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## Experiencing discrimination mediates the relationship between victimization and social withdrawal in patients suffering from a severe mental illness: A cross-sectional study

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### ABSTRACT

Psychiatric patients are often victims of crime and discrimination and are often socially withdrawn. This has negative consequences for their health and recovery. We examined whether such discrimination mediates the association between victimization and social withdrawal, and whether these associations differ between men and women. We also determined the prevalence of social withdrawal and the discrimination experienced by patients suffering from a severe mental illness. This study is embedded in the Victimization in Psychiatric Patients study. Information on discrimination, social withdrawal and victimization was obtained using structured self-report questionnaires (N = 949). We reported the 12-month prevalence of these phenomena and used path analysis to estimate the direct path between personal and property victimization and social withdrawal, and the indirect path through the discrimination experienced. The impact of gender was assessed by testing interaction terms. Social withdrawal was reported by 20.6% (95%CI 18.1–23.2) of participants, and being discriminated against in the past 12 months by 75.3% (95%CI: 72.6–78.0%). While crime victimization had no direct effects on social withdrawal, personal crime victimization (B = 0.47; 95%CI 0.25–0.72; p < 0.001) and property crime victimization (B = 0.65; 95%CI 0.42–0.93; p < 0.001) had significant indirect effects on social withdrawal, which were mediated by the discrimination experienced. In men we found a direct negative effect of property crime on social withdrawal (B = -0.68; 95%CI: -1.21 to -0.11, p = 0.014). We conclude that personal and property victimization, for both men and women, was associated with higher levels of social withdrawal, and this was fully mediated by the discrimination experienced.

### 1. Introduction

People suffering from severe mental illness (SMI) experience social withdrawal (Wang et al., 2017), discrimination (Lasalvia et al., 2013), and victimization (Kamperman et al., 2014) more often than people in the general population. Apart from this, these vulnerabilities may also interact, possibly increasing its negative effects on SMI patients. Social withdrawal can be defined as the structural absence of social

interactions, contacts and relationships on an individual level (i.e., with family, friends or neighbors), or on a broader, societal level (Institute of Medicine Division of Health and Disease, 1992). Its potential negative consequences for a persons' health include not receiving proper treatment, and exacerbation of mental health symptoms. Its potential negative consequences for a persons' position in society include social marginalization and loss of income (Lasalvia et al., 2013; Sharac et al., 2010; Vogel et al., 2010).

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Previous research on the experience of discrimination suggests that patients suffering from SMI who often experience discrimination also have a high degree of social withdrawal (Corrigan and Rao, 2012; Evans-Lacko et al., 2012; Quinn et al., 2015; Vogel et al., 2010), which has been proposed to lead to a state of social defeat and the “why try” effect – repeated experiences that reduce motivation, self-esteem and self-efficacy (Corrigan et al., 2009), due to which they may engage less and less with their community and end up with reduced social capital (Zoppei et al., 2014). However, there is some evidence that the degree of social withdrawal may also be modulated by gender, in that males suffering from SMI tend to withdraw more from society more than their female counterparts (Judd et al., 2007; Vogel et al., 2007).

Recently, crime victimization has been proposed to be a serious risk factor for more severe discrimination and social withdrawal (Horsse- lenberg et al., 2016; Overstreet and Quinn, 2013). This association is troubling, as people suffering from SMI have a markedly higher risk of falling victim to crimes such as violent threats, physical assault, vandalism, and sexual harassment and assault (Kamperman et al., 2014). Taken together, this varied evidence suggests that victimization in people suffering from SMI may cause them to experience more severe discrimination, which in turn may contribute to a higher degree of social withdrawal, or vice versa. However, there is no research literature on the possible associations between victimization, discrimination and social withdrawal in people suffering from SMI and whether any such associations are similar for men and women. More knowledge on this subject may help identify any pathways that lead to social withdrawal in this population, and to devise appropriate prevention and intervention strategies.

### 1.1. Aims

In this cross-sectional study we assessed the prevalence of social withdrawal and discrimination experienced by a large, population-based group of patients suffering from SMI. We also sought to examine the pathways through which recent personal or property crime victimization, might result in social withdrawal. We hypothesized that experiencing discrimination may play a mediating role in the association between crime victimization and social withdrawal, and that this association may differ between men and women (World Health Organization,).

