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Occupation, social support and quality of life in persons with schizophrenic or affective disorders

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Abstract *Background* Most people suffering from severe mental illness (SMI) lack paid employment. This study investigates the relationship between work status and objective as well as subjective quality of life (QoL) in people with SMI. *Methods* The sample consists of 261 subjects (102 women, 159 men) aged 35 (men) and 38 (women) years on average, of whom 158 suffer from a schizophrenic disorder (ICD-10: F2) and 103 were diagnosed as having an affective disorder (ICD-10: F3). Subjective QoL was assessed with the WHOQOL-BREF scale. *Results* Subjects with an occupation in general have a larger social network at their disposal and receive more social support. With regard to income, few (12 %) of the subjects with a job on the open labour market live below the poverty level, but many (28–38 %) of those engaged in sheltered or other work-like activities do. Occupation ameliorates satisfaction with life domains referring to social integration (social relationships, environment), whereas the individual's well-being (psychological, physical) is hardly affected. Social support is an important mediator of the relationship between occupation and subjective QoL. Income is weakly and negatively related to subjective QoL. *Conclusions* Supportive relationships to colleagues at the workplace mainly explain the better subjective QoL of SMI people with an occupation. When designing specific employment possibilities for people with SMI, we should take notice of the social support dimension at the workplace. Mentally ill people have a substantial poverty risk, even when they are working. In particular, payment for sheltered work should be ameliorated.

Key words employment – quality of life – schizophrenia – affective disorder – social support

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Introduction

Work is central to human existence: not only does it provide an income, but also a valued social position and identity. Work is positively related to mental health by promoting opportunities for skill development and social contacts [1]. As research in the field of vocational rehabilitation indicates, work ameliorates psychological well-being and other aspects of life of mentally ill people [2].

All the more striking are the figures of unemployment of people suffering from severe mental illness. A recent report of the WHO and ILO [3] estimates an unemployment rate of 90 % within the group of persons with a serious psychiatric background, and studies on employment outcome of mentally ill persons arrive at rates of 45 % to over 90 % of unemployment [4–6]. Mentally ill people are, as surveys indicate, strongly dissatisfied about not working and many express their desire for competitive employment [3, 7]. If they are asked what constitutes a good quality of life, psychiatric inpatients suffering from chronic schizophrenia mention most frequently social relationships and being employed [8, 9].

As the functions of work go far beyond economical security and independence of the individual, investigating the consequences of unemployment must include a broad area of measures. In this regard, quality of life (QoL) is a useful concept. At least two slightly different notions of QoL can be identified within the research literature [10]: (1) QoL in the sense of a subjective judgement of one's own physical, psychological and social

well-being, and (2) a more objective view concerning the 'living conditions' of a person as well as his or her physical, psychological and social functioning.

There is a debate on reasons for the often only moderate correlations between subjective and objective measures of QoL [11]. Modest correlations between subjective and objective measures of QoL may be a result of the individual having adapted his or her aspirations to the opportunities of the environment. Furthermore, research indicates that if we consider different domains of subjective QoL as well as objective living conditions in these domains, substantial relationships show [12]. This stresses the importance of a multi-area assessment of QoL instead of only using global measures [10], and the necessity of including both subjective and objective measures of QoL.

Several studies investigated the relationship between work and QoL in mentally ill people. Many related paid employment on the competitive labour market to QoL. Results indicate that having paid employment is associated with better subjective QoL, ameliorates social functioning and reduces psychiatric symptoms [13–17]. As one of the few, Bond et al. [18] compared different work settings, i. e. competitive employment, sheltered work, minimal work and a no-work condition, with respect to the QoL in people with SMI. Results favoured competitive employment, compared to minimal or no work, with higher rates of improvement in symptoms, in satisfaction with vocational services, leisure, and finances, and in self-esteem. However, the sheltered work group did not show such an advantage. Other authors also showed beneficial effects of vocational rehabilitation and work in a sheltered context for QoL [19, 20]. Thus, it seems necessary to differentiate between different kinds of occupation encompassing besides competitive employment also work within a sheltered context and even unpaid but work-like occupations such as caring for children and housework.

