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ORIGINAL RESEARCH

Use of EQ-5D-5L for Assessing Patient-Reported Outcomes in a National Register for Specialized Rehabilitation

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Abstract

Objective: To compare problems reported on EQ-5D-5L dimensions, index, and EQ visual analog scale (VAS) scores in patients receiving specialized rehabilitation in Norway with general population norms.

Design: Multicenter observational study.

Setting: Five specialist rehabilitation facilities participating in a national rehabilitation register between March 11, 2020, and April 20, 2022.

Participants: 1167 inpatients admitted (N=1167), with a mean age of 56.1 (range, 18-91) years; 43% were female.

Interventions: Not applicable.

Main Outcome Measures: EQ-5D-5L dimension, index, and EQ VAS scores.

Results: At admission, mean±SD EQ-5D-5L index scores were 0.48 (0.31) compared to 0.82 (0.19) for general population norms. EQ VAS scores were 51.29 (20.74) compared to 79.46 (17.53) for population norms. Together with those for the 5 dimensions, these differences were all statistically significant ($P<.01$). Compared to population norms, patients undergoing rehabilitation had more health states as assessed by the 5 dimensions (550 vs 156) and EQ VAS (98 vs 49). As hypothesized, EQ-5D-5L scores were associated with number of diagnoses, admission to/from secondary care, and help with completion. At discharge there were statistically significant improvements in all EQ-5D-5L scores that compare favorably with available estimates for minimal important differences.

Conclusions: The large deviations in scores at admission and score changes at discharge lend support to EQ-5D-5L application in national quality measurement. Evidence for construct validity was found through associations with number of secondary diagnoses and help with completion.

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Health care quality improvement continues to receive increasing attention, and proponents within rehabilitation medicine have argued for an increased focus on quality measurement.[1,2] However, there has been a slow uptake within rehabilitation,[3] including measurement of what is arguably the single most important indicator of quality from the perspective of the patient: quality of life as assessed by patient-reported outcome measures (PROMs).[4] If rehabilitation places the patient at the center of care, then outcomes of relevance to the patient should be routinely assessed.

The Norwegian Directorate of Health financed this study.

The findings were presented at the South Eastern Regional Rehabilitation Conference in Lillehammer, Norway, on September 14, 2022, and at the World Congress of Neurorehabilitation in Vienna, Austria, on December 16, 2022.

Disclosures. None.

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Dimensions of quality of life have traditionally been the focus of rehabilitation services, and the multidimensional nature of many PROMs lends them appropriateness for assessing outcomes.[5] Not only is quality of life an important outcome for patients and their caregivers but it is also a motivating factor for rehabilitation personnel engaged in quality improvement initiatives.[6] It is for these reasons that PROMs have been included in a quality indicator set for rehabilitation.[7]

Few PROMs have had such widespread application as the EQ-5D since its development over 30 years ago.[8,9] EQ-5D use in clinical and health services research, economic evaluation, and national quality indicators work has been aided through its availability in over 150 languages, general population norms, and national scoring algorithms based on societal preferences or values for health states.[9,10] The instrument has had widespread use in rehabilitation, including randomized controlled trials,[11-14] cost per quality-adjusted life year comparisons,[12,15] and quality measurement.[16]

Being generic in focus, the EQ-5D includes a health profile with broad relevance across health problems and complements more narrowly focused, disease-specific PROMs. Brevity and low respondent burden have further contributed to application alongside the latter.[11,13,15,16] These factors have led to EQ-5D application across diverse diagnoses including within rehabilitation.[17-19] The most widely reported version of the EQ-5D has 3 levels, which include 5 important dimensions of health: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each has 3 levels or response categories: no problem, some problems, severe problems. The more recent 5-level version, EQ-5D-5L, was developed by the EuroQol Group to improve the precision and responsiveness to change, and evidence from diverse populations including within rehabilitation supports this.[19,20]

