

# The role of occupational meaningfulness and citizenship as mediators between occupational status and recovery: a cross-sectional study among residents with co-occurring problems

Nesse, Linda<sup>1</sup>; Aamodt, Geir<sup>1</sup>; Gonzalez, Marianne Thorsen<sup>2</sup>; Rowe, Michael<sup>3</sup>; Raanaas, Ruth Kjærsti<sup>1</sup>

<sup>1</sup>Department of Public Health Science- Norwegian University of Life Sciences

<sup>2</sup>Department of Nursing and Health Sciences - University of South-Eastern Norway

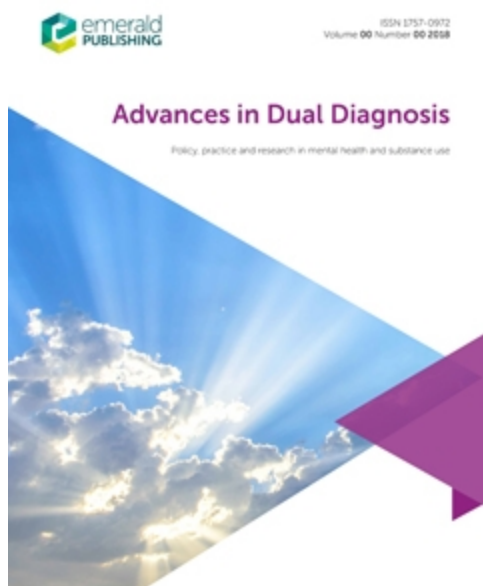
<sup>3</sup>Department of Psychiatry - Yale University School of Medicine, New Haven, Connecticut, USA

This is an Accepted Manuscript of an article published by Emerald Insight in *Advances in Dual Diagnosis* on May 7, 2021, available online:

<https://doi.org/10.1108/ADD-08-2020-0018>

Nesse, L., Aamodt, G., Gonzalez, M. T., Rowe, M., & Raanaas, R. K. (2021). The role of occupational meaningfulness and citizenship as mediators between occupational status and recovery: a cross-sectional study among residents with co-occurring problems. *Advances in Dual Diagnosis*, 14(3), 99-118. <https://doi.org/10.1108/ADD-08-2020-0018>

**This author accepted manuscript is deposited under a Creative Commons Attribution Non-commercial 4.0 International (CC BY-NC) licence. This means that anyone may distribute, adapt, and build upon the work for non-commercial purposes, subject to full attribution. If you wish to use this manuscript for commercial purposes, please contact [permissions@emerald.com](mailto:permissions@emerald.com)**



**The role of occupational meaningfulness and citizenship as mediators between occupational status and recovery: a cross-sectional study among residents with co-occurring problems**

Journal:	<i>Advances in Dual Diagnosis</i>
Manuscript ID	ADD-08-2020-0018.R1
Manuscript Type:	Research Paper
Keywords:	dual diagnosis, mental illness, substance abuse, meaningful activity, social inclusion, supported accomodation

**The role of occupational meaningfulness and citizenship as mediators  
between occupational status and recovery: a cross-sectional study among  
residents with co-occurring problems**

Advances in Dual Diagnosis

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

### Abstract

**Purpose.** Engaging in meaningful occupations and being included as full citizens of the community, is vital for human beings and may be of considerable relevance for recovery and quality of life. However, persons with co-occurring substance use and mental health problems experience extensive obstacles to engagement in occupations and citizenship. The relationship between objective measures of occupational status, and subjective experiences of occupational meaningfulness, citizenship, and recovery, is scarcely researched in the context of co-occurring problems. As such, the aims of the present study were 1) to examine associations between occupational status, occupational meaningfulness, citizenship, and recovery and quality of life, and 2) to examine the roles of occupational meaningfulness and citizenship as possible mediators between occupational status, and recovery and quality of life.

**Design/methodology/approach.** The study used a cross-sectional design with a sample of 104 residents at supported housing sites across six Norwegian cities.

**Findings.** Linear regression analyses indicated that occupational status was significantly associated with the citizenship domains caring for others and community participation, and with the quality of life measure positive affect. Occupational meaningfulness and citizenship were significantly associated with different domains of recovery and quality of life. Furthermore, mediation analyses showed that the relationship between occupational status, and recovery and quality of life, was mediated by caring for others and community participation.

**Originality.** The results suggest that emphasizing opportunities for occupational meaningfulness and citizenship in practice may have positive implications for recovery among persons with co-occurring problems.

1  
2  
3 *Keywords:* dual diagnosis, mental illness, substance abuse, meaningful activity,  
4 occupational justice, sense of belonging, social inclusion, supported accommodation  
5  
6  
7  
8  
9

### 10 **Background**

11  
12 Participating in meaningful occupations in everyday life, and being included as full  
13 citizens of the community, is vital for human beings (Wilcock, 2007). When major  
14 efforts to deinstitutionalize mental health services were initiated in a number of  
15 countries several decades ago, underpinned by humanistic values and attitudes, one  
16 main aim was to enable patients to become citizens of their respective communities  
17 (Fakhoury and Priebe, 2007). This brought forward a shift from long-term care in  
18 psychiatric hospitals to decentralized services in the local community, such as  
19 supported housing with access to support from health and social workers. However,  
20 it has been argued that attempts to ensure full inclusion have failed (Fakhoury and  
21 Priebe, 2007; Vervliet *et al.*, 2019; Ware *et al.*, 2007). Persons with co-occurring  
22 substance use and mental health problems (co-occurring problems) have, for  
23 instance, described experiencing social restrictions that hinder them from being  
24 treated as full citizens with equitable opportunities for engagement in meaningful  
25 occupations (Blank *et al.*, 2016; Blank *et al.*, 2015; Rowe *et al.*, 2001; Rowe *et al.*,  
26 2009). Interestingly, scholars have argued that engagement in everyday life is an  
27 important aspect of recovery, facilitated through connectedness to the community  
28 (Borg and Davidson, 2008; Borg and Kristiansen 2008; De Ruyscher *et al.*, 2017;  
29 Nordaunet and Sælør, 2018; Tew, 2013; Tew *et al.*, 2012). With this in mind, the  
30 present study aimed to examine possible relationships between meaningful  
31 occupations, citizenship, and recovery among residents with co-occurring problems  
32 in supported housing.  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

## THE ROLE OF OCCUPATIONAL MEANINGFULNESS AND CITIZENSHIP

4

1  
2  
3           *Recovery* can be described as a personal and social process of establishing  
4  
5 or reestablishing a good life (Deegan, 1988; Mezzina *et al.*, 2006; Topor *et al.*,  
6  
7 2011). It may involve different ways of seeking meaning, purpose, connection, and  
8  
9 fulfillment in everyday life despite substance use or mental health problems  
10  
11 (Anthony, 1993; Borg and Davidson, 2008; Davidson *et al.*, 2008). According to this  
12  
13 definition, upon which the current study is based, recovery is strongly intertwined  
14  
15 with a person's experienced subjective *quality of life*, such as life satisfaction and  
16  
17 affect (Lehman *et al.*, 1991; Russell, 1980). As outlined above, the recovery process  
18  
19 itself can be supported by available resources, whether personal, interpersonal, or  
20  
21 systemic in nature. **The sum of different resources that can facilitate recovery** are  
22  
23 commonly referred to as recovery capital (Cloud and Granfield, 2008; Tew, 2013;  
24  
25 White and Cloud, 2008). **While access to recovery capital does not ensure recovery,**  
26  
27 **it may strengthen a person's possibilities for recovery (Cloud and Granfield, 2008).**  
28  
29 The accessibility of **recovery capital** may differ between persons and over time  
30  
31 (Hennessy, 2017). Potential forms and sources of recovery capital on the community  
32  
33 level have been scarcely covered in the research literature thus far (Hennessy,  
34  
35 2017).

36  
37           One possible type of recovery capital underpinning recovery is occupations  
38  
39 (Tew *et al.*, 2012), which can provide a sense of *occupational meaningfulness*  
40  
41 (Leufstadius *et al.*, 2011). Occupations may include a multitude of purposeful  
42  
43 activities, ranging from basic to engaging. Basic occupations may refer to activities of  
44  
45 daily living (Jonsson, 2008), such as self-care, meal preparation, and housekeeping.  
46  
47 Engaging occupations, in contrast, can refer to a wide variety of personally  
48  
49 meaningful activities (Jonsson, 2008), including dog walking, physical exercise,  
50  
51 socializing, employment, or voluntary work. In a qualitative study on occupations for  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 persons of older age, engaging occupations were described as essential to quality of  
4  
5 life, whereas no such connection was observed with basic occupations (Jonsson,  
6  
7 2008). People may experience different degrees of engagement depending on the  
8  
9 availability of opportunities for partaking in such personally meaningful occupations  
10  
11 (Sutton *et al.*, 2012). Furthermore, occupations may differ qualitatively, in whether  
12  
13 and to what extent they are experienced as engaging and meaningful for each  
14  
15 respective individual (Jonsson, 2008). Thus, a person's quality of life partially  
16  
17 depends on participation in the occupations that they consider engaging (Goldberg  
18  
19 *et al.*, 2002). The importance of employment as a possible resource in the recovery  
20  
21 process has been emphasized in qualitative research among persons with mental  
22  
23 health, substance use or co-occurring problems (Borg and Kristiansson, 2008;  
24  
25 Skogens and Von Greiff, 2014; Hansen and Bjerger, 2017; Ness *et al.* 2014). At the  
26  
27 same time, high unemployment rates have been observed among persons with co-  
28  
29 occurring problems (Hustvedt *et al.*, 2020; Laudet *et al.*, 2002), and some studies  
30  
31 have found few or no differences between workers and non-workers in terms of  
32  
33 recovery (Connell *et al.*, 2011; McHugo *et al.*, 2012). Other studies have  
34  
35 demonstrated that personally meaningful occupations besides employment may  
36  
37 strengthen quality of life (Doroud *et al.*, 2015; Nordaunet and Sælør, 2018). A recent  
38  
39 review showed that engaging occupations such as physical exercise, work, and  
40  
41 spiritual or religious activities, as well as participation in the community, appeared to  
42  
43 function as central mechanisms in facilitating the process of recovery for persons  
44  
45 with co-occurring problems, through recognition from others as a community  
46  
47 member with roles and responsibilities (De Ruyscher *et al.*, 2017). **However, in a**  
48  
49 **Norwegian context, only approximately 13% of service users with substance use or**  
50  
51 **co-occurring problems are employed, 4% are students, 18% participate in activities**  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 organized by their respective municipality, and 8% and 4% are engaged in service  
4 user organizations or voluntary work, respectively (Hustvedt *et al.*, 2020).