The present study addresses the following research questions: (1) What kind of work, including occupations beyond competitive employment, are people with severe mental illness (SMI) engaged in? And, how far are these occupations related to measures of objective as well as subjective quality of life (QoL)? (2) Is occupation related to subjective QoL when controlled for mental illness? and (3) How far is the relationship between occupation and subjective QoL mediated by objective QoL, in particular by economical conditions and social network?

Subjects and methods

Design and selection of subjects

This study was carried out between January 2000 and March 2001 in the inpatient facilities of the two largest mental hospitals of the Swiss canton of Zurich, the Psychiatric University Hospital and the 'Psychiatrie-Zentrum Hard'. The University Hospital is responsible for the mental health care of the city of Zurich and a part of its suburbs, whereas the clinic 'Hard' guarantees the care of the northern part of the canton Zurich called 'Unterland' and containing further suburbs of the city of Zurich as well as a large rural area. The two health care regions represent half (52 %) of the canton's population.

Because of the target population of this study, i. e. people with SMI, and good accessibility of possible participants, we have chosen a psychiatric inpatient sample. The sample might not represent an ideal population to investigate our research questions. However, for most of the people with SMI, inpatient treatment encompasses relatively short periods of time. The median length of stay in mental hospitals in the canton Zurich was 24 days in the year 2000.

Inclusion criteria for the study were being aged between 20 and 50 years, main diagnosis of schizophrenic or delusional disorder (ICD-10 F2) or affective disorder (F3), and sufficient knowledge of the German language. Recruitment of subjects was completed over several steps: (1) on entering hospital, every fourth inpatient fulfilling inclusion criteria was selected as a potential study participant (n = 1168); (2) in most of these cases (79 %), the treating doctor allowed contact with a selected inpatient with regard to his/her mental state; (3) with half (45 %) of all the selected inpatients, contact could be established by the research team; and (4) finally, a structured interview was completed with a quarter (24 %) of the selected subjects after their written informed consent had been obtained, i. e. with 282 inpatients (114 women, 168 men). In general the interview took place in the second or third week after treatment entry. The main reasons for subjects' dropout of the study were: (a) premature discharge (59 %) before any contact could be established with the inpatient (cf. step 3 and step 4); (b) denial of participation by the inpatient (29 %) (step 4); (c) refusal by the doctor (21 %) because of severity of illness as mentioned above (step 2); or (d) other reasons (5 %).

We compared the interview sample with the population of all admissions fulfilling inclusion criteria as well as study dropouts concerning the distribution of sex, age, education, living, employment, diagnosis and severity of illness (CGI) [21] assessed by the treating doctor. In both cases, compared with all admissions as well as with dropouts, the study sample differs significantly only in sex. Thus, in our sample men are over-represented with a quota of 62 % compared to 53 % in all admissions ($\chi^2 = 4.6$, $p = 0.03$, $\phi = -0.06$) as well as 53 % in dropouts ($\chi^2 = 4.0$, $p = 0.04$, $\phi = -0.08$).

Instruments

Subjective QoL was assessed by the German version of the WHOQOL instrument [22]. We used the short version of this instrument, the WHOQOL-BREF covering four QoL domains: physical health, psychological well-being, social relationships, and environment [23]. For the subscale 'social relationships', we used all items of the WHOQOL-100. The subjects' ratings were given on a five-point scale. The reliability of the subscales assessed by Cronbach's alpha was fairly good for psychological well-being ($\alpha = 0.79$) and social relationships ($\alpha = 0.75$), and sufficient for physical well-being ($\alpha = 0.68$) and quality of environment ($\alpha = 0.65$).

As a measure for social support, the LUNST scales [24] were used. The scales are currently employed in the Swiss Household Panel [25]. The social support scale has been adapted from the Social Support Questionnaire of Schaefer et al. [26]. It assesses perceived support by different groups of individuals (partner, friends, working mates, relatives, children aged over 15) on a five-point scale (0: no support to 4: strong support). Furthermore, the instrument allows for differentiating between emotional support (as spending time, showing understanding) and instrumental support (as helping, giving advice).

Further measures of objective QoL included housing (private residence, institution, no home), main source of living (own income, financial support by partner, social welfare), and income (net income per month in Swiss Francs).