## 2. Methods

### 2.1. Participants

Participants in this study were adult (18–65 years) outpatients suffering from SMI, which was defined as having been diagnosed with a chronic ( $\geq$ two years) psychotic, bipolar or major depressive disorder according to the DSM-IV-TR criteria. We excluded patients with a psycho-organic disorder, insufficient command of the Dutch language, or patients whose psychiatric condition prevented them from answering study questions or giving consent.

### 2.2. Procedure

Cross-validation of the inclusion and exclusion criteria of 3336 randomly selected patients with their primary physician resulted in an eligible sample of 2572 patients, all of whom were invited to participate. A face-to-face interview was scheduled after informed consent was obtained. The interview consisted of questions about victimization, discrimination, self-stigma, and related topics.

A total of 949 patients had complete data on social withdrawal, discrimination experienced and victimization, and were included in the analysis. Appendix Fig. 1 shows a data-acquisition flow-chart. A fully detailed description is provided elsewhere (Kamperman et al., 2014).

## 3. Instruments

### 3.1. Social withdrawal

To assess social withdrawal in the context of self-stigmatization, we used the social-withdrawal subscale from the Internalized Stigma of Mental Illness Scale (ISMI) (Ritsher and Phelan, 2004), which consists of six statements, such as “I avoid getting close to people who don’t have a mental illness to avoid rejection” and “I avoid social events to not embarrass my family and friends.” Each statement can be rated on a four-point Likert scale ranging from 1 “strongly disagree” to 4 “strongly agree.” The sum score can range from 6 to 24. Higher scores indicate higher degrees of social withdrawal (Ritsher et al., 2003; Ritsher and Phelan, 2004). In our study, the Cronbach’s alpha of the social withdrawal scale is 0.79. For the purpose of estimating the prevalence of social withdrawal, we dichotomized the subscale score into the presence or absence of social withdrawal. In accordance with previous studies, we used a cut-off score of  $>2.5$  as mean item score per subscale to indicate the presence of social withdrawal (Ritsher et al., 2003; Ritsher and Phelan, 2004; West et al., 2011).

### 3.2. Discrimination

The Discrimination and Stigma Scale DISC-12 (Brohan et al., 2013) is a frequently used questionnaire that was developed specifically for people suffering from mental illness. It is used to measure the 12-month incidence rate with which discrimination is experienced. In this study we used the 21-item subscale “Unfair Treatment,” to which we refer as “Experiencing Discrimination.” Each question asked participants on the extent to which they were unfairly treated by others in aspects of daily life such as work, marriage, parenting, housing, leisure, and religious activities; such questions include “Have you been treated unfairly in housing?” or “Have you been treated unfairly by your family?”. Each item was scored on a 4-point Likert scale ranging from 0 (not at all) to 3 (very often). The total score was the sum of all item scores. The possible range lay between 0 and 63. A score of one or higher per item was used as a cut-off between presence or absence of the type of discrimination assessed. The internal reliability of this subscale was good (Cronbach’s alpha = 0.82 in this set).

### 3.3. Recent victimization

The Dutch Crime and Victimization Survey (in Dutch: Integrale Veiligheidsmonitor, IVM) (Centraal bureau voor de Statistiek, 2009) was used to determine the twelve-month prevalence of crime victimization. Crimes were categorized into property crime (car theft and theft in general; vandalism; robbery; pick-pocketing; and burglary or attempted burglary), and personal crime (threats and physical and sexual assault). The IVM is the official instrument for assessing crime and safety in the Netherlands. Although traditional reliability and validity measures for the IVM scale (Centraal bureau voor de Statistiek, 2009) are unavailable, more details about the survey can be found in the article by Vollaard and Koning (2009) and the results of this survey were in line with other studies based on similar data (Corman and Mocan, 2005; Klick and Tabarrok, 2005). The survey was successfully used in several studies by Dutch mental health patients (de Mooij et al., 2015; de Vries et al., 2019; Kamperman et al., 2014).

### 3.4. Statistical analysis

We report the prevalence rates of social withdrawal and discrimination and the accompanying 95% confidence intervals for the full sample, and for men and women separately for each of the variables. Differences between men and women were tested using univariable logistic regression models and reported using odd ratios and 95% confidence intervals. The alpha level was set at 0.05.

We used conditional process analysis to estimate the associations between crime victimization and social withdrawal (Hayes, 2018). For the purpose of this analysis, we used the continuous scores of the social withdrawal scale. The associations between victimization and social withdrawal were tested using a direct pathway and an indirect pathway, mediated by discrimination experienced (continuous score). We also hypothesized that gender had a moderating effect on the direct and/or indirect pathway to social withdrawal.

