Disability, health and quality of life among homeless women: a follow-up study

Abstract

The objectives of this study were: (1) to assess the prevalence of disability among homeless women; (2) to compare homeless women with and without a disability in key variables (e.g., sociodemographic, homelessness history, physical and mental health, etc.); (3) to examine paths between disability, perceived discrimination, mental health and quality of life. The methodology was a longitudinal study of homeless women in Madrid, who were followed for a 12-month period. There were 136 interviewees at baseline and 85 interviewees at follow-up. Prevalence of self-reported disability was 36.6% at baseline and 58.8% at follow-up. Approximately, in three out of four cases, disability existed prior to becoming homeless. Participants with a disability had been homeless for a longer time at baseline compared to participants without a disability. Moreover, they presented worse mental health, worse overall health status and lower health-related quality of life at follow-up. Mediation analyses showed that disability at baseline had direct effects on health-related quality of life, but also indirect effects mediated by perceived discrimination and mental health. This study shows the prominent prevalence rates of disability among homeless women in comparison with the general population, and the links to discrimination and negative health outcomes. These findings have significant implications for planning community services for homeless women.

Keywords: homeless women; disability; mental health; quality of life; discrimination

Public Policy Relevance Statements

Little is known about disability and health among homeless women. This longitudinal study showed a poor health status and a remarkable prevalence of disability and functional impairment among homeless women, significantly greater than women in the Spanish general population. A key policy priority should be to plan for the long-term care of homeless women with disabilities.

According to recent reports, about a quarter of the European Union’s population experiences long-standing limitations due to health problems, with women being overrepresented (Eurostat, 2018). Data suggest that people with long-standing disabling limitations are more exposed to the risk of poverty and social exclusion. For example, in 2018 about 28.7% of the EU population with disabling limitations were at risk of poverty or social exclusion, compared with 19.2% of those with no limitations (Eurostat, 2018).

Ending poverty in all its forms everywhere is the first goal of the United Nations Sustainable Development Agenda. Homelessness could be considered to be an extremely serious form of poverty and social exclusion (European Commission, 2009) and it disproportionately affects particular groups, including women, young people, migrants and refugees, and people with disabilities (Knox, 2017). A bidirectional link seems to exist between homelessness and disabilities (Stafford & Wood, 2017). People with disabilities are at increased risk of social exclusion and homelessness due to several factors, such as low incomes, limited engagement with the job market and poorer housing outcomes. Homelessness, in turn, can generate or exacerbate impairments, limitations and, subsequently, disabilities. In this sense, Beer et al. (2019) examined the risk of homelessness among the population with a disability in Australia. They concluded that people with a disability had a greater exposure to the risk of homelessness than the general population and they found differences in risk depending on the severity of restriction and the type of disability. They highlighted that individuals with schooling/employment restrictions, psychological and intellectual disabilities, or mental illnesses were especially vulnerable. Similarly, a study in Spain found that individuals with a disability had a higher probability of experiencing social exclusion (Belzunegui-Eraso et al., 2018). The highest risk of social exclusion was found among poor women with disabilities and severe limitations their ability to perform normal activities.

The literature has consistently established that homeless people show a high prevalence of long-standing physical and mental health problems (e.g. Beijer & Andréasson, 2009; Fazel et al., 2014; Fazel, Khosla et al., 2008; Guillén et al., 2020; Hodgson et al., 2013; Muñoz et al., 2006). A number of studies have also reported outstanding prevalence rates of disability among homeless people in comparison with the general population, although they have predominantly studied cognitive/intellectual disabilities (Durbin et al., 2018; Mercier & Picard, 2011; Nishio et al., 2015; Oakes & Davies, 2008; Stone et al., 2018; Van Straaten, et al., 2014; Van Straaten et al., 2017). Some of these studies highlight that homeless individuals with a disability seem to have specific characteristics and circumstances within the homeless population. For instance, a study by Panadero & Pérez-Lozao (2014) compared the situation and characteristics of homeless people with and without disabilities. The results showed that homeless people with disabilities presented a greater chronicity in homelessness, more difficulty in accessing employment and a greater vulnerability to accidents and victimisation. Another example is the study by Van Straaten et al. (2014), which specifically focused on intellectual disability among homeless people. They found that participants with intellectual disabilities had a higher mean age, and were more likely to be male and to have a lower level of education than participants without an intellectual disability.

