g. the fact that schizophrenia may be related to neuroreceptor abnormalities in the brain), these aspects were not accentuated and furthermore were presented amongst a number of other possible explanations. This is in line with previous research (Walker & Read, 2002) reporting that a film mentioning a range of causes (psychological, social and biological) yields a positive change in stigma, whereas a film that only presents a biological cause increases fear and prejudice.

The present study has a few limitations. Only answers to questionnaires were used to assess attitude change and therefore it is not known if the film actually changed the participants' behaviour. In this context, it would be interesting to explore attitude changes by using experimental paradigms designed to assess implicit attitudes such as the Implicit Association Task (De Houwer, 2006). The fact that participants (at the second assessment) were first asked an open-ended

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question concerning how the film changed their conception of schizophrenia may have biased participants' responses (e.g. this implicitly assumes that there has been a change). Nevertheless, it is important to note that as many as 22% of participants did not express that the film changed their conception. Also, whether or not the observed attitude change was long-lasting was not examined in the present study. To the best of our knowledge, no previous study has examined this issue. Indeed, another study has been planned that includes an examination of the long-terms effects of the documentary film on reducing stigmatisation about schizophrenia. Only undergraduate (psychology) students were included, and therefore results may not be generalised to the general population. However, as described in the Introduction, there were a number of important reasons for including this group. Furthermore, studies show that undergraduates and community members do not significantly differ in attitudes toward people with severe mental health problems (Penn & Nowlin-Drummond, 2001). The students who participated in the study had already received some general information about schizophrenia in classes so they represent a rather unique sample. However, in spite of having prior knowledge about schizophrenia, they nonetheless expressed a number of negative and inaccurate stereotypes (i.e. they strongly associated schizophrenia with hallucinations, a large number of participants claimed that people diagnosed with schizophrenia have double or multiple personalities, and they related schizophrenia with the derogatory term "madness"). Finally, no control group (e.g. that viewed a documentary film on another subject) was included.

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