5  
6  
7 Interestingly, a large proportion of this population, 36%, engage in self-directed  
8 occupations, while 39% are described as not engaged in any occupation (Hustvedt  
9  
10  
11  
12  
13 *et al.*, 2020).

14  
15 Another potential source of recovery capital, and means to supporting  
16 recovery, is *citizenship* (Davidson *et al.*, 2008; Rowe and Davidson, 2016; Tew *et al.*,  
17 2012). Citizenship can refer to a person's experiences of being recognized as a  
18 member of the community (Ponce *et al.*, 2012). On the individual level, being a  
19 citizen implies having community membership to the same extent as others through  
20 access to a variety of essential rights, responsibilities, resources, valued social roles,  
21 and relationships in everyday life (Rowe *et al.*, 2001). Citizenship may allude to  
22 issues pertaining to the relationship between a citizen and the state as well as  
23 between fellow citizens, for instance through participation and caring for others  
24 (Lister, 2007). Some conceptualizations focus on citizenship primarily as a personal  
25 responsibility exercised by each respective citizen, while others view citizenship as  
26 chiefly negotiated by social and systemic factors (Vandekinderen *et al.*, 2012;  
27 Vervliet *et al.*, 2019). It has been noted that persons who have encountered  
28 homelessness, unemployment, substance use and/or mental health problems may  
29 experience more difficulty accessing citizenship than others (Hamer, 2011; Hamer *et al.*,  
30 2017; Rowe *et al.*, 2012). Consistent with this, a recent Norwegian report found  
31 that service users with substance use problems reported receiving unsatisfactory  
32 support from services in terms of becoming involved in occupations and in building  
33 social relationships (Nersund and Salthammer, 2020). In a photovoice study from  
34 Belgium, participants with co-occurring problems described encountering numerous  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



1  
2  
3 obstacles to exercising their citizenship, such as stigma and exclusion experienced  
4  
5 in the community (Vervliet *et al.*, 2019). Interestingly, an intervention study among  
6  
7 persons with substance use or mental health problems in the U.S. found that  
8  
9 participants involved in a citizenship-oriented project reported significantly higher  
10  
11 satisfaction with engagement in everyday life and quality of life throughout the  
12  
13 course of the intervention compared to participants in the control group (Clayton *et*  
14  
15 *al.*, 2013). These results suggest that efforts to strengthen access to citizenship may  
16  
17 play a positive role for recovery and quality of life.  
18  
19  
20

21  
22 The concepts of engagement in occupations and citizenship share several  
23  
24 similarities and intersections, where the former may be viewed as a primary source  
25  
26 of citizenship and the latter a more overarching framework. Actual engagement in  
27  
28 occupations (*occupational status*) can be hypothesized to have an impact on a  
29  
30 person's perceptions of occupational meaningfulness and citizenship, which, in turn,  
31  
32 may support the recovery process and contribute to enhancing quality of life. The  
33  
34 first aim of the study was to examine the associations between occupational status,  
35  
36 occupational meaningfulness, citizenship, and recovery and quality of life. The  
37  
38 second aim of the study was to examine whether occupational meaningfulness and  
39  
40 citizenship mediated the relationship between occupational status, and recovery and  
41  
42 quality of life. The pathways between these variables are depicted in Figure 1.  
43  
44  
45  
46  
47  
48

## 49 **Methods**

### 51 **Design**

52 The study used a cross-sectional design.  
53  
54  
55  
56  
57

### 58 **Recruitment and Sample**

59  
60

## THE ROLE OF OCCUPATIONAL MEANINGFULNESS AND CITIZENSHIP

8

1  
2  
3 The study participants were residents with co-occurring substance use and mental  
4 health problems who lived in supported housing in large cities across Norway. The  
5 participants were recruited through three steps. Six large cities across Norway were  
6 included in the study in order to obtain a sample representing different Norwegian  
7 regions. Supported housing sites for persons with co-occurring problems, located in  
8 these six cities, were invited to take part in the study. For supported housing sites to  
9 be eligible for recruitment, the housing site was to be managed by the respective  
10 municipality and have an associated staff-base of health and social workers. Both  
11 single-site and scattered-site supported housing sites were of interest. Further, the  
12 housing site was to have residents with co-occurring problems and use ordinary  
13 rental agreements based on the Norwegian Tenancy Act. Supported housing sites  
14 within the six cities were identified through search engines, telephone calls, and  
15 snowballing. Thirty supported housing sites were determined to fit the specified  
16 inclusion criteria and were therefore invited to participate. Finally, 21 of these sites  
17 contributed to the study, two sites did not contribute due to lack of response, and  
18 seven sites did not take part due to lack of interest in participation.

19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
Staff at the supported housing sites were contacted by the first author, either  
by telephone or email. They were asked about the study eligibility of the supported  
housing site in terms of fulfilling the inclusion criteria, in addition to their interest in  
contributing to the study. A contact person at each eligible site received a  
comprehensive description of the study via email. This information was then further  
distributed to both staff and residents at the respective housing site. The first author  
visited each of the supported housing sites prior to the data collection, where  
residents and staff were informed about the nature of the study and had the  
opportunity to ask questions. Staff presented the study at resident meetings, placed

1  
2  
3 flyers in common areas, and invited residents to participate. A convenience sample  
4  
5 was obtained, where the inclusion criteria for participants were 1) experiences with  
6  
7 co-occurring substance use and mental health problems, and 2) being a tenant at  
8  
9 one of the supported housing sites in the study with an ordinary rental agreement.  
10  
11 Diagnostic information was not collected and did not affect study eligibility as  
12  
13 residency in supported housing is primarily based on rights and experienced  
14  
15 challenges with substance use and mental health (Norwegian Directorate of Health,  
16  
17 2012). These challenges may be highly diverse, thus making specific diagnostic  
18  
19 criteria unsuitable for recruitment. An estimate of 135–150 residents received  
20  
21 invitations to take part in the study. A total sample consisting of 104 persons chose  
22  
23 to take part in the study (69–77% response rate). See Nesse *et al.* (2020) for further  
24  
25 descriptions of the study sites.  
26  
27  
28  
29  
30  
31

### 32 33 **Measures**

34  
35 Participants completed self-report questionnaires, which included demographic  
36  
37 variables and measures of recovery, quality of life, occupational meaningfulness,  
38  
39 and citizenship. The demographic variables included *gender, age, occupational*  
40  
41 *status, educational level, main source of income, length of residency, and prior*  
42  
43 *housing situation*. Occupational status, source of income, and previous housing  
44  
45 situation were multiple choice items, and the remaining items were single choice.  
46  
47 *Occupational status* was used as one of the main independent variables in the  
48  
49 analyses. The possible categories for occupational status were *ordinary*  
50  
51 *employment, qualification program, student, peer or voluntary work, stay-at-home*  
52  
53 *parent, other occupation* (with a corresponding open comment section), and  
54  
55 *unemployed*. In order to be able to measure participants' potential involvement in  
56  
57  
58  
59  
60

engaging occupations, the responses were recoded into a binary variable, where participants reporting any of the six former categories were categorized as having an active occupational status, while participants not reporting any of these were categorized as having an inactive occupational status.

*Recovery* was measured with the Norwegian version (Cronbach's  $\alpha = .89$ ) (Biringner and Tjøflåt, 2018) of the Recovery Assessment Scale—Revised (RAS-R) (Giffort *et al.*, 1995), which considers five key areas pertaining to personal recovery, namely, “Goal and success orientation” (e.g. “I have goals in life that I want to reach”), “Willingness to ask for help” (e.g. “I ask for help when I need it”), reliance on others (e.g. “I have people I can count on”), “Personal confidence and hope” (e.g. “I am hopeful about the future”), and “Not dominated by symptoms” (e.g. “My symptoms interfere less and less with my life”). The RAS-R contains 24 items scored on a five-point Likert-scale ranging from *Strongly disagree* (= 1), *Disagree* (= 2), *Not sure* (= 3), *Agree* (= 4) to *Strongly agree* (= 5). A high degree of agreement with the statements results in a higher recovery score.

