

# Attitudes of mental health professionals towards persons with schizophrenia: a transcultural comparison between Switzerland and Brazil

Atitudes de profissionais de saúde mental em relação a indivíduos com esquizofrenia: uma comparação transcultural entre Suíça e Brasil

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## Abstract

**Background:** Stigmatization is an important issue in the treatment and course of schizophrenia. The maintenance of stigmatizing attitudes may be related to socio-cultural factors. **Objectives:** To compare stigmatizing attitudes of mental health professionals in the culturally diverse countries Brazil and Switzerland. **Methods:** We analyzed data of two broad stigmatization surveys from Switzerland and Brazil by focusing on the social distance and attitudes of mental health professionals towards the acceptance of side effects of psychopharmacological treatment. **Results:** Swiss mental health professionals showed significantly higher levels of social distance than their Brazilian counterparts. There was also a weak effect of age as well as an interaction effect between origin and age. With respect to the acceptance of side effects, the effect of origin was rather weak. With the exception of drug dependence, Swiss professionals' acceptance of long-lasting side effects was significantly higher than for their counterparts in Brazil. **Discussion:** The strong association between origin and social distance may be related to the socio-cultural background of the mental health professionals. In comparison with Switzerland, Brazil is very heterogeneous in terms of ethnicity and socio-economic structure. The distinct acceptance of side effects may additionally be related to the more sophisticated medicaments (i.e. new generation of antipsychotic drugs) commonly used in Switzerland.

Hengartner MP, et al. / *Rev Psiq Clín.* 2012;39(4):115-21

**Keywords:** Stigmatization, social distance, stereotypes, schizophrenia, epidemiology, medication, discrimination.

## Resumo

**Contexto:** A estigmatização é uma questão importante no tratamento e no curso da esquizofrenia. A manutenção de atitudes estigmatizantes pode estar relacionada a fatores socioculturais. **Objetivos:** Comparar atitudes estigmatizantes de profissionais de saúde mental em países culturalmente diversos: Brasil e Suíça. **Métodos:** Foram analisados dados de duas grandes pesquisas sobre o estigma na Suíça e no Brasil, focando-se no desejo de distância social em relação a indivíduos com esquizofrenia e atitudes de profissionais de saúde mental em relação à aceitação de efeitos colaterais do tratamento psicofarmacológico. **Resultados:** Profissionais de saúde mental suíços apresentaram níveis significativamente mais elevados de distância social do que suas contrapartes brasileiras. Houve também um efeito fraco de idade, bem como um efeito da interação entre a origem e a idade. Com relação à aceitação de efeitos colaterais, a influência da origem foi bastante fraca. Com exceção do risco de dependência dos psicotrópicos, a aceitação dos profissionais suíços a efeitos colaterais de longa duração foi significativamente maior do que a de seus colegas no Brasil. **Conclusões:** A forte associação entre origem e distância social pode estar relacionada à formação sociocultural dos profissionais de saúde mental; em comparação com a Suíça, o Brasil é muito heterogêneo em termos de estrutura étnica e socioeconômica. A aceitação de efeitos colaterais pode também estar relacionada com os medicamentos mais sofisticados (ou seja, drogas antipsicóticas de nova geração) comumente usados na Suíça.

Hengartner MP, et al. / *Rev Psiq Clín.* 2012;39(4):115-21

**Palavras-chave:** Estigmatização, distância social, estereótipos, esquizofrenia, epidemiologia, medicamentos, discriminação.

## Introduction

Stigma towards individuals with schizophrenia is known to worsen the outcome of the disorder. Studies have shown that depression, self-confidence and quality of life, for example, are worst for those who experience stigma than for those who do not<sup>1,2</sup>. This led to stigma being intensively studied over the past two decades as well as to the launch and evaluation of several anti-stigma campaigns<sup>3,4</sup>.