The occupational situation of subjects was assessed by seven items covering: (1) employment on the competitive labour market; (2) sheltered workplace within the competitive labour market; (3) employment within a sheltered workshop; (4) occupation in a hospital-based rehabilitation unit; (5) educational activities; (6) unpaid home- or family work; and (7) no occupation of the kind mentioned above. Subjects were asked for how many months during the last year before the present hospitalisation they had followed one or more of

these occupations. For further analysis, we grouped subjects based on their main occupation. This was defined as the activity that subjects carried out for most of the time during the last year. In case of two or more occupations with the same duration of engagement, the proximity of an activity to competitive employment was decisive for the subject's grouping. Thus, competitive employment was preferred to sheltered work, sheltered work to education, education to unpaid housework, and the latter to no occupation.

Sample

For the present study, we only included those subjects in the analysis who had valid data for all of the interesting variables. Thus, the final sample consists of 261 (102 women, 159 men) subjects aged between 35 (men) and 38 (women) years on average. With regard to psychiatric diagnosis, 158 inpatients (111 men, 47 women) suffer from schizophrenia, schizotypal or delusional disorders (ICD-10: F2) and 103 subjects (48 men, 55 women) were diagnosed as having an affective disorder (ICD-10: F3). The diagnostical subgroups within the F2-category are F20 (n = 103), F23 (n = 29), F25 (n = 23) and others (n = 3). The main subgroups of affective disorders are F32 (n = 39), F33 (n = 25), F31 (n = 24) and a heterogeneous group of other F3-diagnoses (n = 15). The subjects' median age at onset of disorder was 23 years (25^{th} percentile = 22, 75^{th} percentile = 35 years) and age at first psychiatric treatment was 27 (22–35) years. Subjects reported on average (median) a total number of 6 (3–9) former psychiatric admissions. Around half of the inpatients (57 %) had not been in psychiatric inpatient treatment the year prior to the present hospitalisation, a quarter (27 %) report one admission and another 16 % report up to six admissions during the last year. Subjects with one admission last year stayed on average 17 (5–72) days in a mental hospital, subjects with more than one admission stayed 53 (10–118) days in hospital.

Statistical analysis

Chi-square tests and ANCOVA were used for exploratory analysis. The four QoL scales are substantially intercorrelated (between r = 0.40 and r = 0.65). It is useful to take these correlations into account and then investigate the unique effects of predictor variables on QoL domains. Furthermore, some of the effect of occupation on subjective QoL might be mediated by more objective life conditions. Therefore, we used Structural Equation Modelling (SEM) with latent variables as a tool for further analysis of data. For most parts of the statistical analysis, we used SPSS 10.0. The path model was estimated with LISREL 8.3.

Results

Types of occupation

In the present study, a subject's main occupation is defined as the activity that he/she carried out for most of the time during the last year prior to present psychiatric hospitalisation. Around half of the subjects were in a paid employment on the competitive labour market as their main occupation (n = 114; 44 %). Another 13 % of subjects (n = 31) were employed in a sheltered context, such as a sheltered work place within the competitive labour market, employment within a sheltered workshop or occupation in a hospital-based rehabilitation unit. A similar number of the interviewed mentally ill persons, i. e. 16 % (n = 43) were engaged in unpaid work-like activities encompassing education (n = 16; 6 %), caring for children (n = 14; 5 %), housework (n = 11; 4 %) and other work-like activities (n = 2; 1 %). Finally, around a quarter of the subjects had no occupation of any kind mentioned above (n = 73; 28 %).

Most of the subjects followed their main occupation as mentioned above throughout the whole year, i. e. 68 % of persons with competitive employment, 81 % with sheltered employment, and 75 % of those without any occupation. An exception is the group of subjects engaged in unpaid work, with only 40 % following this kind of occupation the whole year round. The majority of persons with ruptures in their working life during the last year were without any occupation for the rest of the time, which usually encompassed a few (less than 6) months. This was the case for 86 % of subjects working in a competitive job for less than one year, 83 % of people in sheltered work and 50 % of persons with unpaid work. However, subjects who were unoccupied for less than one year most often reported having worked in competitive (66 %) or sheltered settings (44 %) for some months.