To conduct the analyses, we used the R package “mediate” (version 4.5 (Tingley et al., 2014)). Quasi-Bayesian simulations were used to estimate standard errors and the p-values of mediation effects ( $n = 500$ ). To obtain robust estimates in these simulations, we used heteroscedasticity-consistent standard errors. We report direct and indirect effects obtained from the path analysis. We report unstandardized (B) and standardized ( $\beta$ ) regression coefficients, and their 95% confidence intervals. Moderation was tested by including interaction terms in the indirect or direct regression pathway.

#### 4. Results

Table 1 shows the characteristics of all respondents, nearly a third of whom were female. The average age was 44.7 years. Nearly a two-third were Dutch, and over three-quarters had been diagnosed on the basis of the DSM-IV with a disorder in the psychotic spectrum. Other disorders included bipolar disorders, and severe depression and anxiety disorders. Only one in four respondents were in a committed relationship. Eighty-five percent of respondents were unemployed, which was in line with the Netherlands' total SMI population (Delespaul, 2013; Kortrijk et al., 2019).

##### 4.1. Prevalence rates of social withdrawal and experiencing discrimination

As Table 2 shows, 20.6% of all participants (95%CI 18.1–23.2) scored higher than 2.5 points on the social withdrawal scale and therefore had higher degrees of social withdrawal. Women and men reported similar degrees of social withdrawal (OR = 0.9, 95%CI 0.7–1.3). Likewise, the median total score of the social withdrawal subscale was 12 (IQR 9–15), which was identical for men and women.

76.3% of the participants (95%CI: 72.6–78.0) reported one or more act of unfair treatment. Appendix Table 1 and Appendix Fig. 2 show the prevalence per discriminatory event. The most prevalent forms of discrimination – which had been experienced by over one in three participants – were being avoided or shunned (38.1%, 95%CI: 35.1–41.2); unfair treatment by family members (37.9%, 95%CI: 34.8–41.0); and discrimination that occurred in the process of making or

keeping friends (31.5%, 95%CI: 28.6–34.5). Men and women alike also reported that these categories of discrimination accounted for the highest number of discriminatory incidents (Appendix Fig. 3. Less common discriminatory events included unfair treatment with regard to welfare benefits and the legal issues these involved (7.2, 95%CI: 5.5–8.8); starting a family (5.6%, 95%CI: 4.1–7.0); and educational choices (5.3%, 95%CI: 3.8–6.7). Although the overall prevalence of experiences of discrimination was similar in men and women, there were also some gender differences. As Appendix Fig. 2 shows, women experienced significantly more discrimination with regard to feeling unfairly treated by their family members (46%) than men did (33%); felt more scrutinized in their roles as parents than men did; and experienced more unfair treatment with regard to somatic care. In a finding that did not reach significance, they also experienced a wider range of discriminatory acts than men did: where most men reported discrimination with regard to 2–3 aspects of life, women reported it for 6–10 aspects of life. Thus, even though equal proportions of men and women reported discrimination, women appeared to report discrimination over a wider range of life aspects, and with higher incident frequency (see Appendix Figs. 2–4).

##### 4.2. Victimization

Approximately one in five patients had been victims of a personal crime in the past year (19.1%, 95%CI 16.6–21.6). Property-crime victimization was more prevalent, affecting more than one in four patients per year (28.0%, 95%CI 25.2–30.9). Women reported a statistically non-significant higher average percentage rate of being a victim of personal violence (OR = 1.2, 95%CI 0.8–1.6), men reported a non-significant higher percentage rate of being a victim of property crime (OR = 0.9, 95% CI 0.7–1.2). Additional details on victimization prevalence and incidence in this sample can be found in Kamperman et al. (2014).