*Quality of life* was operationalized with three different constructs, namely life satisfaction, positive affect, and negative affect. *Life satisfaction* was measured with a single item from the Norwegian version (Cronbach's  $\alpha = .91$ ) (Clausen *et al.*, 2015) of the Manchester Short Assessment of Quality of Life (MANSA) (Priebe *et al.*, 1999), assessing satisfaction with life with a seven-point Likert-scale. Possible scores range from *Could not be worse* (= 1) to *Could not be better* (= 7), with higher scores indicating higher life satisfaction. *Positive affect* was measured with two items assessing the extent to which participants were happy and engaged yesterday. The scores for experienced happiness and engagement were combined to form an index representing positive affect (Cronbach's  $\alpha = 0.61$ ). *Negative affect* was measured with

1  
2  
3 four items assessing the degree to which participants were worried, sad, angry, and  
4  
5 lonely yesterday. The scores for all four negative affective states were combined into  
6  
7 an index (Cronbach's  $\alpha = .70$ ). Both positive and negative affect were measured on  
8  
9 an 11-point scale ranging from *Not at all yesterday* (= 0) to *All the time yesterday* (= 10).  
10  
11 The above-mentioned items were constructed in line with suggestions for  
12  
13 measuring affective quality of life as described in Norwegian national  
14  
15 recommendations for assessing quality of life and well-being (Nes *et al.*, 2018).  
16  
17  
18

19 *Occupational meaningfulness* was operationalized through two constructs;  
20  
21 satisfaction with occupations and sense of engagement in occupations. "Satisfaction  
22  
23 with occupations" was measured using an index created per the rationale of  
24  
25 assessing contentment with occupational aspects of everyday life using the mean  
26  
27 score of three items ( $\alpha = .64$ ) from the above-mentioned MANSA (Priebe *et al.*,  
28  
29 1999), namely, satisfaction with occupation ("How satisfied are you with your main  
30  
31 occupation?"), leisure ("How satisfied are you with your leisure activities?"), and  
32  
33 education ("How satisfied are you with your education?"). Possible scores range  
34  
35 from *Could not be worse* (= 1) to *Could not be better* (= 7), with higher scores  
36  
37 indicating higher levels of satisfaction. "Sense of engagement in occupations" was  
38  
39 measured with a Norwegian translation ( $\alpha = .94$ ) of the Engagement in Meaningful  
40  
41 Activities Survey (EMAS) (Goldberg and Brintnell, 1994). The EMAS contains 12  
42  
43 items assessing experienced engagement in meaningful everyday occupations (e.g.,  
44  
45 "The activities I do give me a sense of satisfaction" and "The activities I do give me a  
46  
47 feeling of control") on a four-point scale ranging from *Rarely* (= 1) to *Always* (= 4).  
48  
49 The measure was translated from English to Norwegian for the current study, using  
50  
51 forward and back translation, following a set of procedures for good translation  
52  
53 practices (Wild *et al.*, 2005).  
54  
55  
56  
57  
58  
59  
60

*Citizenship* was measured with a Norwegian translation (Cronbach's  $\alpha = .94$ ) of the Citizenship Measure (Rowe *et al.*, 2012), consisting of 44 items assessing an individual's experienced citizenship across seven domains of "Connectedness" (e.g., "You are connected to others"), "Government and infrastructure" (e.g., "You would have access to public assistance if needed"), "Caring for others" (e.g., "You take care of family, friends, children, or pets"), "Civil rights" (e.g., "You have or could have access to adequate housing"), "Legal rights" (e.g., "You have access to adequate healthcare"), "Choice" (e.g., "Your personal decisions and choices are respected"), and "Community participation" (e.g., "You participate in social and recreational activities"). Responses are scored on a five-point Likert-scale ranging from *Not at all/never* (= 1) to *Very often/always* (= 5). The measure was translated from English to Norwegian for the purpose of the study using forward and back translation procedures (Wild *et al.*, 2005).

### Data Collection

Data were collected between August and November 2018. The participants could choose whether to fill in the questionnaires independently ( $n = 43$ ), or with assistance or through a structured interview ( $n = 61$ ). The data collection took place in meeting rooms or common areas at the housing sites over chocolates and coffee. Participants typically spent between 30 to 90 minutes filling in the questionnaires. Each situation in which participants preferred filling in the questionnaires with some assistance or through a structured interview was different depending on the person and the context in which the data collection took place. Many participants elaborated on their responses and life experiences while taking part in the study, and when participants wanted to reflect and talk, this was welcomed. Participants received a

1  
2  
3 monetary compensation (200 NOK, approximately 22 USD) per the rationale of  
4 reimbursing respondents for their contribution. Afterward, each participant was asked  
5 if they had any final thoughts or feedback on how they had experienced the study.  
6  
7

8 Each participant was thanked for their contribution to the study. **Independent**  
9  
10 **samples t-tests** indicated that there were no significant differences in scores on any  
11  
12 of the study measures due to response mode (i.e., filling in the questionnaires  
13 independently, or with assistance or through a structured interview). **Potential**  
14  
15 **differences in reported occupations were checked given the role of occupational**  
16  
17 **status as a key variable in the study. There were no significant differences in**  
18  
19 **reported occupational status depending on response mode.**  
20  
21  
22  
23  
24  
25  
26  
27

### 28 **Statistical Analysis**

29  
30 To describe the data, percentages and mean values with 95% confidence intervals  
31 were reported. The first study aim was addressed using linear regression analyses,  
32 while the second study aim was addressed with mediation analyses. For path A,  
33 several models were fitted, one for each of the dependent variables (the two  
34 occupational meaningfulness measures “Satisfaction with occupation” and “Sense of  
35 engagement in occupations”, and the citizenship domains of “Connectedness”,  
36 “Government and infrastructure”, “Caring for others”, “Civil rights”, “Legal rights”,  
37 “Choice”, and “Community participation”), with occupational status as the  
38 independent variable. For path B, the two occupational meaningfulness measures  
39 and the seven citizenship domains were used as independent variables, with  
40 recovery (“Goal and success orientation”, “Willingness to ask for help”, “Reliance on  
41 others”, “Personal confidence and hope”, and “Not dominated by symptoms”) and  
42 quality of life (life satisfaction, positive affect, and negative affect) as dependent  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 variables. For path C', the direct effects between occupational status and the  
4  
5 dependent variables recovery and quality of life, were checked. For path C, the  
6  
7 indirect effects between the dependent variables recovery and quality of life (with  
8  
9 their five and three domains, respectively), and the independent variables, namely  
10  
11 the occupational meaningfulness measures and the citizenship domains, were  
12  
13 checked. Age and gender were included as potential confounders in all analyses.  
14  
15 For the different linear regression models, regression coefficients (B) and their  
16  
17 corresponding 95% confidence intervals are reported. SPSS version 26 was used to  
18  
19 analyze the data, and p-values less than 5% were considered statistically significant.  
20  
21 To model the mediation analyses, with direct and indirect effects and their  
22  
23 corresponding 95% confidence intervals, the SPSS program PROCESS was used  
24  
25 (Hayes, 2017). To estimate the 95% confidence intervals of the indirect effects,  
26  
27 bootstrap techniques were used, with 5,000 bootstrap replications.  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40

[Insert Figure 1 approximately here]

### 41 **Ethical Considerations**

42 The study was notified to and recommended by the Norwegian Centre for Research  
43  
44 Data (NSD) (case no. 54661). Residents received oral and written information about  
45  
46 the study prior to participation. Staff initially invited residents to participate. Residents  
47  
48 then indicated their interest, first to staff and later to the first author. Residents were  
49  
50 informed that study participation was voluntary, and that consent could be withdrawn  
51  
52 at any point during the data collection. All participants provided informed consent  
53  
54 prior to participation. There were opportunities for debriefing with the first author after  
55  
56  
57  
58  
59  
60



1  
2  
3 study completion. Staff were asked to follow up on any participant expressing  
4  
5 distress immediately after study participation.  
6  
7  
8  
9

## 10 **Results**

### 11 **Demographical Characteristics**

12  
13 The sample ( $n = 104$ , 76 men, 28 women) primarily consisted of residents aged  
14  
15 above 40 (see Table 1). The most common levels of completed education among the  
16  
17 residents were elementary school or courses attended after completing high school.  
18  
19

20  
21 The main source of income for the majority of the participants was social security  
22  
23 benefits, which are administered by the Norwegian Labor and Welfare  
24  
25 Administration. The following types of occupations were reported: ordinary  
26  
27 employment (8.7%), qualification program (10.7%), studying (1.9%), peer or  
28  
29 voluntary work (6.8%), other occupation (37.9%), as specified in the open comment  
30  
31 section (e.g. walking the dog, table tennis, music, working out, socializing). **A total of**  
32  
33 **42.4% of participants reported being unemployed. When combining the responses**  
34  
35 **on the questions of ordinary employment, participation in a qualification program,**  
36  
37 **studying, involvement in peer or voluntary work, and other occupations, 58.7% of the**  
38  
39 **sample was categorized as having an active occupational status, while the remaining**  
40  
41 **41.3% was categorized as having an inactive occupational status.**  
42  
43  
44  
45  
46  
47  
48  
49

50 [Insert Table 1 approximately here]  
51  
52  
53

### 54 **Descriptive Statistics**

55  
56 The lowest mean score for recovery was found for the domain “Not dominated by  
57  
58 symptoms”, while the highest was “Goal and success orientation” (see Table 2).  
59  
60