As part of the research conducted on stigma, there has been much debate as to which measures should be adopted to reduce prejudice. For instance, some authors have proposed that the stigma against the mentally ill be fought with a three-pronged strategy: contact, information and protest<sup>5,6</sup>. On the other hand, assessments about the deinstitutionalization process in the United States have

shown that greater contact with the mentally ill, in fact, increased the stigma towards them by the general population<sup>7</sup>. As for biased information or misinformed opinion, they have been demonstrated to be another source of stigma stimulation; for instance, greater media coverage of crimes committed by individuals with mental disorders and the stereotypical association between this population and dangerousness or aggressiveness has been shown to contribute to a large extent to increasing prejudice towards such individuals<sup>8</sup>. However, this contrasts with the view held by some that mental health (MH) professionals (who by the very nature of their occupation are people in constant contact with psychiatric patients) can use information to label individuals and thus decrease social distance<sup>9</sup>. Some other studies have shown that the attitude of MH professionals,

a key population in promoting views that do not stigmatize the mentally ill, is sometimes more prejudicial than the attitude of the general population<sup>10,11</sup>.

Broad, worldwide anti-stigma initiatives have encountered some difficulty in reaching full efficacy<sup>12,13</sup>. This is because stigma appears to be a complex social phenomenon<sup>14</sup>, deeply entrenched in society, and one that manifests itself in a heterogeneous way, in keeping with the specific characteristics of each socio-cultural environment. If such initiatives are to have the desired effect on MH professionals who play a fundamental role in disseminating appropriate knowledge and attitudes towards the mentally ill, issues such as the following need to be examined: do the socio-cultural factors of each specific environment in which these professionals work play a role in stigma manifestations, and to what extent does the setting influence stigma?

Thus, the aim of this study was to assess this trans-cultural issue by comparing two samples of MH professionals from distinct countries, one from Switzerland, the other from Brazil, for their social distance to individuals with schizophrenia and their acceptance of side effects of psychopharmacological treatment of these patients.

## Methods

### Samples and procedure

For Switzerland we re-analyzed data from the study “health and illness in people with mental disorders – a professional perspective”<sup>10,11,15</sup>. For that survey, all 32 psychiatric institutions of the German-speaking part of Switzerland were included in data collection. MH professionals were selected through the following process 1) an outline of the project sent to the executives of all 32 institutions, 2) a presentation of the study delivered at each participating institution, and 3) distribution of a handout with an application form to every MH professional in the participating institutions. In all 3,088 mental health professionals representative of the German-speaking part of Switzerland were approached, and 1,073 subjects (response rate 34.7%) agreed to participate in a computer-assisted telephone interview (CATI). Specially trained psychology students conducted CATI under supervision between April 2003 and April 2004. Three case vignettes were presented for the purpose of comparing stigmatization between different patients groups. The first case vignette described a patient with depression, the second a patient with schizophrenia and the third described a person in a changing life situation without any psychiatric symptoms. Further details of the sampling procedure have been provided elsewhere<sup>10</sup>. For the present study we used only participants that responded to the questions after introduction of the case vignette of schizophrenia, which reduced the sample size to 383 subjects.

The Brazilian participants were recruited and surveyed through a face-to-face interview during the Brazilian Congress of Psychiatry held in Sao Paulo in November 2009 by the Brazilian Association of Psychiatry. This national congress is considered to attract a large audience, with normally over 5,000 participants from all over the country and many visitors from abroad. Since Sao Paulo is Brazil's largest city and it has many MH professionals, in the year the study was conducted some 6,500 individuals were present at the meeting. A research institute was hired to perform the interviews. Fifty interviewers were selected and trained by the investigators of this study. In the Brazilian sample of mental health professionals the case vignette used in Switzerland describing a patient with schizophrenia was replaced with the expression “a person diagnosed with schizophrenia” to keep the duration of the interview as short as possible. During the four days of the conference, overall 2,549 participants were invited to participate in the face-to-face interviews. Of these, 954 persons refused to participate or to complete the entire questionnaire, which reduced the sample size to 1,595 subjects. A further three participants were excluded because they were nationals of Venezuela, thus leading to a final sample number of 1,592 Brazilian MH professionals (response rate 62.5%). More details have been provided elsewhere<sup>16</sup>.

### Instrument and measures

The questionnaire applied in both samples has been used in previous attitude-surveys in Switzerland<sup>10,11,15,17</sup> and Brazil<sup>18</sup>. Along with socio-demographic information the instrument includes questions on stereotypes, social distance and prejudice against mentally ill people as well as recommendations on treatment. For the present study, we adapted 10 items related to the acceptance of side effects of psychopharmacological treatment from the survey of Angermeyer *et al.*<sup>19</sup> and 6 items of the Social Distance Scale<sup>20</sup>. The original Social Distance Scale consists of seven questions, but the item “would you rent a room to a person with schizophrenia” was only provided in the Swiss sample, as in Brazil it is quite uncommon to rent a room to another person.