##### 4.3. Mediation analysis

Before testing for mediation, we started our analyses with a univariate linear model to check whether personal and property-crime victimization were associated with social withdrawal. These zero-order effects were significant for personal crime victimization ( $B = 0.65$ , 95%CI = 0.01, 1.29,  $p = 0.048$ ), but not for property-crime victimization (see Appendix Table 2). Next, both crime-victimization categories were included simultaneously in a multivariable linear model, which indicted no significant results at the 0.05 alpha level. The mediation model was then produced by including experiencing discrimination as a mediating variable, thus creating our final path analysis (Table 3). For the structure and individual coefficients of the path analysis, see Fig. 2. For standardized effects, see Appendix Fig. 5. For all univariable coefficient values, Appendix Table 2. We found mediating effects on social withdrawal through experiencing discrimination for both personal crime victimization (indirect effect  $B = 0.47$ ; 95%CI = 0.25, 0.72;  $p < 0.001$ ) and property-crime victimization (indirect effect  $B = 0.65$ ; 95%CI = 0.42, 0.93;  $p < 0.001$ ). With regard to personal violence, after adjustment for experiencing discrimination and social withdrawal, we found no direct effect between victimization and social withdrawal. However, with regard to property crime we found a significant negative direct effect between victimization and social withdrawal (direct effect  $B = -0.68$ ; 95%CI =  $-1.21$ ,  $-0.11$ ;  $p = 0.014$ ). In Fig. 1, the coefficients between the individual variables show a significant effect of both personal and property victimization on experiencing discrimination (B personal victimization = 2.69, B property victimization = 3.68). Thus, if victimization is present, it is associated with a 2.7–3.7 point increase on the scale sum score for discrimination. The coefficient for discrimination on social withdrawal was 0.17, which is interpreted as a 0.17 increase in the social withdrawal score for every additional point on the discrimination scale.

**Table 1**  
Characteristics of the respondents (N = 949).

	N (%)
Gender	
Male	604 (63.6)
Age (m;sd)	44.7 (10.5)
Ethnicity	
Dutch	582 (61.3)
Other	367 (38.7)
Diagnosis	
Psychotic disorder	735 (77.4)
Other	214 (22.6)
Marital status	
Single	712 (75.0)
Married/Committed relationship	237 (25.0)
Employment status	
Unemployed	811 (85.5)
Employed	138 (14.5)

m: mean, sd: standard deviation, \*such as: bipolar disorder, major depression, personality disorder, anxiety disorders.

**Table 2**

Twelve-month prevalence of social withdrawal, discrimination and victimization in the full sample (stratified for gender).

	N	Full sample (N = 949) % (95%CI)	Men (N = 604) % (95%CI)	Women (N = 345) % (95%CI)	Men (ref) vs women OR (95%CI)
Social withdrawal*	196	20.6 (18.1–23.2)	21.0 (17.8–24.3)	20.0 (15.8–24.2)	0.9 (0.7–1.3)
Discrimination**	715	75.3 (72.6–78.0)	74.0 (70.5–77.5)	77.7 (73.3–82.1)	1.2 (0.9–1.7)
Victim of personal violence	181	19.1 (16.6–21.6)	18.2 (15.1–21.3)	20.6 (16.3–24.8)	1.2 (0.8–1.6)
Victim of property crime	266	28.0 (25.2–30.9)	28.1 (24.6–31.7)	26.9 (22.3–31.6)	0.9 (0.7–1.2)

CI: confidence interval; OR: odds ratio; Ref; reference group.

\*presence of social withdrawal as represented by a mean item score of 2.5 or higher.

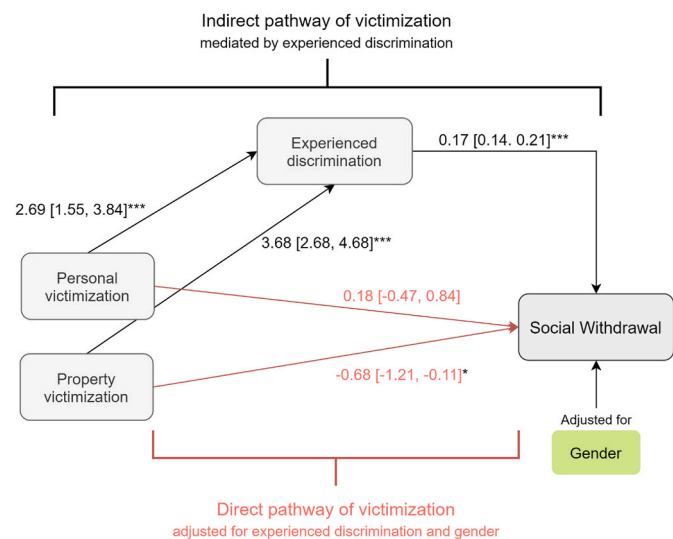
\*\*presence of any type of discrimination as represented by a score of 1 or higher on one or more items.