1  
2  
3 Regarding quality of life, the mean score for life satisfaction was in the average  
4 range, as was positive affect. The mean score for negative affect was moderately  
5 low. For occupational meaningfulness, the mean score for “Satisfaction with  
6 occupations” was moderately high, as was the mean score for “Sense of  
7 engagement in occupations”. For citizenship, the lowest mean score was provided  
8 for the domain “Community participation”, while the highest score was provided for  
9 “Legal rights”. For more detailed descriptive statistics of participants’ scores for  
10 recovery and quality of life, see Nesse *et al.* (2020).  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23

24 [Insert Table 2 approximately here]  
25  
26  
27

### 28 **Associations: Paths A and B**

29  
30  
31 Linear regression analyses examining the association between occupational status,  
32 occupational meaningfulness, and citizenship (path A) showed that occupational  
33 status was significantly, positively associated with the citizenship domains “Caring  
34 for others” and “Community participation” (see Table 3). Furthermore, there were  
35 significant associations between occupational meaningfulness, citizenship, and  
36 recovery and quality of life in the majority of the domains (path B) (see Table 4).  
37 Higher scores for occupational meaningfulness and citizenship were associated with  
38 higher scores for recovery and quality of life, and lower scores were conversely  
39 associated with lower scores for recovery and quality of life. The associations with  
40 occupational meaningfulness and citizenship were particularly consistent for the  
41 recovery domains “Goal and success orientation”, “Reliance on others”, and  
42 “Personal confidence and hope”, as well as for life satisfaction. Interestingly, none of  
43 the measures of occupational meaningfulness were significantly associated with the  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 recovery domain “Not dominated by symptoms”, but all the seven citizenship  
4  
5 domains were.  
6  
7  
8  
9

10 [Insert Table 3 approximately here]  
11  
12

13  
14 [Insert Table 4 approximately here]  
15  
16  
17  
18

### 19 **Mediation: Paths C' and C**

20  
21 The mediation analyses (see Table 5) showed significant direct effects only between  
22  
23 occupational status and positive affect (path C'), indicating that having an active  
24  
25 occupational status was associated with higher positive affect, and, conversely, that  
26  
27 having an inactive occupational status was associated with lower positive affect.  
28  
29

30  
31 When exploring for indirect effects mediating the relationship between  
32  
33 occupational status and the dependent variables recovery and quality of life (path C),  
34  
35 the picture changed. The two citizenship domains “Caring for others” and  
36  
37 “Community participation” were used as mediators since these were the only  
38  
39 variables that were significantly associated with occupational status. Using “Caring  
40  
41 for others” as a mediator, occupational status was significantly positively associated  
42  
43 with “Goal and success orientation”, “Reliance on others”, “Personal confidence and  
44  
45 hope”, life satisfaction, and positive affect. Using “Community participation” as a  
46  
47 mediator, occupational status was significantly positively associated with all recovery  
48  
49 measures, life satisfaction and positive affect.  
50  
51  
52  
53  
54  
55

56 [Insert Table 5 approximately here]  
57  
58  
59  
60

## Discussion

### Occupational Status

When asked about their occupational status, a majority of the participants reported being engaged in unspecified occupations. This indicates that despite a general lack of formal engagement in occupations, participants found their own ways of engaging. The low percentage of participants engaged in vocational occupations corresponds with the percentages from a report synthesizing information about service users with substance use or co-occurring problems ( $N = 22.404$ ) in Norwegian municipalities (Hustvedt *et al.*, 2020), which, for instance, depicted that merely 10% of service users are employed and that one-third engage in self-directed occupations, whether basic or engaging. Forty percent of service users are described as not engaged in any occupation (Hustvedt *et al.*, 2020).

### The Significance of Occupational Meaningfulness and Citizenship for Recovery

Study participants generally experienced some degree of occupational meaningfulness, with relatively high scores for “Satisfaction with occupations” and “Sense of engagement in occupations”. At the same time, it is important to note that there was variance within the sample in reported scores for occupational meaningfulness. Service users with co-occurring problems in Norway have described their everyday lives as meaningful through engagement in various occupations, despite also experiencing obstacles in their recovery processes (Nordaunet and Sælør, 2018). Qualitative studies have reported that subjective experiences of engagement and meaning through occupations is a fundament for pursuing recovery, and is essential to quality of life (De Ruyscher *et al.*, 2017;

1  
2  
3 Doroud *et al.*, 2015; Jonsson, 2008; Nordaunet and Sælør, 2018). Interestingly, our  
4  
5 analyses showed that higher levels of occupational meaningfulness were associated  
6  
7 with all recovery domains except “Not dominated by symptoms”, as well as with life  
8  
9 satisfaction and positive affect, while negatively associated with negative affect.  
10  
11  
12 These results imply the need to address the issue of occupational meaningfulness in  
13  
14 efforts to support recovery and quality of life.  
15

16  
17 According to the scores for citizenship, the participants scored relatively  
18  
19 higher on the domain assessing legal rights (e.g., having access to emergency  
20  
21 services) than the domain measuring involvement in the community (e.g., having  
22  
23 responsibilities to others in the community). These results may be interpreted as  
24  
25 participants experiencing that the more formal aspects of their citizenship are  
26  
27 secured, while less formal aspects are not ensured in the same manner. The  
28  
29 analyses of the relationship between citizenship and recovery and quality of life  
30  
31 resulted in strong associations in most domains. All citizenship domains were  
32  
33 positively associated with the recovery domains “Goal and success orientation”,  
34  
35 “Reliance on others”, “Personal confidence and hope”, and “Not dominated by  
36  
37 symptoms”. Furthermore, each citizenship domain was positively associated with life  
38  
39 satisfaction and negatively associated with negative affect. Two quantitative studies  
40  
41 conducted in Canadian and American contexts found citizenship and recovery and  
42  
43 quality of life to be interrelated (O’Connell *et al.*, 2017; Pelletier *et al.*, 2015), while  
44  
45 the present study demonstrates that particular domains of citizenship are of  
46  
47 importance. The notion that citizenship may be a foundation for recovery, and a form  
48  
49 of recovery capital (Rowe and Davidson, 2016; Tew *et al.*, 2012; Vandekinderen *et*  
50  
51 *al.*, 2012), is supported by this study. The findings suggest that it is crucial to  
52  
53 emphasize various social and contextual issues that may help or hinder citizenship in  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 relation to recovery and quality of life for persons with co-occurring problems.  
4  
5  
6  
7

### 8 **Caring for Others and Community Participation as Mediators**

9

10 According to the way in which occupational status was framed and categorized in the  
11 present study, more than half of the participants can be considered having an active  
12 occupational status. Firstly, there was a direct effect between having an active  
13 occupational status and positive affect, signifying that having something to do is  
14 related to experiences of positive affect. Qualitative studies have suggested that,  
15 among other things, engagement in occupations may contribute to or result in  
16 pleasurable feelings (Nordaunet and Sælør, 2018). Individuals in marginalized  
17 positions are reported to long for an ordinary everyday life with opportunities for  
18 employment, while persons more thoroughly integrated see employment as a  
19 starting point and focus more on finding ways to thrive in their work (Skogens and  
20 Von Greiff, 2014).  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34

35 Besides the mentioned direct effect, no other direct associations were found  
36 between occupational status and any of the remaining recovery and quality of life  
37 measures. The results are partially in line with those of a study comparing recovery  
38 scores among workers and non-workers with co-occurring problems where no  
39 differences in recovery scores were found between the two groups (Connell *et al.*,  
40 2011). Interestingly, it has been reported that more engagement in any form of  
41 occupations, regardless of the specific characteristics of these occupations, was  
42 associated with higher recovery scores (Hendryx *et al.*, 2009).  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53

54 The associations between occupational status, occupational meaningfulness,  
55 and citizenship, indicated that occupational status was significantly positively  
56 associated with the citizenship domains “Caring for others” and “Community  
57  
58  
59  
60

1  
2  
3 participation". Further, "Caring for others" and "Community participation" were found  
4  
5 to mediate the relationship between occupational status and recovery and quality of  
6  
7 life. Experiences of taking care of others and participating in the community  
8  
9  
10 functioned as a bridge between occupations and the recovery process. Occupations  
11  
12 such as employment are important, in part, because they can provide arenas for  
13  
14 social connections and nurturing, reciprocal relationships and promote an active,  
15  
16 occupational identity by being a contributor to the community (Blank *et al.*, 2016;  
17  
18 Blank *et al.*, 2015; Tew *et al.*, 2012). Similarly, being involved in engaging  
19  
20  
21 occupations such as bicycling, going for walks with a friend and decorating at home  
22  
23 can also provide the recovery capital needed to experience meaning, develop a  
24  
25  
26 positive identity, as well as being and becoming recognized as a citizen with  
27  
28 competencies and resources (Nordauet and Sælør, 2018). Subjective experiences  
29  
30 of interpersonal and community connections, which are characterized by agency and  
31  
32 reciprocity, seem important for occupations to be related to recovery (Tew *et al.*,  
33  
34 2012). Having something to do may contribute to subjective experiences of meaning  
35  
36  
37 and of being part of a community, belonging, and being connected, which, in turn,  
38  
39 may promote recovery and quality of life (Blank *et al.*, 2016; Vervliet *et al.*, 2019).  
40  
41  
42  
43  
44