Illness-related variables

Several illness-related variables have been assessed, such as age at onset of disorder, age at first psychiatric hospitalisation, number of psychiatric admissions during lifetime as well as during last year, days hospitalised last year, psychopathological symptoms (SCLGSI), or diagnosis. We conducted one-way ANOVAs with type of occupation as independent and illness characteristics as dependent variables. Results indicate that the type of occupation is significantly related to variables of the treatment career, i. e. number of psychiatric admissions during lifetime ($F = 5.4$, $p = 0.001$; Scheffé's multiple comparisons test [$\alpha \leq 0.05$]: competitive employment < sheltered work), number of admissions last year ($F = 3.2$, $p = 0.025$; Scheffé: competitive employment < without occupation) and days hospitalised last year ($F = 9.8$, $p < 0.001$; Scheffé: competitive employment, unpaid work < without occupation). Furthermore, diagnosis is related to occupation ($\chi^2 = 14.1$, $p = 0.003$, $\phi = 0.23$): inpatients with schizophrenia or delusional disorder are over-represented in sheltered work, whereas a higher number of inpatients suffering from an affective disorder were found in unpaid work. However, competitive employment as well as a lack of any occupation is hardly dependent on psychiatric diagnosis.

Measures of objective quality of life

Type of occupation is significantly linked to variables of objective QoL such as housing, living, income and social network (Table 1). Thus, whereas the majority (75 %) of subjects with competitive employment report supporting themselves on their own income, most of the other subjects are on welfare (64–90 %) or – in the case of inpatients with an unpaid occupation – being supported by their partner (29 %).

With regard to finances, a large number of subjects

Table 1 Occupation, living conditions and social network of psychiatric inpatients (N = 261)

	Occupation				
	I Competitive (N = 114)	II Sheltered (N = 31)	III Unpaid (N = 43)	IV No (N = 73)	Statistical analysis
Housing (2 missing)[a]	N (%)	N (%)	N (%)	N (%)	$\chi^2 = 25.3$*** [b]
Private residence	105 (93)	21 (68)	41 (95)	54 (74)	
Institution	3 (3)	10 (32)	0 (0)	13 (18)	
No home	4 (4)	0 (0)	2 (5)	6 (8)	
Living[c]	N (%)	N (%)	N (%)	N (%)	$\chi^2 = 135.9$*** [b]
Own income	86 (75)	1 (3)	3 (7)	4 (5)	
Partner	6 (5)	2 (7)	12 (29)	8 (11)	
Social security and others	22 (20)	28 (90)	27 (64)	61 (84)	
Income	N (%)	N (%)	N (%)	N (%)	$\chi^2 = 40.7$*** [d]
< 2000 sFr per month	24 (21)	16 (52)	16 (37)	36 (49)	
2000–2999 sFr per month	21 (19)	9 (29)	13 (30)	24 (33)	
3000–4999 sFr per month	46 (40)	5 (16)	10 (24)	9 (12)	
≥ 5000 sFr per month	23 (20)	1 (3)	4 (9)	4 (6)	
Social network	N (%)	N (%)	N (%)	N (%)	
Partner (y/n)	43 (38)	6 (19)	20 (46)	23 (31)	$\chi^2 = 6.6$[b]
Friends (y/n)	105 (92)	25 (81)	36 (84)	54 (74)	$\chi^2 = 11.4$* [b]
Colleagues, mates (y/n)	104 (91)	27 (87)	15 (35)	25 (34)	$\chi^2 = 89.2$*** [b]
Relatives (y/n)	99 (87)	25 (81)	33 (77)	48 (66)	$\chi^2 = 11.9$* [b]
Child(ren) (y/n)	24 (21)	6 (19)	23 (53)	22 (30)	$\chi^2 = 17.6$*** [b]
Social (emotional) support[e]	M (SD)	M (SD)	M (SD)	M (SD)	
Partner	1.1 (1.6)	0.6 (1.3)	1.3 (1.8)	0.8 (1.5)	F = 1.5[f]
Friends	2.7 (1.2)	1.9 (1.3)	2.3 (1.6)	1.8 (1.5)	F = 6.0*** I > IV[f]
Colleagues, mates	1.8 (1.4)	1.6 (1.3)	0.7 (1.4)	0.5 (1.0)	F = 19.2*** I, II > III, IV[f]
Relatives	2.2 (1.4)	2.0 (1.3)	1.9 (1.6)	1.6 (1.5)	F = 2.9* I > IV[f]
Child(ren)	0.2 (0.8)	0.2 (0.5)	0.6 (1.1)	0.1 (0.4)	F = 3.5* III > IV[f]