Despite the fact that homeless people are likely to have a poor health status and high rates of disability, they often face obstacles in accessing specific services. Baggett, O’Connell et al. (2010) found that rates of unmet health-care needs were 6 to 10 times greater among homeless people in comparison to the general population. It has been suggested that these barriers might be somewhat linked to the stigma and discrimination usually experienced by homeless people. In a qualitative study among people living in poverty and with a chronic illness (Whittle et al., 2017), participants described how living with physical disability had led to them having interpersonal experiences of enacted and felt/anticipated stigma. A study by Skosireva et al. (2014) found that perceived discrimination in healthcare settings was common among homeless people with mental disorders. Among the participants, 30.4% perceived discrimination related to homelessness and 32.5% perceived discrimination related to mental illness.

Since experiences of stigma and discrimination are known to affect quality of life (Mak et al., 2007; Schmitt et al., 2014; Vázquez, 2016), this is a common variable studied in homelessness research. However, relatively few studies have examined its connections with disability, health and discrimination. In their literature review, Hubley et al. (2014) concluded that homeless people tend to have lower levels of subjective quality of life compared to the general population or housed individuals. They also noted that poorer mental health and substance abuse was associated with a lower subjective quality of life. Another study (Panadero et al., 2015) found that disabilities had a significant effect on perceived general health among homeless people, which was in turn associated with overall happiness.

Far too little attention has been paid to homeless women, although they are a particularly vulnerable subgroup among homeless people and they seem to have even worse health than homeless men do (Vázquez et al., 2019; Wolf et al., 2016). Fajardo-Bullón, et al. (2019) applied secondary analysis to cross-sectional data from a sample of homeless adults in Spain. They found that women were more likely to perceive poor health. Almost one fifth of the sample reported having an impairment leading to disability, mainly physical impairments, and it was a significant risk factor for perceived poor health. Unfortunately, these statistics were not disaggregated by sex.

To date, no longitudinal studies about disability among homeless women have been published. Research on disability and its correlation in homeless people is mainly comprised of cross-sectional designs, discrete sample sizes and reduced representation of homeless women, which makes the reality and particular needs of these women invisible. The present work attempts to tackle these gaps in the literature. The objectives of this longitudinal study were: 1) To assess disability and functioning among homeless women; 2) To compare homeless women with a disability with homeless women without a disability in key variables at baseline and 12-month follow-up; 3) To examine paths between disability, perceived discrimination, mental health, and health-related quality of life. We hypothesised that disability at baseline would be associated with higher perceived discrimination and worse mental health at follow up, which, in turn, would be associated with lower health related quality of life. We also expected that perceived discrimination and mental health would mediate the association between disability and health-related quality of life by demonstrating statistically significant indirect effect.

Method

Participants

The criteria for inclusion in the study were being a woman and meeting the criteria for belonging to one of the first three operational categories in the "European Typology on Homelessness and Housing Exclusion" (ETHOS): 1) People living in the streets or public spaces, without a shelter that can be defined as living quarters; 2) People in emergency accommodation (e.g., overnight shelter, low threshold shelter, etc.); 3) People in accommodation for the homeless, where the period of stay is intended to be short term (e.g., homeless hostel, temporary accommodation, transitional supported accommodation, etc.).

The sample consisted of 136 adult homeless women in Madrid (Spain), who had spent the night before the interview in a shelter or in a supervised accommodation for the homeless, on the street or in other places not initially designed for sleeping (abandoned buildings, basements, etc.). The main characteristics of the sample are shown in Table 1. Their mean age was 45.5 years old (SD = 11.37), and they were predominantly of Spanish origin (65.4%) and single (60.3%). Of the interviewees, 32.6% had completed primary education, 18.8% had completed secondary education, 8.7% had completed higher non-university studies and 17.4% had university higher education. The average time spent homeless was six years.