### 45 Study Strengths and Limitations

46  
47 The study contributes with new insights into the pathways involved in the relationship  
48  
49 between occupational status, and recovery and quality of life. Some key strengths  
50  
51 pertain to the study building on data gathered at multiple and diverse supported  
52  
53 housing sites with a fairly large sample that appears to be representative of service  
54  
55 users with substance use or co-occurring problems in Norway, thus indicating that  
56  
57 the findings may be generalizable to a wider population. One methodological  
58  
59  
60

1  
2  
3 limitation of the study is connected to the categorization of occupational status. The  
4 way occupational status was measured was not particularly sensitive, nor detailed. In  
5  
6 addition, no distinction was made between degree of engagement or engagement in  
7  
8 different types of occupations. Occupational status could for instance be assessed  
9  
10 by distinguishing between formal (e.g., employment) and informal (e.g., self-directed)  
11  
12 occupations, or through examining the degree of structure provided through various  
13  
14 occupations. In addition, it could be useful to more broadly and thoroughly assess  
15  
16 engagement in different types of occupations as an indicator of occupational status.  
17  
18 Another key limitation of this study was the operationalization of occupational  
19  
20 meaningfulness. The measurement of occupational meaningfulness was limited to  
21  
22 satisfaction with occupations and sense of engagement in occupations. However, it  
23  
24 may be useful to address other central dimensions of occupational meaningfulness.  
25  
26 An additional crucial limitation is the cross-sectional design of the study, which  
27  
28 makes it impossible to infer causality in the relationship between occupational status,  
29  
30 occupational meaningfulness, and citizenship and recovery and quality of life. Thus,  
31  
32 the results need to be interpreted with caution.  
33  
34  
35  
36  
37  
38  
39  
40  
41

### 42 Conclusions

43  
44 To the best of our knowledge, this study is the first to use the lenses of occupational  
45  
46 meaningfulness and citizenship in looking at the pathways between occupational  
47  
48 status, and recovery and quality of life, among persons with co-occurring problems in  
49  
50 Norway. The study demonstrated that self-reported occupational meaningfulness  
51  
52 and citizenship were positively associated with recovery and quality of life. It further  
53  
54 showed that occupational meaningfulness and citizenship, and more specifically  
55  
56  
57  
58  
59  
60



1  
2  
3 caring for others and community participation, are two key mechanisms through  
4  
5 which recovery and quality of life can be supported.  
6  
7  
8  
9

### 10 **Implications for Practice and Policy**

11  
12 On the individual level, it is necessary to have access to a variety of occupations that  
13  
14 are experienced as personally engaging and meaningful. This may also create  
15  
16 possibilities for strengthening citizenship. On the service level, providing support in  
17  
18 seeking out opportunities for engaging and meaningful occupations that structure  
19  
20 everyday life is a measure that can be addressed to facilitate recovery for persons  
21  
22 with co-occurring problems. This may entail support in identifying and accessing  
23  
24 suitable engaging occupations, whether formal or less formal in nature. However,  
25  
26 this may be challenging due to barriers such as stigma, discrimination and limited  
27  
28 availability of opportunities and options for participation. As such, extensive and  
29  
30 diverse efforts on multiple levels may be required in order to address and enable  
31  
32 engagement in occupations. Focusing on core issues related to citizenship, such as  
33  
34 relationships and participation in the community, may also prove fruitful. On the  
35  
36 policy level, it is important to develop practices that place engaging occupations and  
37  
38 citizenship at the center of things. The formal aspects of occupations and citizenship  
39  
40 may perhaps be best addressed on the service and system levels, where the rights  
41  
42 of persons with co-occurring problems to be included and participate can be  
43  
44 secured.  
45  
46  
47  
48  
49  
50  
51  
52  
53

### 54 **Implications for Further Research**

55  
56 Further research should continue the inquiry into the pathways and mechanisms  
57  
58 involved in the relationship between occupational status and recovery for persons  
59  
60

1  
2  
3 with co-occurring problems, with an emphasis on issues connected to occupational  
4  
5 meaningfulness and citizenship. Occupational status should be measured in a  
6  
7 standardized and more nuanced manner if aiming to give a more proper image of the  
8  
9 role of what people do, for recovery. **Other dimensions of occupational**  
10  
11 **meaningfulness should be addressed.** Further studies should be conducted using  
12  
13 longitudinal designs to gain knowledge about the directionality in the relationship  
14  
15 between occupational status, occupational meaningfulness, citizenship, and  
16  
17 recovery.  
18  
19  
20  
21  
22  
23

### 24 **Acknowledgements**

25  
26 This paper stems from the research project “From double trouble to dual recovery:  
27  
28 Increasing recovery-oriented rehabilitation and quality of life through collaborative  
29  
30 partnership.” The project is funded by the Research Council of Norway from 2018 to  
31  
32 2021 (project no. 269858). It is based at the Center for Mental Health and Substance  
33  
34 Abuse, University of South-Eastern Norway (USN), in collaboration with the  
35  
36 Norwegian University of Life Sciences (NMBU), and staff and users of the Mental  
37  
38 Health and Substance Abuse Services of the Municipality of Oslo serving  
39  
40 Grünerløkka district. We thank the participants and staff members at all study sites  
41  
42 and the members of the competency group. We are grateful to Aaron Eakman for his  
43  
44 assistance in translating the Engagement in Meaningful Activities Survey from  
45  
46 English to Norwegian.  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

## References

- Anthony, W. (1993), "Recovery from mental illness: The guiding vision of the mental health service system in the 1990s", *Psychosocial Rehabilitation Journal*, Vol. 16, No. 4, pp. 11–23.
- Biringer, E., and Tjoflåt, M. (2018), "Validation of the 24-item recovery assessment scale-revised (RAS-R) in the Norwegian language and context: A multi-centre study", *Journal of Health and Quality of Life Outcomes*, Vol. 16 No. 1., pp. 1–12.
- Blank, A., Finlay, L., and Prior, S. (2016), "The lived experience of people with mental health and substance misuse problems: Dimensions of belonging", *British Journal of Occupational Therapy*, Vol. 79 No. 7, pp. 434–441.
- Blank, A. A., Harries, P., and Reynolds, F. (2015), "“Without occupation you don't exist”: Occupational engagement and mental illness", *Journal of Occupational Science*, Vol. 22 No. 2, pp. 197–209.
- Borg, M., and Davidson, L. (2008), "The nature of recovery as lived in everyday experience", *Journal of Mental Health*, Vol. 17 No. 2, pp. 129–140.
- Borg, M., and Kristiansen, K. (2008), "Working on the edge: The meaning of work for people recovering from severe mental distress in Norway", *Disability and Society*, Vol. 23 No. 5, pp. 511–523.
- Clausen, H., Landheim, A., Odden, S., Heiervang, K., Stuen, H., Killaspy, H., Šaltytė Benth, J., and Ruud, T. (2015), "Associations between quality of life and functioning in an assertive community treatment population", *Journal of Psychiatric Services*, Vol. 66 No. 11, pp. 1249–1252.
- Clayton, A., O'Connell, M. J., Bellamy, C., Benedict, P., and Rowe, M. (2013), "The citizenship project part II: Impact of a citizenship intervention on clinical and

community outcomes for persons with mental illness and criminal justice involvement”, *American Journal of Community Psychology*, Vol. 51 No. 1-2, pp. 114–122.

Cloud, W., and Granfield, R. (2008), “Conceptualizing recovery capital: Expansion of a theoretical construct”, *Substance Use and Misuse*, Vol. 43 No. 12-13, pp. 1971–1986.

Connell, M., King, R., and Crowe, T. (2011), “Can employment positively affect the recovery of people with psychiatric disabilities?”, *Psychiatric Rehabilitation Journal*, Vol. 35 No. 1, pp. 59-63.

Davidson, L., Andres-Hyman, R., Bedregal, L., Tondora, J., Frey, J., and Kirk Jr, T. (2008), “From “double trouble” to “dual recovery”: Integrating models of recovery in addiction and mental health”, *Journal of Dual Diagnosis*, Vol. 4 No. 3, pp. 273–290.

Deegan, P. E. (1988), “Recovery: The lived experience of rehabilitation”, *Psychosocial Rehabilitation Journal*, Vol. 11 No. 4, pp. 11–19.

De Ruyscher, C., Vandeveld, S., Vanderplasschen, W., De Maeyer, J., and Vanheule, S. (2017), “The concept of recovery as experienced by persons with dual diagnosis: A systematic review of qualitative research from a first-person perspective”, *Journal of Dual Diagnosis*, Vol. 13 No. 4, pp. 264–279.

Doroud, N., Fossey, E., and Fortune, T. (2015), “Recovery as an occupational journey: A scoping review exploring the links between occupational engagement and recovery for people with enduring mental health issues”, *Australian Occupational Therapy Journal*, Vol. 62 No. 6, pp. 378–392.

Fakhoury, W., and Priebe, S. (2007), “Deinstitutionalization and reinstitutionalization:

1  
2  
3 major changes in the provision of mental healthcare”, *Psychiatry*, Vol. 6 No. 8, pp.  
4  
5 313–316.

6  
7 Giffort, D., Schmook, A., Woody, C., Vollendorf, C., and Gervain, M. (1995),  
8  
9 “*Construction of a scale to measure consumer recovery*”, Illinois Office of  
10  
11 Mental Health.