**Table 3**

Indirect and direct effects of personal and property victimization on social withdrawal via experiencing discrimination.

	Estimate	95% CI Lower	Upper	p-value
<b>Personal victimization</b>				
Indirect effect	0.47	0.25	0.72	<.001**
Direct effect	0.18	-0.47	0.84	.586
Total Effect	0.65	-0.01	1.30	.056
<b>Property victimization</b>				
Indirect effect	0.65	0.42	0.93	<.001**
Direct effect	-0.68	-1.21	-0.11	.014*
Total Effect	-0.02	-0.61	0.55	.912

CI: confidence interval, \*p = significant at the <0.05 level, \*\*p = significant at the <0.001 level.



**Fig. 1.** Path analysis of the effects (direct and indirect [95%CI]) of victimization on social withdrawal. To retain interpretability of terms, coefficients were reported before the addition of gender as an interaction term. Statistically significant effects flagged with \*. \*p < 0.05, \*\*\*p < 0.001.

The standardized coefficients in the path analysis were 0.15 (0.08, 0.12; p < 0.001) and 0.22 (0.17, 0.29; p < 0.001) for the indirect pathway between personal and property victimization and experienced discrimination and 1.28 (1.03, 1.53; p < 0.001) for the pathway between experienced discrimination and social withdrawal (see Appendix Fig. 5). The standardized coefficients in the direct pathway between personal and property victimization and social withdrawal showed a non-significant coefficient of 0.08 (-0.19, 0.40; p = >0.05) for the pathway between personal victimization and social withdrawal and a significant coefficient of -0.32 (-0.56, -0.08; p < 0.05) for the pathway between property victimization and social withdrawal. These standardized effects (see Appendix Fig. 5) showed that an absolute 0.17 point increase on the social withdrawal scale represented a large effect

(standardized effect = 1.28). In fact, the association between experienced discrimination and social withdrawal was the largest effect included in this model (1.28 [1.03, 1.53]; p < 0.001) (Appendix Fig. 5).

As a final step, a formal moderation test was performed by including gender as an interaction term with the victimization variables or the experienced discrimination variable in a stepwise entry fashion. One term was found to be significant: an interaction between gender and the direct association between property victimization and social withdrawal (B = 1.10; 95%CI = -0.01, 2.21; p = 0.049). Probing the interaction via effect plots revealed that male victims of property crime were estimated to suffer from less social withdrawal (predicted mean score of 11.27; SE = 0.30) than men without a recent property crime (12.34; SE = 0.19). No such difference was found in women (see Appendix Fig. 6).

### 5. Discussion

In this study, in a nation-wide sample of patients suffering from SMI, we found that over 20% of the respondents reported a high degree of social withdrawal. Seventy-five percent of the total sample reported having experienced discrimination with regard to at least one aspect of their daily life during the past 12 months. Most people who had experienced discrimination and suffered from SMI, had experienced this in the context of family or friends. One in five reported discrimination regarding more than five different aspects of life within the past year.

We also found that the experience of being discriminated was an important mediating factor between victimization and social withdrawal. In specific terms, participants who were victim of a crime reported that they experienced more discrimination, which, in turn, was associated with a higher level of social withdrawal. In the context solely of personal crime victimization, we found a positive association between victimization and social withdrawal. Using a path model we found that for property victimization, a significant effect emerged only when the total effect was partitioned into a direct and indirect effect. The direct pathway had a negative association with social withdrawal, and the indirect pathway had a positive association with social withdrawal (Fig. 1, Table 3). This effect could perhaps be explained by the concept that people who are more socially active also have more social contacts and therefore the chance of being a victim of property crime is increased. In addition, people suffering from mental illness can also be more vulnerable compared to the general population could more easily be exploited. The effect that being a victim of a property crime does not have a great effect on behavior, in this case social withdrawal, is also seen by Janssen et al. (2020). Janssen et al. showed in their study that victims of property crime do not more often show avoidance behavior or have less trust in the people surrounding them. In our sample, investigation of gender differences of the direct effect showed that only men had social withdrawal in relation to victimization of property crime. The fact that we see a difference between genders could perhaps be explained by the difference in overall psychopathology in men and women, women more often cope with internalizing problems whereas men more often cope with externalizing problems (Nolen-Hoeksema, 2012).



