

**Measuring perceived outcomes from participating at a clubhouse for persons with
mental illness: psychometric properties and associated factors**

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Abstract

Background: The clubhouses are part of a growing international movement concerned with providing work-oriented psychosocial rehabilitation for people with a history of mental illness. Instruments used for measuring outcomes from clubhouse participation is in a developing phase.

Aims: This study aimed to assess psychometric properties of an outcome survey tool used at a Norwegian clubhouse, and to explore factors associated with members' perceived outcomes from participation at the clubhouse.

Methods: A cross-sectional design was used. The instrument's factor structure was examined with Principal Components Analysis (PCA), and internal consistency was assessed with Cronbach's α . Associations with the derived outcome scale score were examined with linear regression analysis.

Results: All scale items belonged to the same latent factor, and internal consistency of the items was $\alpha = 0.81$. Members, who used the clubhouse more frequently perceived the outcomes from participating to be better, compared to their counterparts.

Conclusion: The outcome scale was unidimensional and the items fit well together. Active members were likely to evaluate outcomes of clubhouse participation as more positive, compared to less active members.

Significance: The scale can be useful for exploring clubhouse members' perceptions of the outcomes they relate to their participation at the clubhouse.

Keywords: clubhouse, mental health, outcome, psychometrics, scale

Introduction

Clubhouses are part of a growing international movement concerned with providing work-oriented psychosocial rehabilitation for people with a history of mental illness (1, 2). The clubhouse functions as a workplace, promoting learning and development based on the members' own premises. The social aspect of the clubhouse, the community of members and employed staff, is emphasized (3, 4). Members of the clubhouse work together with staff to run the different operations of the house, thus preparing for the work in the open labor market. For this reason, the clubhouse is systematically understaffed – the members' own participation is in fact required for the clubhouse to function.

Research studies have described the clubhouse as an environment where the members can thrive and develop (5, 6). A number of studies have reported positive experiences with the clubhouse process; that is, with members' perceptions of what takes place at the clubhouse and how they personally become engaged there. In general, meaningful work tasks in combination with a supportive social environment are found to be important aspects (5-9). More specifically, in a study of clubhouse members in Australia, Hancock and co-workers (10) found that the meanings derived from the work tasks at the clubhouse were largely social. Having a connection to others, and being valued by others, were considered far more important than other sources of meaning.

In this field of research, comparative designs are still rare. Almost 20 years ago, Jacobs (11) found higher levels of satisfaction among clubhouse members compared with persons in a control group, who participated in community-based outings. More recently, and based on the same dataset as the current study, Ritter and co-workers (12) demonstrated high levels of satisfaction among members of a clubhouse in Norway. Further, member satisfaction increased with using the clubhouse more frequently. Hultqvist and co-workers (13) compared perceptions about the program held by clubhouse members to those held by users of day

centers in Sweden. They found that the clubhouse program received higher ratings on choice and ability to influence decisions, and on the unit's social network, compared to the day center. Thus, the levels of peer support and user involvement seem to be advantages held by clubhouses, in comparison to traditional activity centers organized by the healthcare services.

In Norway, the number of clubhouses is increasing and their ideology and methods appear to fit well with the current policies, emphasizing engagement in meaningful occupations, independent living and social participation, rather than a narrow medical focus on remediation from illness and symptoms (14, 15). Outcome-focused studies related to clubhouses have mostly been concerned with employment (16, 17), and a review found that clubhouses were an effective means for supporting employment, reducing hospitalizations, improving quality of life, and increasing social integration and social competence (18). However, the clubhouse model is largely experience based, and there is still little research evidence related to the wider array of outcomes that may emanate from participating at the clubhouse. There is a lack of validated instruments that might be used to measure such outcomes (19, 20), and evidence is missing with respect to the factors that may influence such outcomes. In view of this, further research is needed to develop and validate assessment tools, and then to use these tools to examine clubhouse members' outcomes, and factors associated with the outcomes. This may increase our understanding of the possible benefits members can have from participating at a clubhouse.