INSERT TABLE 1 ABOUT HERE

Eighty-five of the women interviewed at baseline were successfully contacted and interviewed 12 months after the initial assessment (retention rate=62.5%). Reasons for attrition included inability to locate the participant (n=32), refusal (n=13), death (n=4) and return to country of origin (n=2). In the follow-up interview, participants and non-participants were compared using their sociodemographic characteristics. There were no differences at baseline, with the exception of age (t (134) = -3.127, *p* = .002). Specifically, women who participated in the follow-up interview were older (*M* = 47.79, *SD* = 11.67) than the women who were lost to attrition (*M* = 41.69, *SD* = 9.82). No significant differences were found between participants in the follow-up interview and non-participants on total time in a homeless situation (t (124) = -0.003, *p* = .124), number of episodes (t (126) = -1.579, *p* = .117), age at first episode (t (127) = -1.138, *p*

= .257), disability (t (126) = -0.354, *p* = .724), quality of life (t (130) = 0.277, *p* = .782) nor mental health scores at baseline (t (117) = 0.505, *p* = .615).

INSERT TABLE 1 ABOUT HERE

Procedure

The research team established several contacts with administrations and institutions involved in the access to the sample, in order to explain the study to the stakeholders and seek their agreement. The homeless women were contacted on the street, in shelters for homeless people, and in other services caring for homeless people. Participants were recruited from sixteen different sites, mostly shelters for homeless people. The objectives of the research and how the data would be processed were explained to the participants. They were asked for their informed consent to carry out the face-to-face interview and to communicate with them via mobile phone, social site networks or third parties during the follow-up period. Participants were not paid for their involvement in the study.

Structured interviews were conducted at baseline and at 12-months follow-up. The first interview lasted between 45 and 80 minutes while the follow-up interview was shorter and lasted around 30-60 minutes, as it was focused on changes over the follow-up period. Interviewers had previous experience in field research with homeless people and were prepared to alleviate possible negative emotional reactions during the interview. Moreover, many centers had a psychologist in their professional teams ready to attend the women if necessary. Regular contacts were maintained with the participants during the 12-months follow-up period, with the collaboration of institutions and entities that work with homeless people in Madrid. This made possible to successfully track many of the participants, despite mobility and changes in their accommodation situation.

The study respected ethical standards for conducting research with human participants and all procedures were approved by the Complutense University of Madrid Ethics Committee (Ref. 2017/18-004).

Measures

Sociodemographic and homelessness characteristics. The interview collected information on sociodemographic variables (age, marital status, children, level of education, nationality, income, etc.) and homelessness characteristics, including length of homelessness, number of episodes, age of first episode and current living situation.

Disability. The interview collected information on self-reported disability based on the Survey of Social Integration and Health (National Statistics Institute, 2012). Moreover, functional disability was measured through a scale extracted from the European Health Interview Survey (2014). It comprises 5 items which assess the person’s level of difficulty in performing five basic activities of daily living (ADL): difficulty feeding oneself; difficulty getting in and out of a bed or chair; difficulty dressing and undressing; difficulty using toilets; difficulty bathing or showering. Each question has four types of response: 1= No difficulty; 2 = Some difficulty; 3 = A lot of difficulty; 4 = Unable to do it. In addition to obtaining the percentages of people with difficulties in each question, a total score was computed by adding the 5 items, with higher score indicating greater functional disability. The Cronbach’s alpha for this scale was good ($\alpha = .88$).

Mental health was assessed using the General Health Questionnaire (GHQ-28) (Goldberg & Hillier, 1979). This instrument is designed to assess mental health in community settings and contains 28 items divided into four subscales of 7 items each: somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. All items have a 4-point Likert scale and total score ranges from 0-84 (higher score indicate worse mental health). The Spanish version of the instrument has shown adequate psychometric properties (Goldberg, 1996). The Cronbach's alpha for our sample was very good (α = .94).