The Social Distance Scale assesses a respondent's willingness to interact with a person with a mental disorder. The response scale in the Swiss survey ranged from 1 “certainly yes” to 5 “definitely no”. The Brazilian interview used a 3-point Likert scale with 1 standing for “certainly yes”, 2 for “maybe” and 3 for “definitely not”. As a result, the Swiss data had to be recoded to correspond to the Brazilian data. We matched the values 1 and 2 of the Swiss data with the value 1 of the Brazilian data, the value 3 of the Swiss data with the value 2 of the Brazilian data and, finally, the values 4 and 5 of the Swiss data with the value 3 of the Brazilian data. The internal consistency of the scale was good (Cronbach's  $\alpha = 0.742$ ).

The acceptance of side effects of psychopharmacological treatment measures the attitude, for how long a person with schizophrenia should accept various side effects of psychopharmacological treatment. Answers had to be chosen from a 3-point Likert scale ranging from 1 “should not accept”, 2 “should accept 2-3 weeks” and 3 “should accept more than 3 weeks (i.e. in the long term)”. The internal consistency of that scale was also good (Cronbach's  $\alpha = 0.742$ ).

### Statistical analyses

First, bivariate associations between attitudes towards persons with schizophrenia and origin of MH professionals were conducted with cross-tabulations. Significance levels were indicated with Pearson Chi-square test statistics. Second, continuous variables for social distance and acceptance of side effects of psychopharmacological treatment were obtained by computing the sum-score of all response items in a given category. Afterwards, both scales were standardized by applying the z-transformation. High values indicated increased social distance and acceptance of side effects, respectively. Third, for both continuous measures a separate multivariate model was carried out using a three factorial ANOVA. Origin, sex, age and their first and second order interaction effects were entered as the independent variables. Two-tailed significance tests were applied.

All statistical analyses were conducted with SPSS version 19 for Macintosh.

## Results

The final Swiss sample used for the present study consisted of 140 males (36.6%) and 243 females (63.4%), and the mean age was 40.8 years (SD = 9.2). Furthermore, the sample comprised 67 psychiatrists (17.5%), 27 psychologists (7.0%), 240 attendants (62.7%), and 49 social workers and other physicians/therapists (12.8%). The Brazilian sample of MH professionals consisted of 853 males (53.6%) and 739 (46.4%) females and the mean age was 42.8 years (SD = 12.7). The sample comprised 1,414 psychiatrists (88.8%), 44 psychologists (2.8%), 11 attendants (0.7%) and 123 social workers and other physicians/therapists (7.7%).

In the bivariate analyses for the single items of social distance from persons with schizophrenia, Swiss MH professionals reported significantly more social distance than Brazilian MH professionals (see table 1). Bivariate results for the acceptance of side effects of psychopharmacological treatment are reported in table 2. With the exception of drug addiction, Brazilian MH professionals were more

**Table 1.** Social distance against persons with schizophrenia: frequency and percentage of response categories in association with origin of the mental health professionals

		Swiss	Brazil	$\chi^2$ (Sig.)
Would you move next door to a person with schizophrenia?	Certainly yes	283 (73.9%)	1210 (76.1%)	28.888 (0.000)
	Maybe	60 (15.7%)	319 (20.1%)	
	Definitely not	40 (10.4%)	62 (3.9%)	
Would you like your child or other relative to marry a person with schizophrenia?	Certainly yes	131 (35.4%)	398 (25.0%)	48.080 (0.000)
	Maybe	128 (34.6%)	869 (54.6%)	
	Definitely not	111 (30.0%)	325 (20.4%)	
Would you trust a person with schizophrenia to take care of your children?	Certainly yes	49 (12.9%)	457 (28.7%)	309.059 (0.000)
	Maybe	79 (20.7%)	805 (50.6%)	
	Definitely not	253 (66.4%)	329 (20.7%)	
Would you like to start work with a person with schizophrenia?	Certainly yes	163 (43.1%)	1275 (80.1%)	619.530 (0.000)
	Maybe	56 (14.8%)	297 (18.7%)	
	Definitely not	159 (42.1%)	20 (1.3%)	
Would you introduce a friend of yours to a person with schizophrenia?	Certainly yes	176 (46.1%)	1398 (87.8%)	481.583 (0.000)
	Maybe	82 (21.5%)	168 (10.6%)	
	Definitely not	124 (32.5%)	26 (1.6%)	
Would you recommend a person with schizophrenia for a job?	Certainly yes	72 (18.9%)	621 (39.1%)	614.637 (0.000)
	Maybe	101 (26.5%)	891 (56.1%)	
	Definitely not	208 (54.6%)	77 (4.8%)	