M mean; *SD* standard deviation

[a] for statistical analysis variable dichotomized home vs. other; [b] Pearson Chi-Square; [c] for statistical analysis variable dichotomized own income vs. other; [d] Kruskal-Wallis-Chi-Square; [e] 5-point Likert-scale: 0 (no support) – 4 (strong support); [f] ANOVA, multiple comparisons with Scheffé adjustment

without employment on the open labour market report living on less than 2000 sFr (1364 Euro, February 2003) per month. Finances refer to the net income of the subject's household. According to the guidelines of the Swiss Conference on Social Welfare (SKOS), around 12 % (n = 14) of subjects with a job on the open labour market would have to be defined as poor. For the other patient groups the respective proportions are 29 % (n = 9) of subjects with a sheltered workplace, 28 % (n = 12) of inpatients with an unpaid occupation and 38 % (n = 28) of inpatients without any occupation. In the canton of Zurich, the region of this research, around 7 % of the population lived below the poverty level in 2001 [27]. According to the SKOS-guidelines, the poverty level lies at 1110 sFr for a single person and at 2380 sFr for a family with two children.

Occupation is also related to the social network of subjects: with the exception of having a partner, the frequency of all other relationships is related to occupational status. Subjects with competitive employment are those with the most frequent regular contacts to several persons as they are friends, colleagues and relatives. On the other hand, subjects without any work-like occupation have the smallest social network with comparatively few contacts to close friends, colleagues and relatives. Inpatients with a sheltered or an unpaid occupation report few contacts to a single group of persons, but these few contacts might be compensated by the relationships to other groups, e. g. only a few of the subjects with a sheltered workplace have a partner, but they often have close friends and (work) mates.

Analysing emotional support as perceived by subjects clarifies the correlation between occupation and social network. In general, subjects receive most emotional support from relatives and close friends, but persons with competitive or sheltered employment also report their colleagues at the workplace to be an important source of emotional support. Results of instrumental support not listed in Table 1 resemble those of emotional support by indicating similar differences between the occupational groups.

Subjective quality of life

Occupation is related to three of the four assessed domains of subjective QoL, i. e. physical well-being, social relationships and environment. This even holds true when controlling for illness variables (diagnosis, symptoms, admissions during lifetime, days in psychiatric inpatient treatment last year) in an ANCOVA model (Table 2).

Multiple comparisons indicate that mentally ill persons with competitive employment as well as persons engaged in unpaid work-like activities report better subjective QoL than subjects without any occupation in the domains of social relationships and environment. Moreover, subjects in unpaid work are more satisfied with their physical well-being than subjects lacking an occupation. Mentally ill people with sheltered occupation differ in their subjective QoL neither from subjects engaged in competitive or unpaid work nor from persons lacking work-like occupation. However, this finding might be a result of small group size. Concerning illness variables, ANCOVA indicates significant (negative) effects of psychopathological symptoms and of diagnosis (affective disorder) on subjective QoL.

Occupation, objective and subjective quality of life

With regard to subjective QoL our data indicate that in particular the situation of subjects without any work-like occupation seems to be serious. Therefore, for further analysis of subjective QoL, we collapsed the variable occupation into two groups: with and without any work-like occupation. We then investigated to what degree the differences in subjective QoL can be explained by more objective conditions, such as the economic background and the social relationships of subjects, as well as the illness-related variables diagnosis and psychopathological symptoms.

We accomplished this multivariate analysis by using Structural Equation Modelling (SEM) with latent variables. As software tool, we used LISREL 8 [28]. Fig. 1 illustrates the construction of latent endogenous variables. Based on the evaluation of measures of data fit, the construction of two latent dimensions of subjective QoL was recommended: Satisfaction with Health and Satisfaction with Social Ties. The latent construct Social Support consists of the observed variables instrumental and emotional support. Living is represented by the observed variables income per month in sFr and the proportion of living that can be assured by own earnings. The three exogenous observed variables are no occupation, affective disorder and psychopathological symptoms.