After a series of national meetings that considered the factors above, key stakeholders selected the EQ-5D-5L for the Norwegian Rehabilitation Register beginning with implementation in 5 specialist facilities reported here. Systematic searches of PubMed showed that the instrument has not been evaluated for measurement properties in this setting and diverse diagnoses. Such evidence together with information to aid interpretation, including the extent of problems reported for EQ-5D-5L dimensions, is necessary for acceptance among clinicians and health care decision makers. The overall aim of the present study was to describe the extent of problems reported across the 5 dimensions along with EQ-5D-5L scores for these patients at admission and changes in health at discharge. Comparisons with general population norms further aided interpretation by assessing the extent to which the instrument captures the relatively poorer health of patients undergoing rehabilitation. Additional data contributed to assessing construct validity based on hypothesis testing.[20,21] Reporting follows recommendations based on existing national applications of the EQ-5D[9,17] and the COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN) checklist, which has explicit criteria for hypothesis testing.[21]

List of abbreviations:

COSMIN	**COnsensus-based Standards for the selection of health Measurement INstruments**
MID	**minimal important difference**
PROM	**patient-reported outcome measure**
VAS	**visual analog scale**

Methods

Data collection

Undertaken as part of a national rehabilitation register, at the time of data extraction this multicenter observational study included 1167 patients receiving rehabilitation at 5 specialist rehabilitation facilities, located within 2 of 4 regional health authorities. These facilities, which vary in their range of rehabilitation services, were willing to participate in this early phase of the register. Eligible patients were aged 18 years and over, able to give informed consent, and had sufficient literacy.

EQ-5D-5L data were collected from patients admitted from March 11, 2020, until April 20, 2022, at admission and discharge using an electronic tablet provided by the center, the patient's own electronic device, or a pen-and-paper form. Three types of help from trained staff were registered: explaining instructions, reading of questions, and completion for patients. Health services personnel recorded the diagnosis group, secondary diagnoses, dates of admission/discharge, and where patients were admitted from.

Data collection followed existing legislation, including approval by management and data protection officers at participating centers and nationally from the Norwegian Directorate of Health. It was conducted in accordance with the Declaration of Helsinki, and all participants gave their informed consent.

EQ-5D-5L

The EQ-5D-5L descriptive system of 5 health dimensions described above includes 5 response categories of no problem, slight problems, moderate problems, severe problems, and extreme problems.[9] The 5 responses give a health state or profile represented by a 5-digit number (for example, 12231) corresponding to response categories reported by patients for successive dimensions, beginning with mobility. Health states are scored to give the EQ-5D-5L index using a scoring algorithm from a value set derived from valuation tasks typically undertaken with general population samples.[9,10] Current recommendations for scoring the EQ-5D-5L index were followed, including the UK EQ-5D-3L value set mapped to the EQ-5D-5L descriptions of health.[10,22,23] Index scores range from −0.59 to 1; 1 is the best possible health state. Negative values represent health states perceived as worse than dead, which is equal to 0. Used alongside the EQ-5D, the EQ visual analog scale (VAS) is a 20 cm VAS "assessing your own health today" with endpoints labeled "Best imaginable health state" (100) and "Worst imaginable health state" (0).[9] To simplify presentation across the 5 categories, dimension data can be given in binary form (no problems vs slight to extreme problems).[9]

Data analysis

Descriptive statistics are presented with mean±SD, median (range), or number (%), as appropriate. Response frequencies for the 5 EQ-5D-5L dimensions, EQ-5D-5L index, and EQ VAS scores were compared with those for general population norms after random exact matching for age and sex.[10] Differences were assessed using the Mann Whitney U test for dimensions and the independent *t* test for the EQ-5D-5L index and EQ VAS.