Perceived discrimination was a single item that measured whether the women had felt discriminated against since they had been in a homeless situation using a 4-point Likert scale (ranging from 1=Never, to 4= Constantly).

Health-related quality of life was assessed using the Eurqol-5D (EQ-5D) (Rabin & de Charro, 2001). This instrument enables respondents to classify their own health status into five dimensions (mobility, self-care, usual activities, pain/discomfort, anxiety/depression), according to three levels of severity (0 = No problems; 1 = Moderate problems; 2 = Severe problems). Greater score indicates lower quality of life. In addition, Eurqol-5D includes the EQ-VAS score which enables respondents to rate their own overall health status on a visual analogue scale between 0 (worst imaginable health state) and 100 (best imaginable health state). We used the Spanish version of the instrument which has proved to be feasible and valid for use in health interview surveys (Badia et al., 1998). The Cronbach's alpha for our sample was adequate (α = .74).

Smoking dependence was assessed using the Heaviness of Smoking Index (HSI) (Heatherton et al., 1991). This index consists of two questions using a 3-point Likert scale. Score ranges from 0-6 (higher score indicates more tobacco dependence). The Spanish version of the instrument (Becoña, 1994) has proven to be effective for assessing the dependence of smokers. The Cronbach's alpha for our sample was adequate (α = .72).

Hazardous drinking was assessed using the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993). This instrument consists of 10 items that examine the person's alcohol use, as well as the problems arising from it. The possible responses to each question are scored 0, 1, 2, 3 or 4, except for questions 9 and 10 which have possible responses of 0, 2 and 4. Score ranges from 0-40 (higher score indicates more alcohol misuse). The Spanish version of the instrument offers adequate psychometric properties (Rubio et al., 1998). The Cronbach's alpha for our sample was good (α = .83).

Drug abuse was examined using the Drug Abuse Screening Test (DAST-10) (Skinner, 1982). This questionnaire is designed to identify people engaging in problematic drug use. It consists of 10 dichotomous items related to aspects of substance abuse causes (excluding alcohol or tobacco), as well as the physical, psychological, and social complications that this causes. Score ranges from 0-10 (higher score indicates more drug misuse). The Spanish version of the instrument presents adequate psychometric properties (Pérez et al., 2010). The Cronbach's alpha for our sample was good (α = .78).

Data analysis

We used SPSS 25.0 for all statistical analysis. We ran descriptive statistics to characterise the main sociodemographic characteristics of the respondents, as well as the prevalence of disability and activities of daily living.

We compared women with a disability to women without a disability in key variables, using the Student-t test for independent samples for continuous variables and the Chi square statistic for the nominal variables. In addition, we performed the Mann–Whitney U test and the Chi square statistic to compare women whose disability existed prior to their homeless situation and women whose disability occurred later, due to small sample sizes in these subgroups.

Finally, we performed serial multiple mediation analysis using PROCESS macro for SPSS version 3.5 (Hayes, 2018). The mediation model was tested using model 6 with two mediators. All analyses were based on 10,000 bootstrapping samples with 95% confidence intervals. The independent variable was the presence of functional disability in activities of daily living at baseline. The outcome variable was health-related quality of life at follow-up. The first mediator was perceived discrimination at follow-up and the second mediator was mental health at follow-up. The direct and indirect effects were proved to be statistically significant if 95% bootstrap confidence intervals did not contain zero.

Results

Prevalence of disability

We found that 48 interviewees at baseline (36.6%) and 50 interviewees at follow-up (58.8%) reported having a disability. Concerning official recognition of disability, 34 and 36 interviewees were holders of this recognition at baseline and follow-up, respectively. Physical disabilities were the most prevalent (31 women), followed by mental health disabilities (19 women). Interestingly, 17 women who did not report having a disability at baseline, reported it at the 12-month follow-up.

Regarding functional disability in basic activities of daily living (ADL), the most prevalent difficulties at baseline were getting in and out of a bed or chair (17.8%), dressing and undressing (14.1%), and bathing or showering (14.1%). These rates were 20.0%, 22.4% and 20%, respectively, at follow-up.