12  
13  
14 Goldberg, B., and Brintnell, E. (1994). Engagement in Meaningful Activities Survey.

15  
16  
17 Goldberg, B., Brintnell, E., and Goldberg, J. (2002), “The relationship between  
18  
19 engagement in meaningful activities and quality of life in persons disabled by  
20  
21 mental illness”, *Occupational Therapy in Mental Health*, Vol. 18 No. 2, pp. 17-  
22  
23 44.

24  
25  
26 Hamer, H. (2011), “*Inside the city walls: Mental health service users’ journeys*  
27  
28 *towards full citizenship*”, doctoral dissertation, University of Auckland,  
29  
30 Auckland, New Zealand.

31  
32  
33 Hamer, H. P., Kidd, J., Clarke, S., Butler, R., and Lampshire, D. (2017), “Citizens un-  
34  
35 interrupted: Practices of inclusion by mental health service users”, *Journal of*  
36  
37 *Occupational Science*, Vol. 24 No. 1, pp. 76–87.

38  
39  
40 Hansen, J. O., and Bjerger, B. (2017), “What role does employment play in dual  
41  
42 recovery? A qualitative meta-synthesis of cross-cutting studies treating  
43  
44 substance use treatment, psychiatry and unemployment services”, *Advances*  
45  
46 *in Dual Diagnosis*, Vol. 10 No. 3, pp. 105-119.

47  
48  
49 Hayes, A. F. (2017), *Introduction to mediation, moderation, and conditional process*  
50  
51 *analysis: A regression-based approach*, Guilford Publications, New York.

52  
53  
54 Hendryx, M., Green, C. A., and Perrin, N. A. (2009), “Social support, activities, and  
55  
56 recovery from serious mental illness: STARS study findings”, *Journal of*  
57  
58 *Behavioral Health Services and Research*, Vol. 36 No. 3, pp. 320–329.  
59  
60

- 1  
2  
3 Hennessy, E. (2017), "Recovery capital: A systematic review of the literature",  
4  
5 *Addiction Research Theory*, Vol. 25 No. 5, pp. 349–360.  
6  
7  
8 Hustvedt, I. B., Bosnic, H., and Håland, M. E. (2020), "Brukerplan – Årsrapport 2019.  
9  
10 Tjenestemottakere med rus- og psykiske helseproblemer i kommunene  
11  
12 [Annual report 2019. Service users with substance use and mental health  
13  
14 problems in the municipalities]". Stavanger, Norway.  
15  
16  
17 Jonsson, H. (2008), "A new direction in the conceptualization and categorization of  
18  
19 occupation", *Journal of Occupational Science*, Vol. 15 No. 1, pp. 3–8.  
20  
21  
22 Laudet, A. B., Magura, S., Vogel, H. S., and Knight, E. L. (2002), "Interest in and  
23  
24 obstacles to pursuing work among unemployed dually diagnosed individuals",  
25  
26 *Substance Use and Misuse*, Vol. 37 No. 2, pp. 145–170.  
27  
28  
29 Lehman, A. F., Slaughter, J. G., and Myers, C. P. (1991), "Quality of life in alternative  
30  
31 residential settings", *Psychiatric Quarterly*, Vol. 62 No. 1, pp. 35–49.  
32  
33  
34 Leufstadius, C., Erlandsson, L. K., Björkman, T. and Eklund, M. (2011),  
35  
36 "Meaningfulness in daily occupations among individuals with persistent mental  
37  
38 illness", *Journal of Occupational Science*, Vol. 15 No. 1, pp. 27-35.  
39  
40  
41 Lister, R. (2007), "Inclusive citizenship: Realizing the potential", *Citizenship Studies*,  
42  
43 Vol. 11 No. 1, pp. 49–61.  
44  
45  
46 McHugo, G. J., Drake, R. E., Xie, H. and Bond, G. R. (2012), "A 10-year study of  
47  
48 steady employment and non-vocational outcomes among people with serious  
49  
50 mental illness and co-occurring substance use disorders", *Schizophrenia*  
51  
52 *Research*, Vol. 132 No. 2-3, pp. 233-239.  
53  
54  
55 Mezzina, R., Davidson, L., Borg, M., Marin, I., Topor, A., and Sells, D. (2006), "The  
56  
57 social nature of recovery: Discussion and implications for practice", *Archives*  
58  
59 *of Andrology*, Vol. 9 No. 1, pp. 63–80.  
60

1  
2  
3 Nes, R., Hansen, T., and Barstad, A. (2018), "Livskvalitet. Anbefalinger for et bedre  
4 målesystem. [Quality of life. Recommendations for a better measurement  
5 system]", Norwegian Directorate of Health, Oslo, Norway.  
6  
7

8  
9  
10 Ness, O., Borg, M., and Davidson, L. (2014), "Facilitators and barriers in dual  
11 recovery: a literature review of first-person perspectives", *Advances in Dual*  
12 *Diagnosis*, Vol. 7 No. 3, pp. 107-117.  
13  
14

15  
16  
17 Nesse, L., Gonzalez, M. T., Aamodt, G., and Raanaas, R. K. (2020), "Recovery,  
18 quality of life and issues in supported housing among residents with co-  
19 occurring problems: A cross-sectional study", *Advances in Dual Diagnosis*,  
20 Vol. 13 No. 2, pp. 73-87.  
21  
22  
23

24  
25  
26 Nersund, R. A., and Salthammer, J. A. (2020), "Brukertilfredshetsevaluering av  
27 kommunale tjenester blant personer med rusmiddelproblemer. Delrapport 1  
28 2020. Kvantitativ rapport, nasjonale resultater. [Service user satisfaction with  
29 municipal services among persons with substance use problems. Report 1  
30 2020. Quantitative report, national results]", Norwegian Directorate of Health.  
31 Oslo, Norway.  
32  
33  
34  
35  
36  
37  
38  
39

40 Nordaunet, O. M., and Sælør, K. T. (2018), "How meaningful activities influence the  
41 recovery process", *Advances in Dual Diagnosis*, Vol. 11 No. 3, pp. 114–125.  
42  
43

44 Norwegian Directorate of Health (2012), "Nasjonal faglig retningslinje for utredning,  
45 behandling og oppfølging av personer med samtidig rus- og psykisk lidelse -  
46 ROP-lidelser. [National Guidelines for the Assessment, Treatment and  
47 Rehabilitation of Persons with Co-Occurring Substance Use and Mental  
48 Health Disorders - Dual Diagnosis]", Oslo, Norway.  
49  
50  
51  
52  
53

54  
55  
56 O'Connell, M. J., Clayton, A., and Rowe, M. (2017), "Reliability and validity of a  
57  
58  
59  
60

1  
2  
3 newly developed measure of citizenship among persons with mental illnesses”,

4  
5 *Community Mental Health Journal*, Vol. 53 No. 3, pp. 367–374.

6  
7 Pelletier, J.-F., Corbière, M., Lecomte, T., Briand, C., Corrigan, P., Davidson, L., and

8  
9  
10 Rowe, M. (2015), “Citizenship and recovery: Two intertwined concepts for  
11  
12 civic-recovery”, *BMC Psychiatry*, Vol. 15 No. 1, pp. 1-7.

13  
14 Ponce, A. N., Clayton, A., Noia, J., Rowe, M., and O'Connell, M. (2012), “Making

15  
16 meaning of citizenship: Mental illness, forensic involvement, and

17  
18 homelessness”, *Journal of Forensic Psychology Practice*, Vol. 12 No. 4, pp.  
19  
20 349–365.

21  
22 Priebe, S., Huxley, P., Knight, S., and Evans, S. (1999), “Application and results of

23  
24 the Manchester Short Assessment of Quality of Life (MANSA)”, *International*  
25  
26  
27  
28  
29 *Journal of Social Psychiatry*, Vol. 45 No. 1, pp. 7–12.

30  
31 Rowe, M., Benedict, P., Sells, D., Dinzeo, T., Garvin, C., Schwab, L., Baranoski, M.,

32  
33 Girard, V., and Bellamy, C. (2009), “Citizenship, community, and recovery: A  
34  
35 group-and peer-based intervention for persons with co-occurring disorders

36  
37 and criminal justice histories”, *Journal of Groups in Addiction Recovery*, Vol. 4  
38  
39 No. 4, pp. 224–244.

40  
41 Rowe, M., Clayton, A., Benedict, P., Bellamy, C., Antunes, K., Miller, R., Pelletier, J.-

42  
43 F., Stern, E., and O'Connell, M. (2012), “Going to the source: Creating a  
44  
45 citizenship outcome measure by community-based participatory research  
46  
47  
48  
49  
50 methods”, *Psychiatric Services*, Vol. 63 No. 5, pp. 445–450.

51  
52 Rowe, M., and Davidson, L. (2016), “Recovering citizenship”, *Israeli Journal of*

53  
54  
55 *Psychiatry and Related Sciences*, Vol. 53 No. 1, pp. 14–21.

56  
57 Rowe, M., Kloos, B., Chinman, M., Davidson, L., and Cross, A. B. (2001),



1  
2  
3 “Homelessness, mental illness and citizenship”, *Social Policy Administration*, Vol. 35  
4  
5 No. 1, pp. 14–31.

6  
7  
8 Russell, J. (1980), “A circumplex model of affect”, *Journal of Personality and Social*  
9  
10 *Psychology*, Vol. 39 No. 6, pp. 1161-1178.