**Table 2.** Acceptance of side effects of psychopharmacological treatment: frequency and percentage of response categories in association with origin of the mental health professionals

		Swiss	Brazil	$\chi^2$ (Sig.)
Dry mouth	Not accept	12 (3.2%)	79 (5.0%)	14.750 (0.001)
	Accept 2-3 weeks	168 (44.2%)	840 (53.0%)	
	Accept in the long term	200 (52.6%)	665 (42.0%)	
Transpiration	Not accept	19 (5.0%)	197 (12.4%)	18.908 (0.000)
	Accept 2-3 weeks	227 (60.1%)	930 (58.6%)	
	Accept in the long term	132 (34.9%)	459 (28.9%)	
Fatigue	Not accept	24 (6.3%)	346 (21.8%)	49.103 (0.000)
	Accept 2-3 weeks	280 (73.9%)	1006 (63.5%)	
	Accept in the long term	75 (19.8%)	233 (14.7%)	
Sexual impairment	Not accept	49 (13.2%)	322 (20.4%)	13.508 (0.001)
	Accept 2-3 weeks	206 (55.7%)	736 (46.6%)	
	Accept in the long term	115 (31.1%)	522 (33.0%)	
Restlessness	Not accept	133 (35.3%)	765 (48.3%)	21.724 (0.000)
	Accept 2-3 weeks	218 (57.8%)	714 (45.1%)	
	Accept in the long term	26 (6.9%)	104 (6.6%)	
Weight gain	Not accept	66 (17.5%)	553 (35.0%)	50.527 (0.000)
	Accept 2-3 weeks	184 (48.8%)	523 (33.1%)	
	Accept in the long term	127 (33.7%)	506 (32.0%)	
Movement disorder	Not accept	226 (59.6%)	1159 (73.2%)	27.503 (0.000)
	Accept 2-3 weeks	141 (37.2%)	385 (24.3%)	
	Accept in the long term	12 (3.2%)	39 (2.5%)	
Weariness	Not accept	86 (22.8%)	558 (35.3%)	27.624 (0.000)
	Accept 2-3 weeks	256 (67.9%)	841 (53.2%)	
	Accept in the long term	35 (9.3%)	183 (11.6%)	
Drug addiction	Not accept	119 (32.3%)	367 (23.8%)	61.224 (0.000)
	Accept 2-3 weeks	176 (47.8%)	529 (34.4%)	
	Accept in the long term	73 (19.8%)	644 (41.8%)	
Tremor	Not accept	196 (51.9%)	769 (48.6%)	3.005 (0.223)
	Accept 2-3 weeks	167 (44.2%)	718 (45.5%)	
	Accept in the long term	15 (4.0%)	95 (6.0%)	

reluctant to accept side effects due to psychopharmacological treatment than their Swiss counterparts. Acceptance of tremor did not yield significant differences between the two groups.

Results of the multivariate analyses are shown in table 3. With respect to the social distance against people with schizophrenia, the origin of the MH professionals was a strong predictor when adjusted for sex and age. The mean score on the social distance scale was more than one standard deviation higher for Swiss MH professionals than

for their counterparts in Brazil (means = 0.915 vs. -0.221 for the Swiss and Brazilian samples, respectively) and thus representing a very strong effect (Cohen's  $d = 1.14$ ). A statistically significant association was also found for age, suggesting that young MH professionals (aged up to 30) showed less social distance (mean = 0.225), whereas older MH professionals (aged 51 and older) reported higher social distance (mean = 0.496). Furthermore, a significant interaction effect between the origin and age of the MH professionals was observed (see figure 1). In

Switzerland, there were notable differences in the total social distance score in relation to age, whereas in Brazil the MH professionals of all age categories yielded almost identical values. Overall, the tests of between-subject effects accounted for 20.3% of total variance in the social distance scale, which is quite high considering that only three independent variables were entered into the model.