Study aims

There were two aims of this study. The first was to report on the psychometric properties of an instrument for measuring clubhouse members' outcomes from their participation at the clubhouse. Second, using the scales derived from this instrument as outcomes, we examined the extent to which member characteristics, their participation in work, and their frequency of using the clubhouse were associated with the outcomes.

Methods

Design and data collection

This cross-sectional design study was conducted at one accredited clubhouse in Norway. The survey items were originally developed by clubhouse members and staff in collaboration, and the development process was guided by the internationally established clubhouse standards (21). The standards emphasize lifelong, voluntary membership; positive, nurturing relationships on equal footing; a daily routine organized by work activities; and participation in society, exemplified by support for education and employment outside the Clubhouse. All data were self-reported by the clubhouse members, and clubhouse members and staff collected the data in collaboration during the winter of 2016.

Sample

All clubhouse members were eligible participants in the study. There were no exclusion criteria. At the time of collecting the data, the clubhouse had 151 active members, and 94 (62.3 %) of these opted to participate.

Measurement

Selected sections of the survey were addressed in the current study. The respondents indicated their age group (21-30 years, 31-40 years, 41-50 years, 51-60 years, 61 years and above), gender (male, female, transperson), and highest completed education level. Education was later dichotomized into a variable indicating up to high school level (0) vs. bachelor's degree level or higher (1). The participants also indicated their work status (not in paid work = 0, vs. in paid work = 1), work experience (five years or less = 0, vs. six years or more = 1) and how frequently the clubhouse was used (4-5 days per week, 1-3 days per week, about every other week, and less frequently than every other week).

In addition, one section with six statements, concerning how the respondent feels affected from his or her participation at the clubhouse, constitutes the outcome measure in this study. The content of the items relate to thriving (item 1), day structure (item 2), participation in society (item 3), safety (item 4), community participation (item 5), and self-confidence (item 6). All statements were rated on a five-point Likert scale from 1 (very negatively affected) to 5 (very positively affected).

Analysis

Descriptive analyses used frequencies and percentages for categorical variables and means and standard deviations for continuous variables (scale scores). Two persons reported transperson to be their gender, and these were removed from the dataset prior to the multivariate analyses. Latent factors were investigated using an exploratory Principal Components Analysis (PCA). The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (22) and Bartlett's Test of Sphericity (23) were used to assess whether factorization was adequate. KMO values should exceed 0.60 in order to proceed with the analysis (22, 24). Factor extraction was determined by inspecting the scree-plots, assessing Eigenvalue (λ) estimates and assessing the proportion of the data variance that was explained by the factors. Factors with $\lambda > 1$ and/or factors explaining more than 10 % the variables' variance proportions were retained. In addition, Parallel Analysis was used (25). This analysis is known to be more restrictive with a view to the number of factors to extract, and is therefore used as a means to ascertain that one does not overestimate the number of extracted factors (26). The method proposes that one should retain factors with an actual λ exceeding the randomly generated λ of the corresponding factor in a random dataset with the same number of variables and respondents. The reported statistical measures also include communalities, indicating the variance proportion of each variable explained by the factors together, and factor loadings as estimates of the impact from a given variable on each factor. Factor

loadings > 0.40 were considered high. Internal consistency of the scales was examined with Cronbach's α , and coefficients exceeding 0.70 were considered satisfactory.

Finally, a multivariate hierarchical linear regression analysis was conducted to investigate independent associations between the independent variables and the outcome scale(s) derived from the preceding PCA. Independent variables were included in three subsequent blocks, with block 1 representing member background (age group, gender, and education level), block 2 representing work factors (currently working/not working, and level of prior work experience) and block 3 representing one variable assessing the frequency with which the clubhouse was used. The SPSS software was used for all analyses, and statistical significance was set at $p < 0.05$.