11  
12 Skogens, L., and Von Greiff, N. (2014), “Recovery capital in the process of change—  
13  
14 Differences and similarities between groups of clients treated for alcohol or  
15  
16 drug problems”, *European Journal of Social Work*, Vol. 17 No. 1, pp. 58–73.

17  
18  
19 Sutton, D. J., Hocking, C. S., and Smythe, L. A. (2012), “A phenomenological study  
20  
21 of occupational engagement in recovery from mental illness”, *Canadian*  
22  
23 *Journal of Occupational Therapy*, Vol. 79 No. 3, pp. 142–150.

24  
25  
26 Tew, J. (2013), “Recovery capital: What enables a sustainable recovery from mental  
27  
28 health difficulties?”, *European Journal of Social Work*, Vol. 16 No. 3, pp. 360–  
29  
30 374.

31  
32  
33 Tew, J., Ramon, S., Slade, M., Bird, V., Melton, J., and Le Boutillier, C. (2012),  
34  
35 “Social factors and recovery from mental health difficulties: A review of the  
36  
37 evidence”, *The British Journal of Social Work*, Vol. 42 No. 3, pp. 443–460.

38  
39  
40 Topor, A., Borg, M., Di Girolamo, S., and Davidson, L. (2011), “Not just an individual  
41  
42 journey: Social aspects of recovery”, *International Journal of Social*  
43  
44 *Psychiatry*, Vol. 57 No. 1, pp. 90–99.

45  
46  
47 Vandekinderen, C., Roets, G., Roose, R., and Van Hove, G. (2012), “Rediscovering  
48  
49 recovery: Reconceptualizing underlying assumptions of citizenship and  
50  
51 interrelated notions of care and support”, *The Scientific World Journal*, pp. 1–  
52  
53 7.

54  
55  
56 Vervliet, M., Reynaert, D., Verelst, A., Vindevogel, S., and De Maeyer, J. (2019), ““If  
57  
58 you can’t follow, you’re out”. The perspectives of people with mental health  
59  
60

1  
2  
3 problems on citizenship”, *Applied Research in Quality of Life*, Vol. 14, pp.  
4  
5 891–908.  
6

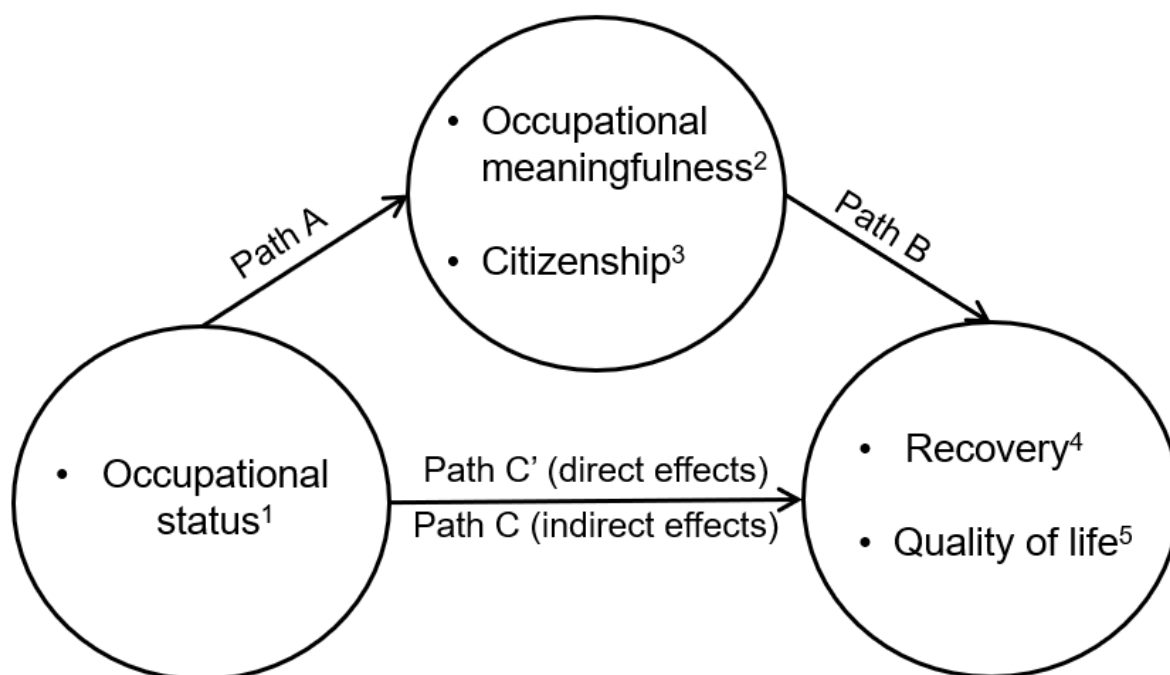
7  
8 Ware, N. C., Hopper, K., Tugenberg, T., Dickey, B., and Fisher, D. (2007),  
9  
10 “Connectedness and citizenship: Redefining social integration”, *Psychiatry*  
11  
12 *Services*, Vol. 58 No. 4, pp. 469–474.  
13

14  
15 White, W., and Cloud, W. J. C. (2008), “Recovery capital: A primer for addictions  
16  
17 professionals”, *Counselor*, Vol. 9 No. 5, pp. 22–27.  
18

19  
20 Wilcock, A. A. (2007), “Occupation and health: Are they one and the same?”, *Journal*  
21  
22 *of Occupational Science*, Vol. 14 No. 1, pp. 3–8.  
23

24  
25 Wild, D., Grove, A., Martin, M., Eremenco, S., Mcelroy, S., Verjee-Lorenz, A., and  
26  
27 Erikson, P. (2005), “Principles of good practice for the translation and cultural  
28  
29 adaptation process for patient-reported outcomes (PRO) measures: Report of  
30  
31 the ISPOR Task Force for Translation and Cultural Adaptation”, *Value in*  
32  
33 *Health*, Vol. 8 No. 2, pp. 94–104.  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Figure 1. Illustration of occupational meaningfulness and citizenship as mediators between occupational status, and recovery and quality of life



<sup>1</sup> Independent variable.

<sup>2</sup> Mediation variable consisting of two measures; "Satisfaction with occupations", and "Sense of engagement in occupations".

<sup>3</sup> Mediation variable consisting of seven domains; "Connectedness", "Government and infrastructure", "Caring for others", "Civil rights", "Legal rights", "Choice", and "Community participation".

<sup>4</sup> Dependent variable consisting of five domains; "Goal and success orientation", "Willingness to ask for help", "Reliance on others", "Personal confidence and hope", and "Not dominated by symptoms".

<sup>5</sup> Dependent variable consisting of three measures; life satisfaction, positive affect, and negative affect.

Table 1. Sample characteristics (N = 104)

		<i>n</i> (%)
<i>Gender</i>	Men	76 (73.1)
	Women	28 (26.9)
<i>Age</i>	≤ 40	20 (19.6)
	> 40	82 (80.4)
<i>Marital status</i>	Single	70 (69.3)
	Married/cohabitating	7 (6.9)
	Divorced/separated	15 (14.9)
	Widow/widower	4 (4.0)
	Other	5 (5.0)
<i>Education</i>	Elementary school	28 (28.6)
	High school (partial)	21 (21.4)
	High school (complete)	16 (16.3)
	Further education/courses	28 (28.6)
	Bachelor's degree/equivalent	4 (4.1)
	Master's degree/equivalent	1 (1.0)
<i>Occupational status*</i>	Ordinary employment	9 (7.6)
	Qualification program	11 (9.3)
	Student	2 (1.7)
	Peer or voluntary work	7 (5.9)
	Stay-at-home parent	0 (0)
	Other occupation	39 (33.5)
	Unemployed	50 (42.4)
<i>Source of income*</i>	Salary	9 (8.2)
	Social security benefits	82 (74.6)
	Other income	19 (17.3)

\* Multiple choice item. Percentages were calculated based on the total number of responses.

Table 2. Descriptive statistics of study variables

	<i>n</i>	<i>M</i>	95% CI
<i>Recovery</i> <sup>a</sup>	104	3.79	(3.66-3.91)
Goal and success orientation	104	4.16	(4.01-4.32)
Willingness to ask for help	102	3.80	(3.61-3.99)
Reliance on others	104	3.69	(3.52-3.86)
Personal confidence and hope	104	3.71	(3.56-3.86)
Not dominated by symptoms	100	3.45	(3.25-3.65)
<i>Quality of life</i>			
Life satisfaction <sup>b</sup>	103	4.44	(4.11-4.76)
Positive affect <sup>c</sup>	102	5.48	(4.91-6.05)
Negative affect <sup>d</sup>	100	3.48	(3.01-3.96)
<i>Occupational meaningfulness</i>			
Satisfaction with occupations <sup>f</sup>	103	4.32	4.04-4.60
Sense of engagement in occupations <sup>g</sup>	99	2.69	2.54-2.85
<i>Citizenship</i> <sup>e</sup>	102	3.74	3.60-3.87
Connectedness	102	3.82	3.67-3.97
Government and infrastructure	100	3.45	3.25-3.64
Caring for others	101	3.57	3.39-3.75
Civil rights	101	3.51	3.33-3.70
Legal rights	101	4.13	3.95-4.31
Choice	101	4.04	3.87-4.22
Participation	101	3.33	3.14-3.53

<sup>a</sup> Measured with the 24-item Recovery Assessment Scale – Revised (RAS-R). Possible scores range between 1 (*Completely disagree*) and 5 (*Completely agree*).