The acceptance of side effects of psychopharmacological treatment was also significantly predicted by the origin of the MH professionals when adjusted for sex and age; Brazilian MH professionals were less tolerant to long-term side effects in their patients with schizophrenia than their Swiss colleagues (means = 0.185 vs. -0.039 for Swiss and Brazilian MH professionals, respectively). The corresponding effect size was weak (Cohen's  $d = 0.22$ ). In addition, there was a significant effect of sex, indicating that males reported a higher acceptance of long-lasting side effects (means = 0.147 vs. 0.000 for males and females, respectively), and a significant effect of the interaction of age and sex. As shown in figure 2, males reported higher acceptance in the youngest (up to 30 years) and in the two oldest age groups (41 years and more), whereas females reported higher acceptance in the age group of 31-40 years. However, the overall model explained only 2.0% of total variance, suggesting that the origin, sex and age of MH professionals show only a slight correlation with the acceptance of side effects.

The social distance towards persons with schizophrenia and the acceptance of side effects of psychopharmacological treatment in persons with schizophrenia were uncorrelated. This finding applies to the total sample (Pearson  $r = 0.032$ ,  $P = 0.166$ ) as well as to the separate Swiss (Pearson  $r = 0.034$ ,  $P = 0.534$ ) and Brazilian samples (Pearson  $r = -0.005$ ,  $P = 0.848$ ).

## Discussion

This is the first study comparing attitudes of MH professionals towards persons with schizophrenia in Switzerland and Brazil. We used multivariate models that adjusted for sex and age and we additionally

examined interaction effects. Results show that the socio-cultural background may have an important effect on stigma towards individuals with schizophrenia.

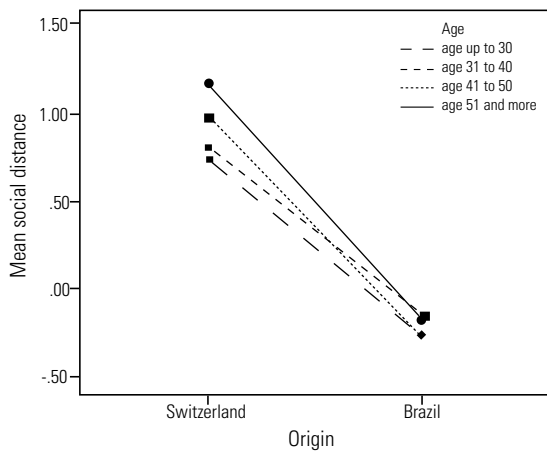
Swiss MH professionals reported a consistently higher social distance towards individuals with schizophrenia than their Brazilian counterparts. The difference between the two groups was higher when the questions pertained to a more distant contact; on the other hand, questions relating to a closer contact showed a lesser difference. We also computed multivariate models controlling for sex and age and found significant effects for the origin, age as well as for the interaction of origin and age of the MH professionals. The origin of the MH professionals had a considerably strong effect on the social distance towards persons with schizophrenia. The effect size was large and the model explained more than 20% of total variance in the social distance scale, which is high.

We also examined the associations between origin of MH professionals and their attitudes towards the acceptance of side effects in the psychopharmacological treatment of persons with schizophrenia. Except for drug dependence, we found that Swiss mental health professionals reported consistently more acceptance than their Brazilian colleagues. In the multivariate model we found a modest significant effect for origin and a weak significant effect of sex and the interaction of age and sex. The effect size was small and the overall model accordingly only explained 2% of total variance, suggesting that factors other than origin, sex and age contribute to the attitudes towards side effects of psychopharmacological treatment.