Our study extends previous research by showing a fully mediated relationship when experiencing discrimination is included as a mediator instead of psychiatric symptomatology. Earlier research found only a direct association between social withdrawal and victimization when psychiatric illness was included as a mediator (Horselsenberg et al., 2016). Some perspective on how this indirect effect operates can be provided by considering the concept of social capital, which indicates the quality and quantity of social relationships within a community, provides some perspective into how this indirect effect operates (Ehsan and De Silva, 2015). After having been victimized, people become sensitive to discrimination, which makes them more at risk to sever important relations to the community and vice versa (Zoppi et al., 2014). This pathway is of particular concern, as the literature on social capital has reported adverse physical (Sundquist et al., 2006) and mental health (Lindstrom and Mohseni, 2009) outcomes after such withdrawals from society. As a range of policy or healthcare-provider interventions have been developed to manage discrimination and social withdrawal (Gronholm et al., 2017), the current results provide a viable target. That is by reducing the experience of discrimination, a pathway between victimization and social withdrawal can be disrupted. In our study we found a significant association between personal and property victimization and experienced discrimination, which is in line with previous research (Harris et al., 2020). The current data does not directly offer an explanation for this result. We hypothesize that the coping mechanism of some SMI patients in stressful events such as victimization of a crime could be ineffective. Previous research found that seeking social support and having a social support system can be an effective way to cope with stress (Foster, 2000; Horwitz et al., 2018; Macdonald et al., 1998) and that disengagement coping could lead to more symptoms and stress (Calvete et al., 2007; Horwitz et al., 2018). Our theory is that if a SMI patient is a victim of a crime and reaches out for help, they could be faced with discrimination such as being ridiculed, not being taken seriously and face a ‘victim blaming’ mentality. This could then plain the increase in experienced discrimination.

The association between discrimination and different types of social withdrawal has been found in previous studies as well (Clement et al., 2015). Specifically, Clement et al. (2015) found an association between discrimination experiences and low engagement with mental health services. This association supports the theory of the “why try” effect, which states that the more a person suffering from SMI experiences discrimination, the more likely feelings of defeat are to emerge, possibly leading to withdrawal from society and mental healthcare providers (Corrigan et al., 2009). The same association may also support our theory that assertive outreaching mental healthcare provides social support for victims of a crime and helps to prevent social withdrawal.

With a prevalence of 20%, social withdrawal or isolation was common in our SMI sample. Even though this prevalence was high, Ritscher et al. and Asrat et al. found prevalences of up to 30 or even 40 percent (Asrat et al., 2018; Ritscher et al., 2003). While a possible explanation for the differences between prevalences is that Ritscher and Asrat (Asrat et al., 2018; Ritscher et al., 2003) used samples from smaller and more heterogeneous populations, it is also important to note that their studies were conducted in different countries with different mental healthcare systems. In the Netherlands, most SMI patients receive Flexible Assertive Community Treatment patient care (Drake et al., 1998). As this system ensures regular contact between patients and healthcare professionals, patients who withdraw from contact will be checked upon more often. In principle, this suggests that healthcare practitioners act as a social support buffer against withdrawing behavior (Pawlowski et al., 2008).

At 75.3%, the high prevalence of discrimination experienced lies within the range of earlier reports: Brohan et al. (2011) reported a prevalence of 71.6%, and Farrelly et al. (2014) a prevalence of 87%. In our sample, however, a higher number of SMI patients reported discrimination by people close to them, such as family and friends, whereas more respondents in the sample of Brohan et al. (2011) felt that they were discriminated against by people in the wider population, such

as security officers and mental health staff. In contrast, Farrelly et al. (2014) found that most participants experienced discrimination in marriage and divorce (83%), followed by “keeping a job” (63%).

Most of our respondents did not experience discrimination in the life areas of marriage or divorce (7.2%) or keeping a job (9.6%), thereby demonstrating substantial differences in the patterns of discrimination between studies. Although the studies by Brohan et al. and Farrelly et al. were both conducted in European countries, the former reported results in 13 different countries, showing significant differences in experiencing discrimination between them. The study by Farrelly et al. was conducted in the Southern part of London and had a smaller sample size than ours, which was both population-based and larger. While this may explain the difference in results, it should be noted that our sample included only a small percentage of patients who were either married or had a job; most were single or had no job. This might also explain the low percentage in our sample of patients who experienced discrimination in marriage and keeping a job.