Hypothesis testing was used to assess the construct validity of EQ-5D-5L scores in accordance with the COSMIN checklist.[20,21] First, it was hypothesized that poorer scores denoting lower levels of health would be associated with a greater number of secondary diagnoses. Second, those admitted from secondary care would have poorer scores than those admitted while at home. Third, those admitted to secondary care would have poorer scores at discharge than those returning home. Fourth, compared to those not receiving help, those receiving help in completion would have poorer scores for the dimensions of mobility, self-care, and usual activities and EQ-5D-5L index and EQ VAS. Dimension scores were tested using the independent samples Kruskal-Wallis test and Mann Whitney U test. Index and EQ VAS scores were tested using analysis of variance and independent samples *t* test. Scores at admission and discharge were compared using the Wilcoxon signed rank test for dimensions and paired *t* test for the EQ-5D-5L index and EQ VAS. Scores were also compared for diagnostic groups with sufficient samples sizes.

Statistical analysis was undertaken in Stata v15.0.[a]

Results

Study population

Table 1 shows the characteristics of the 1167 patients who completed the EQ-5D. The mean age was 56 (range, 18-91) years, and 43% were female. Each facility recruited between 11% and 41% of the total number of patients, with a median length of stay of 18 (range, 0-241) days. The 2 diagnostic groups of stroke/brain injury and neurologic/neuromuscular accounted for 59% of patients.

Table 1 Patient characteristics for those completing the EQ-5D-5L

	Admission		Discharge			
			Response		Nonresponse	
	N=1167 (%)		N=873 (%)		N=294 (%)	
Age, y, mean (range)	56.1 (18-91)		56.8 (18-91)		54.1 (18-85)*	
Female	506	43.4	379	43.4	127	43.2
Facility						
A	149	12.8	122	14.0	27	9.2†
B	130	11.1	107	12.3	23	7.8
C	282	24.2	235	26.9	47	16.0
D	474	40.6	324	37.2	150	51.0
E	132	11.3	85	9.7	47	16.0
Admitted from						
Home	730	62.6	522	59.8	208	70.7*
Hospital	312	26.7	250	28.6	62	21.1
Primary care rehabilitation	15	1.3	13	1.5	2	0.7
Other primary care	65	5.6	50	5.7	15	5.1
Secondary care	45	3.9	38	4.4	7	2.4
Length of stay in days median (range)	18 (0-241)		21 (0-241)		10 (2-105)†	
Diagnostic group‡						
Amputation	80	6.9	65	7.4	15	5.1
Cancer	49	4.2	39	4.5	10	3.4
Combined/complex disorders	185	15.9	135	15.5	50	17.0
Fracture, trauma, degenerative skeletal	94	8.1	74	8.5	20	6.8
Long-term muscle and soft tissue pain	50	4.3	28	3.2	22	7.5†
Neurological/neuromuscular	300	25.7	237	27.1	63	21.4
Stroke/brain injury	384	32.9	275	31.5	109	37.1
Other	25	2.2	20	2.3	5	1.7
Secondary diagnosis						
0	692	59.3	503	57.6	189	64.3†
1	247	21.2	182	20.8	65	22.1
2	99	8.5	78	8.9	21	7.1
3	61	5.2	53	6.1	8	2.7
≥4	68	5.8	57	6.5	10	3.7
Help with completion on admission§	441	44.1	321	43.3	120	40.8
Explaining	185	18.5	132	17.8	53	18.0
Reading	246	24.6	188	25.4	58	19.7
Ticking boxes	282	28.2	209	28.2	73	24.8

* $P<.05$.
† $P<.01$.
‡ Groups with over 20 patients.
§ Data were not available for 166 (14.2) patients.

Over 40% of patients had 1 or more secondary diagnoses. Over 44% of patients received help completing the EQ-5D.

Data analysis

Table 1 also shows that compared to the 873 patients who completed both admission and discharge questionnaires (74.8%), the 294 who did not complete the latter (25.2%) were on average 2.7 years younger and were more likely to have come from facility D or E, been admitted from home, a shorter length of stay, long-term muscle and soft tissue pain, and fewer secondary diagnoses ($P<.05$). At admission, the mean±SD EQ-5D-5L index scores for those completing the discharge questionnaire or not were 0.43 (0.32) and 0.53 (0.30), respectively ($P<.01$). The latter reported significantly less problems on dimensions of mobility, self-care, and usual activities ($P<.01$). EQ VAS scores for the 2 groups were not significantly different at admission ($P<.05$).