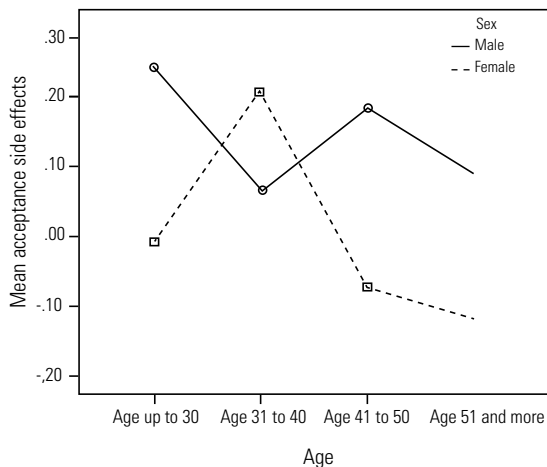
Other studies assessed stigma from a transcultural perspective, e.g.<sup>21</sup>, but only few of them evaluated stigma towards individuals with schizophrenia in such distinct socio-cultural backgrounds. One recent study compared samples of pharmacy students in Australia, Belgium, Estonia, Finland, India, and Latvia<sup>22</sup>. The results showed that the extent of stigmatizing attitudes was similar across countries, although students from India reported the least social distance. Another study that examined socio-culturally diverse countries using general population samples reported results similar to those provided

**Table 3.** Multivariate analyses of social distance and acceptance of side effects of psychopharmacological treatment: effects of origin, age, and sex of the mental health professionals

			Mean (SE)	F (df)	Sig.
<b>Social distance</b>					
	Origin	Switzerland (N = 365) Brazil (N = 1587)	0.915 (0.055) -0.221 (0.023)	366.980 (1)	0.000
	Age	≤ 30 (N = 388) 31-40 (N = 570) 41-50 (N = 463) > 50 (N = 531)	0.225 (0.073) 0.322 (0.045) 0.345 (0.049) 0.496 (0.066)	2.745 (3)	0.042
	Sex	Male (N = 981) Female (N = 971)	0.318 (0.047) 0.376 (0.036)	0.981 (1)	0.322
	Origin*Age			2.830 (3)	0.037
	Origin*Sex			0.659 (1)	0.417
	Age*Sex			0.733 (3)	0.532
	Origin*Age*Sex			1.260 (3)	0.287
<b>Side effects</b>					
	Origin	Switzerland (N = 354) Brazil (N = 1524)	0.185 (0.062) -0.039 (0.026)	11.153 (1)	0.001
	Age	≤ 30 (N = 372) 31-40 (N = 548) 41-50 (N = 446) > 50 (N = 512)	0.118 (0.085) 0.135 (0.051) 0.055 (0.056) -0.014 (0.071)	4.761 (1)	0.029
	Sex	Male (N = 946) Female (N = 932)	0.147 (0.054) 0.000 (0.040)	0.981 (1)	0.322
	Origin*Age			0.606 (3)	0.611
	Origin*Sex			0.260 (1)	0.610
	Age*Sex			3.031 (3)	0.028
	Origin*Age*Sex			2.041 (3)	0.106



**Figure 1.** Interaction effect of origin and age in association with social distance against persons with schizophrenia.



**Figure 2.** Interaction effect of sex and age in association with acceptance of side effects of psychopharmacological treatment in persons with schizophrenia.

in the present study<sup>23</sup>. That is, individuals in the more developed country, i.e. Germany, showed a higher level of social distance from individuals with schizophrenia when compared to a population sample in Russia or Mongolia. The study conducted by Des Courtis *et al.*<sup>18</sup>, also comparing MH professionals from Switzerland and Brazil, although in a smaller and regional sample, found analogous results; MH professionals from Switzerland showed a higher level of stigma towards persons with a mental disorder.

Stigma is a multi-factorial construct and recent studies have tried to depict the complex influence that culture has on its manifestations<sup>24</sup>. Angermeyer and Schulze<sup>8</sup> have suggested that the influence of media on broadcasting crimes committed by mentally ill people in Germany increases social distance. The present study suggests that the other possible factors that could be put forward are ethnical diversity and socio-economic inequality. Indices of ethnical and cultural diversity for Brazil differ widely from those for Switzerland<sup>25</sup>. Furthermore, Gini coefficients of income inequality for both countries are also rather different (0.55 and 0.28 for Brazil and Switzerland,

respectively. A Gini coefficient of 0.0 denotes minimum inequality and a coefficient of 1.0 denotes maximum inequality according to the OECD). Those indices indicate that there is much more social inequality in Brazil with regards to social background, ethnic group or socio-economic status than there is in Switzerland, which is a rather homogenous society. However, one hypothesis could be, that Brazilians, accustomed to social diversity, are more tolerant and less socially distant from people distinct in appearance, behaviour or thinking such as persons with schizophrenia.