In relation to the categorisation of participants according to the number of ADL with limitations score, 73.4% of the participants did not have any limitations at baseline. However, 26.6% presented limitations in one or more ADL; within this percentage, 2.3% presented limitations for all the five ADL measured in the study. Surprisingly, there was no significant correlation between functional disability and age ($r = .12$, $p = .17$).

Comparison of homeless women with a disability and homeless women without a disability

Sociodemographic characteristics and homelessness history

No significant differences were found between interviewees with and without a disability (see Table 2), with the exception of duration of homelessness. Duration of homelessness was significantly longer among women with a disability: 108.98 months in comparison to 57.27 months (t (63.805) = -2.871, $p = .005$).

INSERT TABLE 2 ABOUT HERE

At baseline interview, 33 women (68.7%) reported that their disability existed prior to them becoming homeless while 15 women (31.3%) reported that their disability occurred after they became homeless.

Health, substance misuse and quality of life

No significant differences were found in terms of mental health, substance misuse and overall health status at baseline between interviewees with and without a disability (see Table 3). However, interviewees with a disability presented worse mental health (t (77) = -3.461, $p < .001$) and worse overall health status (t (83) = 2.247, $p < .05$) at the follow-up, in comparison with interviewees without a disability.

Turning now to health-related quality of life (EQ-5D), Table 5 shows that the most prevalent difficulties were present in the dimensions of mobility, pain/discomfort, and anxiety/depression. Although interviewees with a disability presented more difficulties in all the dimensions at baseline, these differences were only significant in mobility ($\chi^2(1, 131) = 11.114$, $p = .001$) and pain/discomfort ($\chi^2 (1, 130) = 5.755$, $p = .016$). At follow-up, differences between interviewees with and without a disability were significant in the five dimensions of health-related quality of life, as well as EQ-VAS score.

INSERT TABLE 3 ABOUT HERE

Mediation analysis predicting health-related quality of life

As shown in Figure 1, the presence of functional disability in ADL at baseline predicted higher perceived discrimination due to homelessness at follow-up (B = .70, p < 01.). However, the impact of functional disability on mental health was not significant (B = .30, $p = .287$). Higher perceived discrimination was significantly associated with worse mental health (B = .60, $p < .05$), and worse mental health was significantly associated with lower health-related quality of life (B = .54, $p < .001$). This model, controlling for age as a covariate, accounted for 57% of the variance in health-related quality of life ($F(4, 66) = 16.434$, $p < .001$).

INSERT FIGURE 1 ABOUT HERE

Turning now to the significance of the effects, the direct effect of functional disability on health-related quality of life was significant (B = .405, SE = 0.66; 95% CI [0.095, 2.714]). Concerning the indirect effects, Table 4 shows that the indirect effect of functional disability on health-related quality of life only through perceived discrimination was non-significant (zero is contained in the confidence interval), as was non-significant the indirect effect running only through mental health. As expected, the results supported that the indirect effect through both perceived discrimination and mental health was statistically significant (B = .475, SE = 0.22; 95% CI [0.095, 0.962]). Therefore, perceived discrimination and mental health were significant mediators of the relationship between functional disability and health-related quality of life. Functional disability reduced health-related quality of life by increasing perceived discrimination, which in turn worsened women's mental health, which in turn lowered their quality of life.

INSERT TABLE 4 ABOUT HERE

Discussion

The first objective in this longitudinal study was to describe disability and functioning among homeless women in Madrid (Spain). Results showed that 37% of participants reported having a disability, a prevalence that is almost twice that among women in the general Spanish population (National Statistics Institute, 2012). In three out of four cases, the disability existed before the woman became homeless. It is striking that such a large number of women with disabilities become homeless; it indicates serious gaps in the existing social protection system for people with disabilities.

Among participants with disabilities, 25% were holders of an official recognition certificate, a percentage approximately four times higher than that reported among women in the general Spanish population (Ministry of Health, Consumer Affairs, & Social Welfare, 2019). However, several participants who reported having a disability did not have official recognition of their disability status, so they likely face obstacles in accessing specific healthcare, social care and support services. Moreover, these findings reveal that even having an official disability certificate does not mean that women avoid experiencing homelessness, nor does it make it easier for them to escape homelessness.