Table 2 shows EQ-5D-5L response frequencies at admission together with age- and sex-matched data for the general population. Patient responses were considerably less skewed toward the no problems category. The largest differences were for mobility, self-care, and usual activities, with patients reporting up to 66% more problems than the general population. The smallest difference was for pain/discomfort, where patients reported 18% more problems. Mobility and usual activities had the highest proportion of responses for the category of unable to do/extreme problems, with 17% and 12%, respectively. Less than or equal to 1% of the general population had scores at this level across dimensions. The differences between the 2 groups were statistically significant for the 5 dimensions (table 2).

The lower part of table 2 shows that mean EQ-5D-5L index and EQ VAS scores were much lower for rehabilitation patients compared to the general population, and these differences were statistically significant. The supplementary file (available online only at http://www.archives-pmr.org/) includes the frequency distributions and descriptive statistics. Over 30% of the general population had the best possible health state, represented by an EQ-5D-5L index score of 1, compared to just 3% of patients. Patients reported over 3 times as many EQ-5D-5L states and twice as many EQ VAS health states. The former included several index scores below 0 and considered worse than dead.

Table 3 shows EQ-5D-5L scores by secondary diagnoses, referral, and help with completion. Except for pain/discomfort, an increasing proportion of patients reported problems across dimensions with increases in the number of secondary diagnoses. Both index and EQ VAS scores declined with increasing numbers of secondary diagnoses. Compared to patients admitted from home, those admitted from secondary care experienced more problems for 3 dimensions and had lower index and EQ VAS scores. There were similar findings for those admitted for further care compared to those returning home. Help with completion was consistently associated with more problems across the 3 dimensions most related to physical function. Similarly, ED-5D-5L index and EQ VAS scores were lower for patients who received help.

Figure 1 shows the dimension response frequencies for the 873 patients with data at admission and discharge. At discharge there was an increase in responses to the 2 response categories denoting no or slight problems and a decrease in the remainder. However, compared to the general population, the distributions at discharge remained less skewed toward no problems. The improvements were significant ($P<.01$) across dimensions.

Figures 2 and 3 show EQ-5D-5L index and EQ VAS scores for diagnostic groups. For the former, the largest improvements were for the 2 groups of amputation and fracture/trauma/degenerative

Table 2 EQ-5D-5L frequencies (%) and descriptive statistics for general population and rehabilitation patients on admission (n=1167)

EQ-5D Dimension/Scores	No Problems	Slight Problems	Moderate Problems	Severe Problems	Unable/Extreme
General population					
Mobility	951 (81.5)	135 (11.6)	49 (4.2)	29 (2.5)	3 (0.3)
Self-care	1083 (92.8)	55 (4.7)	22 (1.9)	5 (0.4)	2 (0.2)
Usual activities	913 (78.2)	164 (14.1)	51 (4.4)	33 (2.8)	6 (0.5)
Pain/discomfort	455 (38.1)	524 (44.9)	140 (12.0)	46 (3.9)	12 (1.0)
Anxiety/depression	815 (69.8)	244 (20.9)	83 (7.1)	21 (1.8)	4 (0.3)
Rehabilitation					
Mobility	253 (21.7)	309 (26.5)	227 (19.5)	181 (15.5)	197 (16.8)
Self-care	561 (48.1)	334 (28.6)	163 (14.0)	81 (6.9)	28 (2.4)
Usual activities	137 (11.7)	324 (27.8)	339 (29.0)	229 (19.6)	138 (11.8)
Pain/discomfort	233 (20.0)	392 (33.6)	321 (27.5)	175 (15.0)	46 (3.9)
Anxiety/depression	558 (47.8)	329 (28.2)	181 (15.5)	85 (7.3)	46 (3.9)
	Mean±SD	Best Possible	Worst Possible	Number of Health States*	Range†
General population					
EQ-5D-5L index	0.82 (0.19)	384 (32.9)	0 (0.0)	156	−0.25 to 1
EQ VAS	79.46 (17.53)	72 (6.3)	1 (0.1)	49	0-100
Rehabilitation‡					
EQ-5D-5L index	0.48 (0.31)	34 (2.9)	0 (0.0)	550	−0.51 to 1
EQ VAS	51.29 (20.74)	5 (0.4)	8 (0.7)	98	0-100