This hypothesis fits with the findings of the International Pilot Study about Schizophrenia, conducted more than 30 years ago, which compared the outcome of these patients in several countries with different socio-economic backgrounds<sup>26</sup>. A more favourable outcome was found in patients from developing countries, once placed in a social context both more heterogeneous and less competitive, they would be less stigmatized for their illness. However, this hypothesis has previously been challenged<sup>27</sup> and a growing body of evidence suggests that this axiom should be re-examined<sup>27</sup>. Other authors have emphasized the differential characteristics of cultures: they suggest that in Latin cultures the society is more protective and supporting than in Anglo-American cultures and thus less stigmatizing, which may also improve the course of schizophrenia<sup>28,29</sup>. A review about cultural influences has been provided by Bhugra<sup>30</sup>.

In addition to taking the society's homogeneity issue into account, willingness to control psychotic symptoms would be very desirable in Switzerland, thereby increasing MH professionals' tolerance towards side effects. The only "side effect" not tolerable was drug addiction, possibly a consequence of the Swiss professionals' critical attitudes towards Switzerland's harm reduction policy for drugs. Switzerland, and especially the urban area of Zurich, suffered from the waste open drug scenes that developed in the early 1980s and in 1991 the government started a heroin substitution programme for drug addicts covered by the mandatory health insurance<sup>31</sup>. However, all in all MH professionals from Switzerland and Brazil estimated the acceptance of side effects in the long term rather deprecatingly. That finding coincides with MH professionals' personal reluctance to take antipsychotics themselves in the case of a psychotic disorder<sup>32</sup> or with the negative perception of psychopharmacological treatment in general<sup>33,34</sup>. Interestingly, such distrust against psychotropic treatment closely corresponds with the negative picture drawn by newspaper reports<sup>35,36</sup>.

Minimum effects have been reported for age and sex variables, with age showing a slight correlation with greater social distance, possibly reflecting the fact that older professionals' training was done before stigma became a main issue in mental health policies. Generally, men were shown to tolerate longer-term side effects than women, possibly because of a tougher attitude towards individuals with schizophrenia. This relationship was only inverted in the 31-40 years age group – it has been hypothesized that female mental health professionals in childbearing age are more willing to medicate these patients because of feelings of insecurity or fear of physical aggression. Furthermore, other authors have posited that the higher acceptance of enduring side effects reported by Swiss MH professionals might also be related to the more sophisticated medicaments administered – i. e. second generation antipsychotic drugs, which are more frequently used in Switzerland<sup>18</sup>.

Our study is subject to three major limitations. First, the two samples were not quite comparable as regards sample procedure and composition. The frequency of different types of MH professions as described in methods is not equally distributed across the Swiss and Brazilian samples, in particular, the percentage of psychiatrists and attendants: 88.8% and 0.7%, respectively, for the Brazilian sample versus 17.5% and 62.7%, respectively, for the Swiss sample. Adjustment for professional category was not possible, for instance because of few case numbers in cells of combined categories of profession and certain age groups. However, as reported in previous studies using the same data of MH professionals in Switzerland, psychiatrists show significantly higher levels of social distance<sup>11</sup> or negative stereotypes<sup>10</sup>

against mentally ill people than other professionals. Thus, if the percentage of psychiatrists in the Swiss sample had been similar to the percentage in the Brazilian sample, it would even have increased the effects of origin found in the present study. Second, the Swiss data of the social distance scale had to be recoded to match the Brazilian data. We chose to equally match the values as described in methods. Nevertheless, analyses conducted using a conservative recoding approach (matching the values 1 and 2 with the value 1, the values 3 and 4 with the value 2 and only the value 5 of the 5-point scale with the 3 of the 3-point scale) also yielded the same correlations in slightly different proportions, but still indicated considerably higher levels of social distance in Swiss professionals. Third, the Swiss data were collected between April 2003 and April 2004. In contrast, the Brazilian data were assessed in November 2009. Although the time span between the two samples is relatively short, we cannot exclude that it may have biased our results.

In conclusion, our study suggests that cultural as well as socio-economic factors may play a major role in modulating stigma manifestations towards individuals with schizophrenia. Future directions should include more research on transcultural related topics to determine how different societal aspects may influence stigma, including the extent and the modus operandi of each contribution<sup>37</sup>. These issues are crucial to the understanding of stigma as well as to the launch of worldwide anti-stigma initiatives.

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