Fig. 2 represents the structural model linking the variables of interest. The overall fit of the model is satisfying with an almost significant χ^2-value ($\chi^2 = 38.34$; $p = 0.092$), thus indicating that the hypothesised model does not differ significantly from the data. The 'root mean square error of approximation' (RMSEA) is a measure of discrepancy between the model and the population. A RMSEA of 0.050 or lower indicates a close fit. The present model had a RMSEA = 0.038. Additional fit statistics indicate a good model fit, as the 'adjusted goodness of fit index' (AGFI = 0.94) and the 'normed fit index' (NFI = 0.96) show. It is important to note that the present model allows the errors of some observed variables to correlate, namely the error of the WHOQOL-BREF scale 'satisfaction with social relationships' with the errors of the scales 'instrumental social support' and 'emotional social support'. Without incorporating this error correlation, the model would be misspecified ($\chi^2 = 53.34$; $p = 0.005$; RMSEA = 0.055). Correlated errors of observed variables indicate the existence of a common factor that is not assessed. In the present case, this could be a general satisfaction factor. It does not seem to be a method factor: support and QoL items are presented at quite different moments during the interview, and the wording of the items is also different.

Table 2 Subjective QoL, occupation and illness variables of psychiatric inpatients (ANCOVA)

	Subjective quality of life domains[a] (est. means)				
	Physical	Psychological	Social	Environment	Total[b]
Occupation					
I Competitive (N = 114)	58.5	52.2	60.5	66.6	58.3
II Sheltered (N = 31)	60.8	52.9	52.4	63.4	55.9
III Unpaid (N = 43)	60.1	54.0	59.8	64.5	58.8
IV Without any (N = 73)	52.0	50.3	50.3	55.7	51.7
Multiple comparisons[c]	III > IV	–	I, III > IV	I, III > IV	I, III > IV
Effects (ANCOVA, F)					
Occupation	3.4*	0.4	5.1**	7.0***	4.6**
Diagnosis (affective disorder)	2.1	13.5***	7.9**	5.7*	8.8**
Occ. x Diag.	0.6	0.2	0.9	2.1	0.3
Symptoms[d]	108.35***	95.0***	25.2***	11.8***	92.3***
Admissions lifetime	0.4	0.3	0.4	0.5	0.1
Days hospital last year	0.5	< 0.1	< 0.1	0.3	0.1

N = 261; estimated means
[a] WHOQOL-BREF; [b] sum of subscales; [c] multiple comparisons with Bonferroni adjustment; [d] SCLGSI
*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$

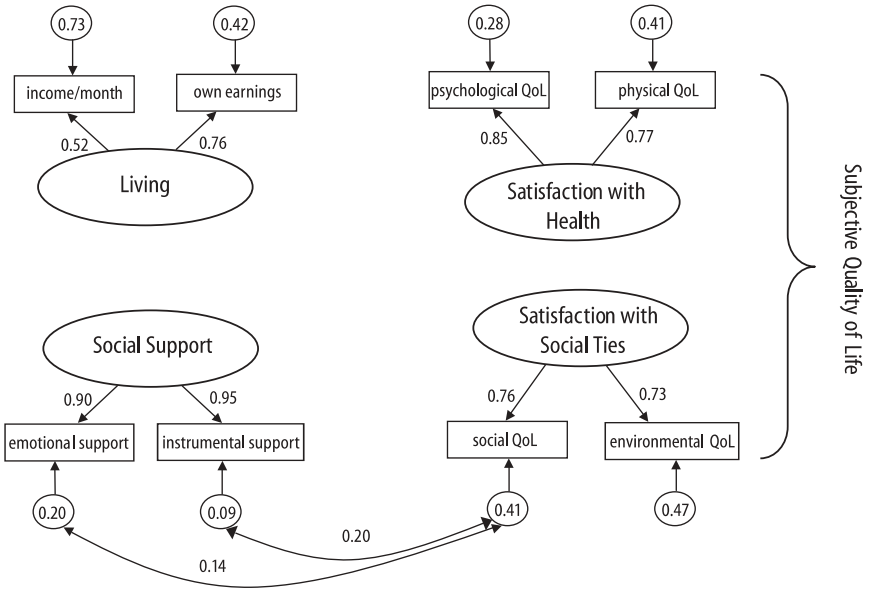

Fig. 1 Indicators (observed variables) of latent variables: Living, Social Support, and two dimensions of subjective Quality of Life, Satisfaction with Health and Satisfaction with Social Ties