Finally, while a third study, by Corker et al. (2013), reported high discrimination experienced in the same areas of life as in our results, it also reported a higher overall prevalence of discrimination (88% vs. 75% in our study). Taken together, the differences between all four studies illustrate that discrimination and its underlying patterns can vary dramatically across samples and countries.

## 6. Strengths and limitations

This study was conducted using a large, nationwide sample representative of the SMI population in the Netherlands – a design that is suitable for providing reliable prevalence estimates. Although it is less suited to studying causality and directionality of effects on the basis of the tested path analysis, previous research supports the theoretical assumptions of our path-analysis model: not only were crime victimization and the discrimination experienced interrelated in SMI patients, but both have also been demonstrated to be associated with social withdrawal (Horselsenberg et al., 2016; Overstreet and Quinn, 2013). Although in the current study we propose a model of mediating relationships, the fundamentally associational nature of the results cannot exclude competing explanations. As we do not have temporal information on whether victimization preceded social withdrawal or vice versa, the associations we found using our path analysis should be confirmed in longitudinal studies. A limitation regarding the generalizability of the study is that the people who participated in the study could be less socially withdrawn in comparison to the people who declined to participate. However, a related strength of the current study is that the interviews were relatively brief and participants received a reimbursement, which lowered the threshold to participate. Despite this potential limitation, we did not have a-priori reasons to expect that the associations examined in the present study could differ as a function of mean levels of social withdrawal.

To assess the presence and extent of social withdrawal, discrimination and victimization, we used specific cut-off scores and self-report questionnaires, which reflect subjective experience better than objective experience, and are therefore prone to bias. With regard to the victimization scale, we dealt with this issue by probing many details of each of the reported events, which included time, place, perpetrator, follow-up actions, such as reports to the police and other context details. By compelling participants to focus on the objective characteristics of the crime incident, this leads to more valid answers (Centraal bureau voor de Statistiek, 2009).

With regard to discrimination, we were interested in a broad range of discriminatory events related to the mental health status of our SMI participants. The presence and extent of discrimination are notoriously difficult to objectify, especially when discriminatory events in personal life – such as being shunned – are involved (Link et al., 2004; Thornicroft et al., 2009). It is equally difficult to assess whether the discriminatory events were driven by assumptions about a victim’s mental health status

(Link et al., 1999, 2004). We therefore chose a validated self-report instrument that is widely used to assess discrimination in psychiatric patient populations (Brohan et al., 2013; Corker et al., 2013). Although this enabled us comprehensively to capture the subjective experience of being discriminated against, we cannot meaningfully relate our findings to the existence of objective discriminatory acts. Similarly, we captured the internal, individual process of social withdrawal more than the outward public phenomenon, a dimension that could have been augmented by information from family members or healthcare providers. Finally, our finding of a strong association between experiencing discrimination and self-reported social withdrawal may indicate an underlying concept or mechanism (such as elevated levels of social fear or paranoia) that caused social withdrawal and feelings of being scrutinized by others (Linz and Sturm, 2013).

## 7. Conclusion and clinical implications

Social withdrawal and especially experiencing discrimination remain prevalent in SMI patients. This study also showed that victimization is associated with a higher level of social withdrawal, but only through the experience of being discriminated against for being mentally ill. Only then it could become an additional risk factor for social withdrawal. This implies that after being a victim, people become sensitive to discrimination which increases their risk to withdraw from society. The clinical implication is that interventions that aim to reduce discrimination or its impact, could also help to prevent or reverse the process of social withdrawal (Ruijne et al., 2021). Since most SMI patients feel discriminated against by family members and friends, the most effective way of limiting discrimination would be to invest in psycho-education, education on stigma and destigmatizing interventions and the involvement of a patient's direct support system. To report on causal relationships, more longitudinal studies are needed.

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## Conflicts of interest/Competing interests

The authors have no conflicts of interest to report.

## Ethics approval

The study was approved by the Medical Ethics Committee at Erasmus Medical Centre, Rotterdam (MEC-2010-232) and was conducted in accordance with the Declaration of Helsinki and its later amendments.

## Authors statement

All authors read the manuscript and agree with submission.

## Consent to participate

Written informed consent was obtained from all participants. We did not make use of the surrogate consent procedures. Compromised ability to consent, as determined by their primary clinician, was regarded as an exclusion criterion.

## Consent for publication

Written informed consent to publish data obtained during the study was obtained from all participants prior to data collection.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jpsychires.2022.01.018>.

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