Ethics

All members of the clubhouse were informed about the survey by the clubhouse staff and involved members. Participation was voluntary, the data were collected anonymously, and completing and returning the survey implied informed consent to participate. As the collected data was anonymous and not related to health and/or illness, formal approval from the Regional Ethics Committee for Healthcare Research or the Data Protection Official for research was not required.

Results

Sample characteristics

The sociodemographic, work-related and clubhouse-related characteristics of the sample is displayed in Table 1. Ninety-four clubhouse members completed the survey. Sixty-one participants (64.9 %) was at the age of 50 years or younger. There were 45 (47.9 %) men and 47 (50.0 %) women in the sample, and two participants indicated their gender to be "transperson". The larger proportion had not completed higher education ($n = 58, 62.4 \%$).

Nineteen participants (20.2 %) reported having a paid job. Fifty-seven participants (60.6 %) indicated having work experience of six years or more, whereas 30 participants (31.9 %) indicated that their work experience was five years or less. Based on 89 valid responses, 21 participants (22.3 %) stated that they used the clubhouse less frequently than every other week. Three participants (3.2 %) used the clubhouse about every other week, while a majority used it one to three days per week ($n = 48$, 51.1 %) or four to five times per week ($n = 17$, 18.1 %).

[TABLE 1 ABOUT HERE]

Outcomes from participating at the clubhouse

The participants' responses to the six statements concerning their perceived outcomes from participating at the clubhouse are shown in Table 2. The responses indicated that the participants experienced positive outcomes in all areas, scores ranging from 3.79 (participation in society) to 4.25 (thriving in general).

[TABLE 2 ABOUT HERE]

Factor structure and internal consistency

The results from the PCA and scale consistency analysis are displayed in Table 3. As the first step in the second PCA, we found that the KMO value was 0.82, and Bartlett's test of sphericity was statistically significant ($p < 0.001$). The items' communalities ranged between 0.37 (participation) and 0.65 (thriving and safety). There was only one factor with Eigenvalue > 1 : Factor 1, $\lambda = 3.11$, explaining 51.9 % of the data variance. The Parallel Analysis also supported the extraction of only one factor, as the randomly generated λ of a second factor (λ

= 1.19) was higher than the actual λ (0.81) of the second potential factor from the PCA. The component matrix showed that all items loaded substantially on the proposed factor, with loadings ranging between 0.61 (participation) and 0.81 (safety). The internal consistency of the items Cronbach's $\alpha = 0.81$.

[TABLE 3 ABOUT HERE]

Factors associated with the outcome scale

Using the sum score of the scale items as outcome, a higher sum score would indicate experiencing outcomes that were more favorable. Conversely, a lower sum score would indicate outcomes that were less favorable. There was no floor effect, as no scores were below 16 (score range 6-30). Four participants (4.4 %) had the highest possible score of 30, whereas 25 (26.5 %) scored in the range 26-30, indicating the possibility of a ceiling effect.

The results from the regression analysis are shown in Table 4. One variable was significantly associated with the outcome scale. Using the clubhouse more frequently was associated with outcomes that were more favorable ($\beta = 0.25$, $p = 0.03$). The "Use of the clubhouse" variable had the largest contribution to the explained outcome variance (6.0 %, $p < 0.05$), and the full model explained 12.6 % of the variance.

[TABLE 4 ABOUT HERE]

Discussion

Items that reflect central aspects of the clubhouses' aim – to assist members feel safe and to thrive, and to be a secure base from which members can regain a role in society – comprised the outcome measure in this study. This is the first study to investigate the psychometric

properties of this particular instrument for measuring outcomes from participating at the clubhouse, and we also examined factors associated with the scale. The results suggest that the outcome scale is unidimensional and has good internal consistency between its items. However, our statistical model explained only a small portion of its variance, and only one variable – the members' frequency of attending the clubhouse – was significantly associated with an improved perceived outcome.