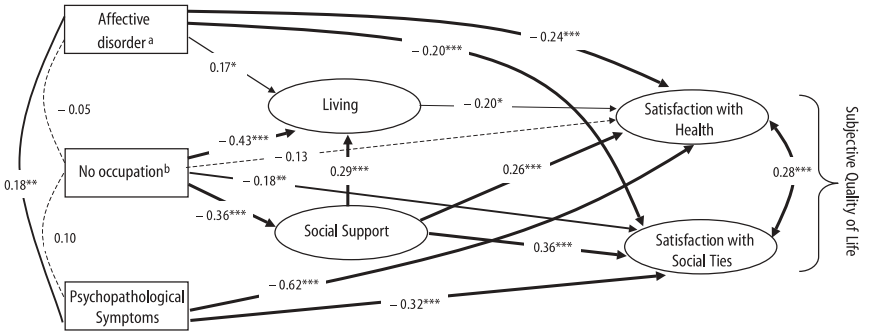

Fig. 2 Structural equation model predicting subjective quality of life of psychiatric inpatients from mental illness, occupation, social support and living conditions

N = 261; χ^2 = 38.34; df = 28; p = 0.092; RSMEA = 0.038; AGFI = 0.94; NFI = 0.96; *** p ≤ 0.001; ** p ≤ 0.01; * p ≤ 0.05; standardized path coefficients (thickness of paths correspondends to p); a) reference group: schizophrenic disorders; b) reference group: competitive, sheltered or other work-like occupation

With regard to the relationships between the selected variables, the model indicates that having no work-like occupation is strongly and negatively related to Living as well as Social Support. Social support in turn exerts substantial positive effects on both dimensions of subjective QoL, Satisfaction with Health and Satisfaction with Social Ties. Living is not related to Social Ties, but exerts a negative effect on Health.

Diagnosis (affective disorder) and psychopathological symptoms show strong negative effects on both dimensions of subjective QoL. Moreover, diagnosis is significantly related to standard of living: subjects suffering from an affective disorder report better economical background than subjects with schizophrenic disorders.

The model indicates that occupation is significantly related to only one of the two latent variables of subjective QoL, namely to the subjects' satisfaction with Social Ties. The investigation of effects listed in Table 3 clarifies the nature of this relationship.

On the one hand, occupation affects inpatients' Satisfaction with Social Ties indirectly via Social Support. On the other hand, occupation also exerts a direct effect.

In other words, the relationship between occupation and subjective QoL can to some part, but not fully, be explained by social support deficits. However, economic deprivation does not explain the lower life satisfaction in SMI subjects having no work.

Discussion

The present study investigates the relationship between occupation and quality of life (QoL) in a sample of 261 mentally ill persons (102 women, 159 men) suffering from a schizophrenic (n = 158) or affective disorder (n = 103). We used a broad meaning of occupation encompassing not only employment on the competitive labour market, but also sheltered work and unpaid work-like activities (mainly family work and education). During the year prior to present hospitalisation,

Table 3 Direct and indirect effects of occupation on subjective quality of life (results of SEM)

	Subjective quality of life (latent variables)			
	Satisfaction with Health		Satisfaction with Social Ties	
Model variables	direct	indirect	direct	indirect
Diagnosis = affective disorder	−0.24 (0.05)***	−0.03 (0.02)	−0.20 (0.06)***	–
Psychopathological symptoms (SCLGSI)	−0.62 (0.06)***	–	−0.32 (0.06)***	–
No occupation	−0.13 (0.07)	0.01 (0.04)	−0.18 (0.07)**	−0.13 (0.04)**
Social support	0.26 (0.06)***	−0.06 (0.03)	0.36 (0.09)***	–
Living	−0.20 (0.09)*	–	–	–
R^2	0.61***		0.40***	

N = 261; Standardized path coefficients, standard errors in parentheses; fit indices presented in Fig. 2
*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$

almost half (44 %) of the subjects had paid employment on the competitive labour market. The rate of competitive employment in our sample lies within the range reported by other studies [3–6]. However, not having competitive employment does not mean these persons are inert. This study indicates that many Swiss people with SMI, although not having competitive employment, are engaged in other work-like occupations. Only around a quarter (28 %) of the subjects reported that they had no work-like occupation at all. The other subjects either worked in a sheltered context (13 %) or followed unpaid work-like activities (16 %).