Approximately one participant out of four reported difficulties in at least one ADL. The most frequently reported difficulties by women were getting in and out of a bed or chair, and dressing/undressing. Surprisingly, functional disability was not related to age. In fact, although the mean age of the sample was 45 years old, the level of difficulties in ADL was comparable to the level for Spanish women aged 65 years and over (National Statistics Institute, 2014). These results corroborate the fragility and extraordinary level of impairment existing among homeless women.

The second objective sought to compare participants with and without a disability in key variables. In terms of sociodemographic characteristics and homelessness history, women with a disability showed a significantly longer time spent homeless at baseline: 9 years vs. 5 years. This is a rather remarkable result, which confirms the connection between disability and a greater chronicity in homelessness. No significant differences in health, substance misuse and quality of life were found at baseline. However, participants with a disability presented significantly worse mental health, worse overall health status and lower quality of life at the 12-month follow-up compared to participants without a disability. These data indicate that the deterioration of homeless women with a disability may be greater and take place more quickly, indicating that they probably require intensive and specialised support services.

In terms of health-related quality of life specifically, women with a disability in our study reported a mean EQ-VAS score of 55.42, in comparison to 76.11 among women in the general population (Ministry of Health, Consumer Affairs, & Social Welfare, 2011). They also reported more problems in all dimensions (mobility, self-care, usual activities, pain/discomfort and anxiety/depression), showing percentages between two and four times higher than women in the general Spanish population. A study of homeless people in Stockholm by Sun et al. (2014) demonstrates different results in relation to the reported dimensions. While most problems reported by homeless women in their study were in the anxiety/depression dimension, most problems in our study were reported in the pain/discomfort dimension, which is also the most prevalent dimension in the general population (Ministry of Health, Consumer Affairs, & Social Welfare, 2011). The reduced number of homeless women in the study by Sun et al. (2014) may explain this discrepancy.

Finally, another significant finding is that the complex intersection of gender, disability and stigma has enduring negative consequences over time for homeless women. Deegan and Brooks (2018) have pointed out that women who have disabilities can be considered as a minority group experiencing multiple sources and forms of discrimination. Meta-analysis by Schmitt et al. (2014) also confirms that discrimination is likely to be more pervasive and severe for disadvantaged groups. Our mediation analysis corroborated that disability does have direct effects on health-related quality of life among homeless women, but also indirect effects mediated by perceived discrimination and mental health problems. According to Pascoe (2009), discriminatory experiences can influence health through the stress responses (physiological and psychological) that they produce. It is also possible that discrimination increases the risk of engaging in health behaviours that may reduce stress in the short term, but ultimately may increase risk to health.

Our results must be considered in light of certain limitations. Since attrition is one of the major methodological problems in longitudinal studies, it may have biased the results at the 12-month follow-up. In fact, women who participated in the follow-up interview were older than the women who were lost to attrition. Another limitation is that data are based on self-reported disability and standardised instruments. In future investigations, it would be interesting to use a global and comprehensive assessment of disability according to the International Classification of Functioning, Disability and Health (World Health Organization, 2001). Unfortunately, this was not feasible in the present study because of time restrictions.

In spite of these limitations, this study provides the first longitudinal assessment of disability among homeless women. It may help to understand its prevalence and correlations, as well as the evolution of those women who are more vulnerable due to a disability. Overall, the study confirms that disability is much more prevalent among homeless women that it is in the general population and that it is linked to discrimination and negative health outcomes. Moreover, our results corroborate the idea of disability as a clear risk factor for homelessness, but also support the idea that homelessness exacerbates existing disabilities and increases the likelihood that new disabilities may emerge. Understanding the characteristics and needs of homeless women with disabilities may be helpful for developing effective systems, services and support for them.