The pattern of responses showed that the six items loaded onto one component, representing one common core construct. Thus, the authors propose that the measure should be viewed as a one-dimensional scale for assessing members' perceived outcomes from participating at a clubhouse. In comparison, previous studies concerned with members' overall satisfaction with using the clubhouse have found both one-factor and two-factor solutions to be applicable to the data (19, 20). This might suggest that while the process related to using the clubhouse can be seen as multifaceted, the members' perception of the outcomes appears to be unidimensional. Therefore it makes sense to consider individual member's perceived outcome to be placed somewhere along a continuous scale, representing the movement from poorer to better outcomes. It should be noted, however, that the outcome measure used in this study may not include all relevant aspects of the members' outcome perceptions. If other items were included in the measure, the factor structure of the scale may have been different.

The scales items' internal consistency was very high ($\alpha = 0.81$). The commonly used Cronbach's α estimate should exceed at least 0.70 to be considered acceptable, and should preferably exceed 0.80 (27). The interpretation of the high internal consistency is that the items included in the scale are strongly correlated. Therefore, they may be considered as reflecting somewhat different, yet strongly interrelated aspects of the members' perceived outcome from their participation at the clubhouse.

Frequent use of the clubhouse was associated with higher scores on the outcome scale, and conversely, less frequent use was associated with lower scores. This mirrors the results of Ritter and co-workers' recent study (12), where higher frequency of attendance was found to be associated with higher levels of satisfaction with the clubhouse. Frequency of attendance therefore seems to be associated with both the process (satisfaction with the clubhouse) and the outcomes of participating at the clubhouse. International research literature shows that clubhouses propose an environment that provides to its members a sense of community and affiliation where members can engage in tasks they deem meaningful (5-8, 10, 28). Frequent use of the clubhouse may indicate that the members feel they have the opportunity to do something worthwhile, and that they feel part of a community where they can thrive and belong. In addition, members frequently visiting the clubhouse may have felt autonomous and in a position to influence decisions. As pointed out by Hultqvist and co-workers (13), this appears to be a prominent feature of the clubhouse environment. In turn, such perceptions of the members' own role and possibilities at the clubhouse may contribute to increase attendance. Thus, the direction of association may go both ways: frequent use of the clubhouse may improve outcomes (a wider social network, increased self-confidence and participation). Experiencing such outcomes, and linking them with what takes place at the clubhouse, may again contribute to increase attendance.

Forsyth (29) argued that group relationships develop based on frequent interactions over time. As noted from previous research, higher frequency of clubhouse use predict lower levels of social isolation (30). Thus, frequent use of the clubhouse could indicate that members feel they belong to, and take part in, society. Studies have found that the differences between members could contribute to them becoming resources for each other, such that the individual can both provide and receive support. In turn, this may result in building confidence in oneself and one's resources (7, 31, 32). Moreover, the member who feels that

(s)he is a resource for and matter to others, may feel more obliged to use the clubhouse more frequently because (s)he is in a position to provide support for others. Thus, feeling a sense of purpose that may result in building confidence in oneself and one's own resources.

Study limitations

This study was based on a relatively small sample, and all the members were from one particular clubhouse in Norway. The lack of information concerning the participants' diagnosis or illness severity, psychosocial functioning, length of membership and possibly other factors limit the scope of the study results, such that generalizations based on this study should be made with caution. We used a cross-sectional study design, where data was collected only from one point in time. Thus, casual inferences should not be made. The associations between outcome scale scores and frequency of use of the clubhouse may be reciprocal rather than unidirectional: Frequent use of the clubhouse may lead to improved outcomes, and experiencing improvements may logically translate into increased attendance. The outcome scale should be psychometrically examined in larger and more varied samples of clubhouse members. Tendencies toward ceiling effects should be explored, as should the measure's concurrent validity (strength of association with conceptually similar measures). Measures of well-being, self-confidence and participation might be included in further studies of concurrent validity. As the regression model explained only a small variance proportion of the outcome scale score, other variables should be included as independent variables in future studies. Further, the members' process and outcomes related to their participation at the clubhouse should be investigated in a longitudinal perspective.