* Number of possible health states: EQ-5D-5L=5^5 (3125), EQ VAS=101.
† EQ-5D-5L index scores range from −0.59 to 1, where 1 is the best possible health state; EQ VAS scores range from 0 to 100, where 100 is the best possible health state.
‡ Statistically significant ($P<.01$) differences found for all EQ-5D-5L dimensions (related samples Wilcoxon signed rank test), index, and EQ VAS scores (t test) in comparisons with general population.

Table 3 EQ-5D-5L scores by levels of comorbidity, admission and assistance in completion at admission (n=1167)

		% Reporting Problems*					Mean±SD	
	N	Mobility	Self-Care	Usual Activities	Pain/ Discomfort	Anxiety/ Depression	EQ-5D-5L Index†	EQ VAS†
Number of secondary diagnoses								
0	711	75.9	45.8	86.8	81.2	50.4	0.53 (0.29)	52.51 (20.32)
1	250	81.0	52.2	91.9	78.9	51.4	0.45 (0.31)	51.05 (20.11)
2	100	82.8	62.6	89.9	79.8	60.6	0.40 (0.34)	48.27 (21.11)
3	62	77.0	77.0	86.9	73.8	57.4	0.42 (0.32)	51.26 (22.63)
≥ 4	69	88.2‡	75.0‡	88.2‡	77.9	55.9	0.34 (0.39) ‡	44.26 (23.51) §
Admitted from								
Home	730	71.9	39.2	86.4	84.2	53.6	0.55 (0.26)	52.23 (19.43)
Secondary care	357	89.6‡	76.8‡	91.9‡	74.8‡	50.7	0.37 (0.36) ‡	47.21 (22.36) ‡
Admitted to								
Home	1054	66.2	34.2	79.1	75.3	42.6	0.65 (0.22)	63.47 (18.26)
Secondary care	54	91.4‡	77.1‡	91.4‡	74.3	48.6	0.33 (0.37) ‡	49.66 (19.84) ‡
Help with completion								
Explaining								
No	816	75.4	47.5	86.5	-	-	0.49 (0.31)	51.62 (20.62)
Yes	185	84.9‡	63.2‡	93.0§	-	-	0.41 (0.33) ‡	49.54 (21.34)
Reading								
No	755	74.2	46.2	86.0	-	-	0.53 (0.29)	53.07 (20.18)
Yes	246	86.2‡	63.4‡	93.1‡	-	-	0.40 (0.34) ‡	48.11 (20.76) ‡
Checking boxes								
No	719	74.8	45.5	87.8	-	-	0.53 (0.41)	52.55 (20.29)
Yes	282	83.0§	63.1‡	93.1‡	-	-	0.41 (0.34)‡	50.06 (20.68)

* Reported for ease of presentation, but analysis was based on the EQ-5D dimension 5-point scales: Kruskal Wallis and Mann Whitney U tests for categorical and binary variables, respectively.
† Analysis of variance and independent samples *t* test for independent categorical and binary variables.
‡ $P<.01$.
§ $P<.05$

skeletal conditions. For the latter, the largest improvements were for the groups of combined complex disorders and neurologic/neuromuscular diseases. All score improvements were significant ($P<.01$) with 1 exception. Compared with the remainder of patients, patients with amputation and fracture/trauma/degenerative muscular disease had significantly ($P<.05$) greater levels of improvement in the EQ-5D-5L index scores. Patients with cancer and stroke/brain injury had lower levels of improvement that were significant ($P<.05$). Patients with amputation and stroke/brain injury had relatively lower levels of improvement in EQ VAS scores, which was significant ($P<.05$). Patients with combined and complex disorders was the only group to have improvements in EQ VAS scores that were significantly greater than for the remainder of patients ($P<.01$).