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Table 1

Characteristics of the sample of homeless women at baseline (N=136)

Characteristics	n	%
Age *Mean (SD)*	136	*M* = 45.50 years (11.37)
Marital status		
Single	82	60.3
Married / Unmarried couple	8	5.9
Separated / Divorced	39	28.7
Widow	7	5.1
Number of children		
0	53	39.0
1	30	22.1
2	26	19.1
3 or more	27	19.9
Nationality		
Spanish	89	65.4
Foreign	41	30.1
Both	6	4.4
Level of education completed		
No education	12	8.8
Incomplete primary education	17	12.5
Primary education (up to 14 years old)	45	33.1
Secondary education (up to 18 years old)	26	19.1
Non-university higher education	12	8.8
University higher education	24	17.6
Time in a homeless situation (combining all episodes) *Mean (SD)*	126	*M* = 75.12 months (90.94)

Table 2

Comparison of sociodemographic characteristics and homeless history among women with/without a disability

	Baseline				
	With a disability (n=48)		Without a disability (n=83)		
	%	n	%	n	Statistic
Age *M(SD)*	*M* = 47.06 (9.14)	48	*M* = 44.65 (12.54)	83	t = -1.265
Marital status					
Single	52.1	25	63.9	53	χ^2 =1.891
Married/Unmarried couple	6.3	3	6.0	5	
Other	41.7	20	30.1	25	
Has had children					
No	29.2	14	44.6	37	χ^2 =3.038
Yes	70.8	34	55.4	46	
Nationality					
Spanish (or both)	77.1	37	66.3	55	χ^2 = 1.702
Foreign	22.9	11	33.7	28	
Level of education completed					
< Secondary education	54.2	26	56.6	47	χ^2 =0.075
≥ Secondary education	45.8	22	43.4	36	
Time in a homeless situation (combining all episodes) *M(SD)*	*M* = 109.98 (105.52)	43	*M* = 57.27 (78.51)	79	t = -2.871**
Age became homeless for the first time *M(SD)*	*M* = 34.96 (13.49)	47	*M* = 38.09 (15.37)	77	t = 1.152

* p < .05 ** p < .01 *** p < .001

Table 3

Comparison of health, substance misuse and health-related quality of life among women with/without a disability

	Baseline (N=136)			Follow-up (N=85)		
	With a disability (n=48)	Without a disability (n=83)	Statistic	With a disability (n=50)	Without a disability (n=35)	Statistic
Mental health (GHQ score) (a)	*M* = 30.29	*M* = 30.13	t = -.045	*M* = 33.41	*M* = 20.45	t = -3.461***
Smoking dependence (HSI score) (b)	*M* = 2.53	*M* = 2.96	t = 1.032	*M* = 2.58	*M* = 2.32	t = -0.573
Hazardous drinking (AUDIT score) (c)	*M* = 3.31	*M* = 3.41	t = .083	*M* = 3.32	*M* = 2.69	t = -0.428
Drug abuse (DAST score) (d)	*M* = 1.35	*M* = 1.33	t = -.057	*M* = 0.56	*M* = 0.51	t = -0.114
Has problems in EQ-5D dimensions						
Mobility	62.5%	32.5%	χ^2=11.114***	58.0%	17.1%	χ^2=14.189***
Self-care	16.7%	8.4%	χ^2=2.033	24.0%	5.7%	χ^2=5.004*
Usual activities	25.0%	19.3%	χ^2=0.593	28.0%	5.7%	χ^2=6.692**
Pain/discomfort	79.2%	58.5%	χ^2=5.755*	72.0%	42.9%	χ^2=7.286**
Anxiety/depression	66.7%	56.1%	χ^2=1.409	58.0%	34.3%	χ^2= 4.637*
EQ-VAS score (e)	*M* = 55.42	*M* = 64.40	t = 1.881	*M* = 54.00	*M* = 67.14	t = 2.247*

* p < .05 ** p < .01 *** p < .001

Note. GHQ=General Health Questionnaire; HSI=Heaviness of Smoking Index; AUDIT = Alcohol Use Disorders Identification Test; DAST = Drug Abuse Screening Test; EQ-5D= Eurqol-5D; EQ-VAS score= EQ-5D Visual analogue scale score.