Conclusion

The outcome scale was unidimensional and the items fit well together. The scale can therefore be useful for exploring clubhouse members' perceptions of the outcomes they relate to their participation at the clubhouse. Compared with members who used the clubhouse less

frequently, the members who used the clubhouse more frequently reported better outcomes from their participation. Overall, this study suggests that frequent use of the clubhouse may contribute to a person's perceived outcomes from participating. Outcomes would include the ability to take part in a community, participation in society, confidence in oneself and one's resources, and thriving in general.

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Table 1

Characteristics of the study participants

	<i>n</i>	%
<i>Age group</i>	94	100
21-30 years	11	11.7
31-40 years	25	26.6
41-50 years	25	26.6
51-60 years	23	24.5
61 years and above	10	10.7
<i>Gender</i>	94	100
Men	45	47.9
Women	47	50.0
Transperson	2	2.1
<i>Education (highest completed)</i>	93	98.9
Elementary school or high school	58	62.4
College or university	35	37.2
<i>Work</i>	94	100
In paid work	19	20.2
<i>Use of the clubhouse</i>	89	94.7
4-5 days per week	17	18.1
1-3 days per week	48	51.1
About every other week	3	3.2
Less frequently than every other week	21	22.3

Note. On variables with missing responses ($n < 94$), the valid percentage is reported.

Table 2

The members' perceived outcomes from participating at the clubhouse

Do you feel that participating at the clubhouse has affected you in any of the following areas?

		<i>n</i>	<i>M (SD)</i>	Min-Max
1	Experience of thriving in general	91	4.25 (0.59)	3-5
2	Ability to structure the day	90	3.84 (0.69)	1-5
3	Participation in society	91	3.79 (0.85)	1-5
4	Experience of safety in general	90	4.00 (0.69)	2-5
5	Ability to take part in a community	90	4.09 (0.71)	2-5
6	Confidence in myself and in my resources	90	3.91 (0.70)	2-5

Note. Respondents score each statement on a scale: 1 (very negatively affected), 2 (negatively affected), 3 (don't know/little affected), 4 (positively affected), and 5 (very positively affected). *n* indicates the number of valid responses for each statement.

Table 3

Factor solution of the perceived outcomes scale

Items	Factor 1	Communalities
Experience of safety in general	0.81	0.65
Experience of thriving in general	0.81	0.65
Ability to take part in a community	0.76	0.58
Ability to structure the day	0.67	0.45
Confidence in myself and in my resources	0.64	0.41
Participation in society	0.61	0.37
Eigenvalue	3.11	
Cronbach's α	0.81	
Explained variance	51.9 %	

Note. Results derived from the exploratory Principal Component Analysis and scale reliability analysis.

Table 4

Hierarchical linear regression analysis showing independent associations with the outcome scale

Independent variables	Perceived outcome	
	<u>Std. β</u>	<u><i>p</i></u>
Age group	-0.21	0.10
Gender	0.09	0.44
Education	-0.02	0.85
Explained variance	5.5 %	0.22
Paid work	-0.02	0.84
Work experience	-0.07	0.62
R² change	1.1 %	0.64
Explained variance	6.6 %	0.38
Use of the clubhouse	0.25	0.03
R² change	6.0 %	0.03
Explained variance	12.6 %	0.11

Note. Table content is standardized β weights, indicating the strength of the relationship between the study variables. Variable coding: Higher “age group” is higher age, higher “gender” is female, higher “education” is higher education level, higher “paid work” is currently in paid work, higher “work experience” is more work experience, higher “use of the clubhouse” is more frequent use of the clubhouse. Higher scores on the perceived outcome scale indicates feeling more positively affected from participating at the clubhouse.