Occupation is clearly related to QoL in mentally ill persons. With regard to the objective living conditions, the economic situation of a large group of subjects must be judged as precarious. Around a quarter (24 %) live below the poverty level defined by the Swiss Conference on Social Welfare (SKOS) compared to 7 % of the population of the geographical area of this study. It is not surprising that having paid employment on the regular labour market mainly influences the financial situation of people with SMI. Thus, with regard to the economical life circumstances, only the QoL of those mentally ill persons with competitive employment can be judged as satisfactory. This result stands in line with the broad literature on the relationship between mental illness and economic deprivation [29]. It is important to note that many (29 %) of those subjects employed in sheltered occupations figure among the working poor. Living in poverty even when working is not only the fate of people with SMI. Nevertheless, from an ethical as well as medical standpoint, this fact is problematic as we know that financial strain is an important risk factor for the onset and maintenance of mental disorders [30].

With regard to other measures of QoL, it is not a specific work setting that seems to matter, but having some kind of work-like occupation. Subjects following an occupation have a larger social network and report more social support by others. They do so because in particular colleagues at the workplace are perceived as an important source of emotional support. Moreover, workmates seem to be of similar importance as close friends. Thus, occupation is a context for establishing and maintaining not only instrumental but also intimate relationships to men and women that cannot easily be replaced by other contexts.

Mentally ill persons with an occupation also report better subjective QoL even when controlling for illness characteristics such as diagnosis, psychopathology and number of psychiatric admissions during lifetime. This finding is confirmed by other studies relating work to subjective QoL of people with SMI [13–16]. However, in this study, occupational status primarily affects satisfaction with social relationships and with possibilities for societal participation, i. e. the mentally ill person's feeling of belongingness, but having work is hardly related to the subjects' well-being.

Furthermore, we investigated whether the relationship between occupation and subjective QoL is mediated by work-related measures of objective QoL. Results indicate that the better life satisfaction of working subjects is mainly a result of enriched social network and social support, but not of better income. A structural equation model reveals that half of the total effect of occupation on subjective QoL can be explained by supportive social networks. The finding further stresses the importance of supportive social relationships at the workplace. Research in the field of vocational rehabilitation indicates that supportive networks at the workplace facilitate job retention for clients with SMI [31].

Income is not positively related to the subjective QoL of people with SMI in the present study. This finding might be surprising because having no (paid) occupation is obviously related to economic deprivation. The finding stands in line with the often reported weak correlations between objective and subjective measures of QoL [11, 32]. Nevertheless, a conclusion like "occupation but not payment is important for mentally ill persons' QoL" would be a dangerous oversimplification, because one explanation of these weak correlations may be resignative adaption to adverse life circumstances. The same holds true for the negative relationship between economic background and the well-being dimension of subjective QoL. The finding is difficult to interpret. According to Lehman [33], such counterintuitive results may not be caused by insufficient measurement, but rather reflect the mentally ill persons' specific views and values (cf. also Katschnig [34]).

Finally, some remarks on limitations of the present study are necessary. First, we defined the subject's main occupation as the activity that he/she carried out for most of the time during the last year. Although a minority, some persons reported ruptures in their working life during that period of time. As some working subjects experienced periods of unemployment, so were not-working subjects engaged in work-like activities for a couple of months. This might produce a certain bias in the results of this study due to the fact that for some subjects it was perhaps the work history rather than the main occupation which affected their QoL. Second, our study uses a cross-sectional and naturalistic design. Therefore, the causal interpretation of correlations between occupation and social network/support should be made with caution. They may reflect the socialising effect of work, but they might also be the result of better social skills of mentally ill people following employment. Third, it is important to note how far scales of subjective QoL and variables such as social support and psychopathological symptoms overlap in content. The support measures used in this study and the QoL scale 'social relationship' seem to have some unknown factor in common, as the finding of correlated errors of SEM indicated. Nevertheless, social support and subjective QoL clearly differ in content with regard to the wording of items.

Conclusions

Not a specific work setting but having some work-like occupation seems to be of importance for the QoL in the mentally ill people participating in this study. This does at least hold true for their social network, perceived social support and life satisfaction, although not for their income. Many of the mentally ill without competitive employment rank among the working poor. In particular, the use of pay incentive within the context of sheltered work should be investigated in detail. Supportive relationships with colleagues at the workplace mainly explain the better subjective QoL of mentally ill people with an occupation. Thus, when designing specific employment possibilities for people with mental disorders, we should consider the social support dimension at the workplace.

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