<sup>b</sup> Measured with a single item from the 16-item Manchester Short Assessment of Quality of Life (MANSA) (satisfaction with life as a whole). Possible scores range between 0 (*Could not be worse*) and 7 (*Could not be better*).

<sup>c</sup> Measured with an index of two items assessing positive affect experienced yesterday (happy, engaged). Possible scores range between 0 (*Not at all yesterday*) and 10 (*All the time yesterday*).

<sup>d</sup> Measured with an index of four items assessing negative affect experienced yesterday (worried, sad, angry, lonely). Possible scores range between 0 (*Not at all yesterday*) and 10 (*All the time yesterday*).

<sup>e</sup> Measured with the 44-item Citizenship Measure. Possible scores range between 1 (*Not at all/Never*) to 5 (*Very often/Always*).

<sup>f</sup> Measured with an index of three items from the Manchester Short Assessment of Quality of Life (MANSA) (satisfaction with occupation, leisure, and education).

<sup>g</sup> Measured with the 12-item Engagement in Meaningful Activities Survey (EMAS). Possible scores range between 1 (*Rarely*) and 4 (*Always*).

Table 3. Associations between occupational status, occupational meaningfulness, and citizenship<sup>a</sup>

	<i>Occupational meaningfulness</i>		<i>Citizenship</i>						
	Satisfaction with occupations	Sense of engagement in occupations	Connectedness	Government and infrastructure	Caring for others	Civil rights	Legal rights	Choice	Community participation
Occupational status	.30 (-.28-.88) <sup>n.s.</sup>	.20 (-.11-.51) <sup>n.s.</sup>	.24 (-.07-.54) <sup>n.s.</sup>	.18 (-.22-.57) <sup>n.s.</sup>	.53 (.16-.90)**	.07 (-.32-.46) <sup>n.s.</sup>	-.02 (-.40-.36) <sup>n.s.</sup>	-.09 (-.45-.27) <sup>n.s.</sup>	.55 (.17-.94)**

<sup>a</sup> The coefficients reported in the table are B coefficients and 95% confidence intervals for B.

\*\*  $p < .01$ ; n.s. =  $p > .05$

Advances in Dual Diagnosis

Table 4. Associations between occupational meaningfulness, citizenship, recovery and quality of life<sup>a</sup>

	Recovery					Quality of life		
	Goal and success orientation	Willingness to ask for help	Reliance on others	Personal confidence and hope	Not dominated by symptoms	Life satisfaction	Positive affect	Negative affect
<i>Occupational meaningfulness</i>								
Satisfaction with occupations	.19 (.09-.30)**	.16 (.03-.30)*	.10 (-.02-.22) <sup>n.s.</sup>	.21 (.11-.31)***	.13 (-.02-.28) <sup>n.s.</sup>	.78 (.61-.96)***	.45 (.05-.84)*	-.41 (-.74--.08)*
Sense of engagement in occupations	.54 (.37-.72)***	.42 (.17-.66)**	.50 (.30-.69)***	.52 (.35-.69)***	.23 (-.05-.50) <sup>n.s.</sup>	1.10 (.71-1.48)***	1.39 (.67-2.10)***	-1.18 (-1.79--.57)***
<i>Citizenship</i>								
Connectedness	.40 (.20-.60)***	.42 (.17-.67)**	.50 (.30-.71)***	.41 (.22-.60)***	.35 (.07-.63)*	1.09 (.71-1.48)***	1.15 (.42-1.89)**	-1.18 (-1.79--.57)***
Government and infrastructure	.32 (.16-.47)***	.18 (-.02-.39) <sup>n.s.</sup>	.27 (.10-.43)**	.19 (.04-.35)*	.24 (.03-.45)*	.47 (.13-.82)**	.49 (-.11-1.09) <sup>n.s.</sup>	-.53 (-1.05--.01)*
Caring for others	.26 (.10-.43)**	.17 (-.04-.38) <sup>n.s.</sup>	.33 (.17-.50)***	.25 (.09-.40)**	.23 (.01-.45)*	.86 (.54-1.18)***	.95 (.36-1.54)**	-.66 (-1.18--.14)*
Civil rights	.31 (.15-.47)***	.35 (.15-.55)**	.28 (.11-.45)**	.29 (.14-.44)***	.27 (.05-.49)*	.93 (.63-1.24)***	.75 (.16-1.34)*	-.96 (-1.45--.47)***
Legal rights	.26 (.09-.43)**	.28 (.07-.49)**	.32 (.15-.49)***	.21 (.05-.37)*	.25 (.02-.48)*	.97 (.66-1.28)***	.34 (-.28-.97) <sup>n.s.</sup>	-1.00 (-1.49--.50)***
Choice	.21 (.02-.39)*	.28 (.06-.51)*	.30 (.12-.49)**	.32 (.15-.48)***	.35 (.11-.60)**	.89 (.54-1.24)***	.46 (-.20-1.12) <sup>n.s.</sup>	-1.28 (-1.80--.76)***
Community participation	.31 (.15-.46)***	.24 (.04-.43)*	.31 (.15-.47)***	.29 (.14-.43)***	.31 (.11-.52)**	.73 (.41-1.04)***	.93 (.37-1.49)**	-.62 (-1.13--.12)*

<sup>a</sup> The coefficients reported in the table are B coefficients and 95% confidence intervals for B.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; <sup>n.s.</sup> =  $> .05$

Table 5. Direct, indirect and total effects of occupational status, caring for others and community participation, on recovery and quality of life ( $n = 99$ )<sup>a</sup>

Independent variable	Mediating variables	Dependent variables	Direct effect	Indirect effect	Total effect	Percentage of total effect accounted for by mediation
<i>Occupational status</i>	<i>Caring for others<sup>b</sup></i>	<i>Recovery</i>				
		Goal and success orientation	.16 (-.17-.48) <sup>n.s.</sup>	.13 (.02-.29)*	.28 (-.04-.61) <sup>n.s.</sup>	45%
		Willingness to ask for help	n.e.	n.e.	n.e.	n.e.
		Reliance on others	-.04 (-.36-.29) <sup>n.s.</sup>	.18 (.04-.37)*	.14 (-.19-.48) <sup>n.s.</sup>	n.a.
		Personal confidence and hope	.09 (-.22-.40) <sup>n.s.</sup>	.12 (.01-.31)*	.21 (-.09-.52) <sup>n.s.</sup>	57%
		Not dominated by symptoms <sup>c</sup>	.20 (-.23-.62) <sup>n.s.</sup>	.11 (-.00-.26) <sup>n.s.</sup>	.31 (-.10-.72) <sup>n.s.</sup>	37%
		<i>Quality of life</i>				
		Life satisfaction	-.01 (-.64-.62) <sup>n.s.</sup>	.45 (.12-.84)*	.44 (-.24-1.12) <sup>n.s.</sup>	n.a.
		Positive affect	1.21 (.08-2.35)*	.40 (.03-1.07)*	1.62 (.49-2.74) <sup>n.s.</sup>	25%
		Negative affect <sup>c</sup>	.01 (-1.00-1.02) <sup>n.s.</sup>	-.32 (-.71-.03) <sup>n.s.</sup>	-.31 (-1.31-.69) <sup>n.s.</sup>	n.a.
	<i>Community participation<sup>b</sup></i>	<i>Recovery</i>				
		Goal and success orientation	.12 (-.19-.44) <sup>n.s.</sup>	.16 (.04-.33)*	.28 (-.04-.61) <sup>n.s.</sup>	56%
		Willingness to ask for help	.03 (-.38-.44) <sup>n.s.</sup>	.13 (.01-.33)*	.16 (-.24-.55) <sup>n.s.</sup>	82%
		Reliance on others	-.03 (-.36-.30) <sup>n.s.</sup>	.17 (.05-.34)*	.14 (-.19-.48) <sup>n.s.</sup>	n.a.
		Personal confidence and hope	.06 (-.24-.36) <sup>n.s.</sup>	.15 (.03-.32)*	.21 (-.09-.52) <sup>n.s.</sup>	71%
		Not dominated by symptoms <sup>c</sup>	.13 (-.29-.55) <sup>n.s.</sup>	.18 (.04-.37)*	.31 (-.10-.72) <sup>n.s.</sup>	57%
		<i>Quality of life</i>				
Life satisfaction	.04 (-.61-.69) <sup>n.s.</sup>	.40 (.10-.76)*	.44 (-.24-1.12) <sup>n.s.</sup>	90%		
Positive affect	1.20 (.06-2.33)*	.42 (.06-1.00)*	1.62 (.49-2.74)*	26%		
Negative affect <sup>c</sup>	.00 (-1.01-1.01) <sup>n.s.</sup>	-.31 (-.78-.01)*	-.31 (-1.31-.69) <sup>n.s.</sup>	n.a.		

<sup>a</sup> All analyses used age and gender as control variables.

<sup>b</sup> Citizenship domain.

<sup>c</sup>  $n = 97$

\*  $p < .05$ ; n.s. =  $> p .05$

n.a. Not applicable as calculations produced percentages greater than 100%.



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46

n.e. Not executed due to non-significant associations between the independent variable and the mediator, as well as between the mediator and the dependent variable.

Advances in Dual Diagnosis