Discussion

Implementing PROMs in inpatient rehabilitation can be challenging, with several factors to be considered.[24] The engagement of clinicians in the implementation process has been suggested as 1 strategy to overcome barriers,[25] and they were involved in the selection of the EQ-5D-5L for this national register. This instrument was selected by an expert group because of brevity and general relevance, and though 44% of patients received help with completion, there was broad acceptance among health personnel and patients at the 5 facilities.

This was an early phase of data collection for the Norwegian Rehabilitation Register but included adequate numbers of patients to present EQ-5D-5L scores and descriptive statistics and undertake testing in a manner comparable to much larger national studies.[17] Moreover, these studies informed the presentation of EQ-5D-5L data, which offer different insights into the aspects of health and outcomes assessed. The inclusion of general population data allowed comparisons with age- and sex-matched controls, aiding interpretation of EQ-5D-5L scores and changes in scores.

Most patients undergoing rehabilitation reported problems across the 5 health dimensions, whereas most of the general population reported no problems except for pain/discomfort. Together with score improvements at discharge, this shows that the dimensions assess the relatively poorer health of patients admitted for rehabilitation along with changes in health. This is complemented by the greater range and/or number of health states assessed by the EQ-5D-5L index and EQ VAS compared to the general population. Some floor and ceiling effects were expected given the brevity of the EQ-5D-5L, but the latter were much less pronounced than for the general population. Floor effects were low, and the great majority related to mobility and usual activities, which improved at discharge.

The mean change (SD) in EQ-5D-5L index scores of 0.16 (0.26) exceeds estimates for the minimal important difference (MID) based on alternative methods for estimation across populations.[26–32] MID estimates for the EQ VAS are less widely reported, but the mean change (SD) of 11.73 (18.42) is borderline[33] or exceeds the MID.[26,32,34,35] Given the range of available