(a) Score ranging from 0-84 (higher score indicates worse mental health).
(b) Score ranging from 0-6 (higher score indicates more tobacco dependence).
(c) Score ranging from 0-40 (higher score indicates more alcohol misuse).
(d) Score ranging from 0-10 (higher score indicates more drug misuse).
(e) Score ranging from 0-100 (higher score indicates better overall health status).

Table 4

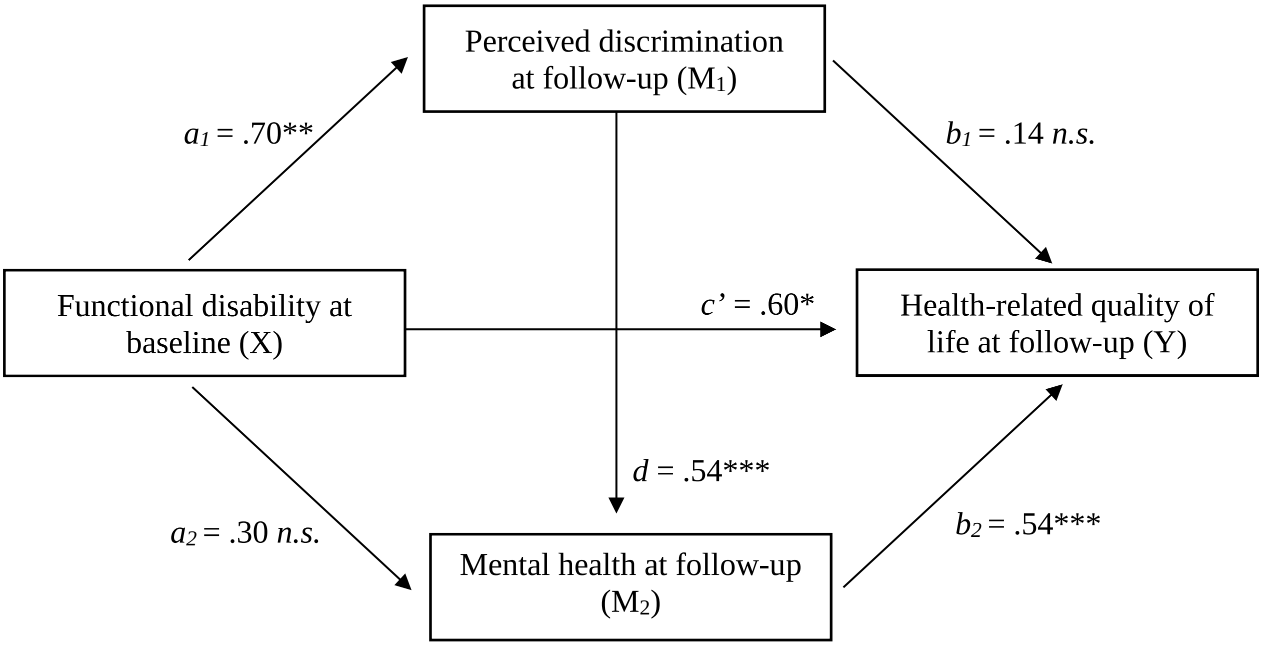
Indirect effects of functional disability at baseline on health-related quality of life at follow-up

	Indirect effect		95% bootstrap CI	
	B	*SE*	LL	UL
Functional disability at baseline → Perceived discrimination at follow-up → Health-related quality of life at follow-up	.234	.219	-.078	.768
Functional disability at baseline → Mental health at follow-up → Health-related quality of life at follow-up	.378	.317	-.247	1.004
Functional disability at baseline → Perceived discrimination at follow-up → Mental health at follow-up → Health-related quality of life at follow-up	.475*	.223	.095	.962

Note. CI= Confidence Interval. LL= Lower limit; UL = Upper limits.

Figure 1

Results from serial multiple mediation analysis predicting health-related quality of life at follow-up



* p < .05 ** p < .01 *** p < .001