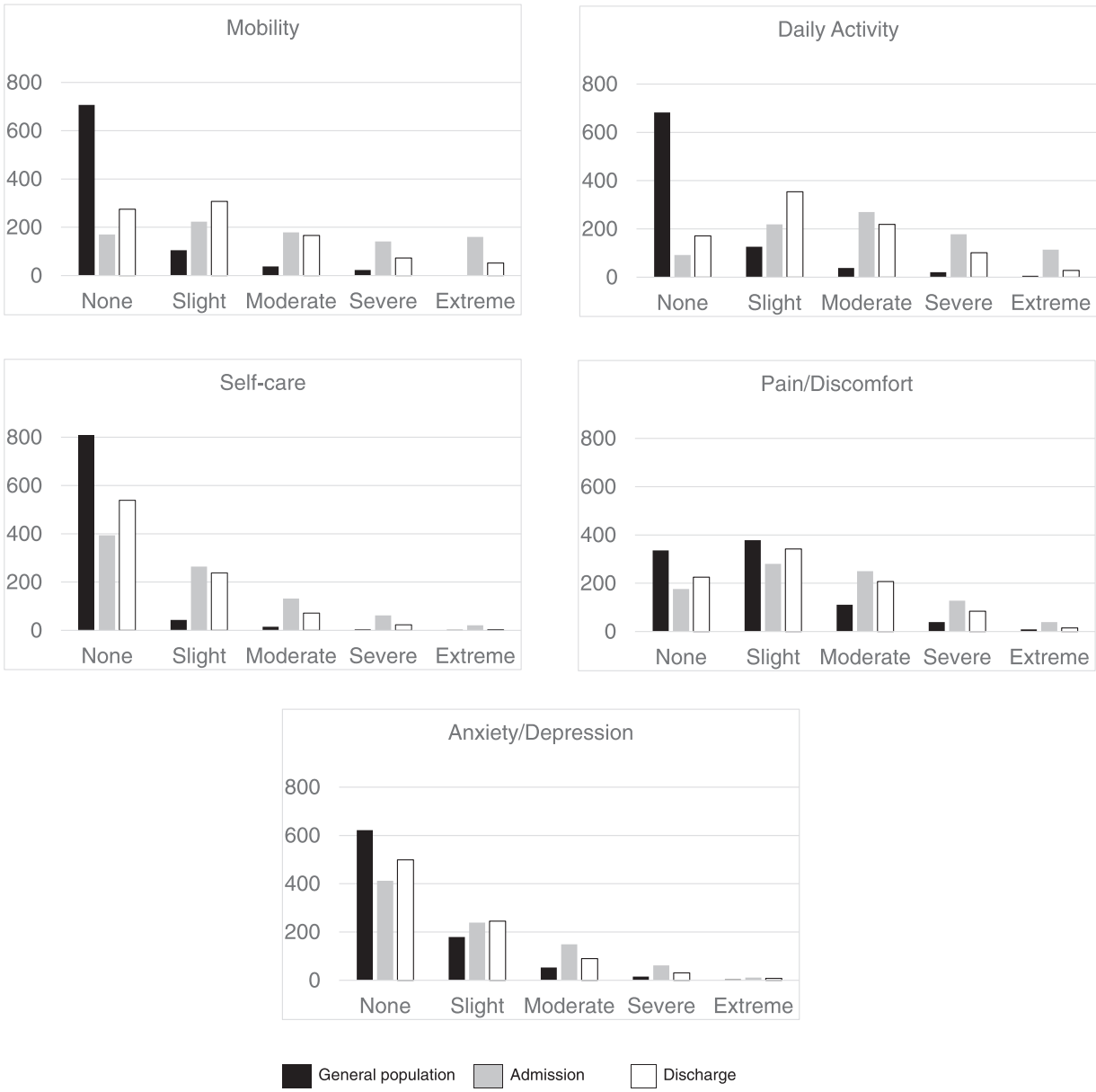

Fig 1 Frequencies for EQ-5D-5L dimensions at admission and discharge compared to the general population (n=873). Statistically significant differences ($P<.01$) between admission and discharge for all dimensions (related samples Wilcoxon signed rank test).

estimates, the results are encouraging, but they must be considered in relation to inconsistencies in terminology and methodology identified when interpreting PROMs score changes and their importance.[36]

The results of testing for construct validity were satisfactory according to COSMIN recommendations.[21] However, for the EQ-5D-5L dimension of pain/discomfort, patients admitted to rehabilitation from secondary care experienced less problems compared to those admitted from home. The former possibly received better management for pain/discomfort. The magnitude was smaller, but the findings were similar for anxiety/depression.

The EQ-5D is a widely used PROM across the systems of national medical quality registers[10,16,17] and is being used routinely in community and specialist rehabilitation services across the Canadian province of Alberta.[18] The current findings add to the evidence for the EQ-5D-5L within rehabilitation, including scores capturing poorer patient health compared to the general population and construct validity.[16,19,26,35,37]

Study limitations

This study was based on early implementation of the EQ-5D-5L, with data collection limited to a small number of facilities with adequate resources for this purpose. The facilities covered 2 of the 4 Norwegian regional health authorities but are not fully representative of all specialist rehabilitation facilities in Norway in terms of case mix and services.

The main study limitations relate to potential problems with patient recruitment and completion across the facilities. Limited information was available to assess whether all patients meeting inclusion criteria were included. Approximately one quarter of patients completing a questionnaire at admission did

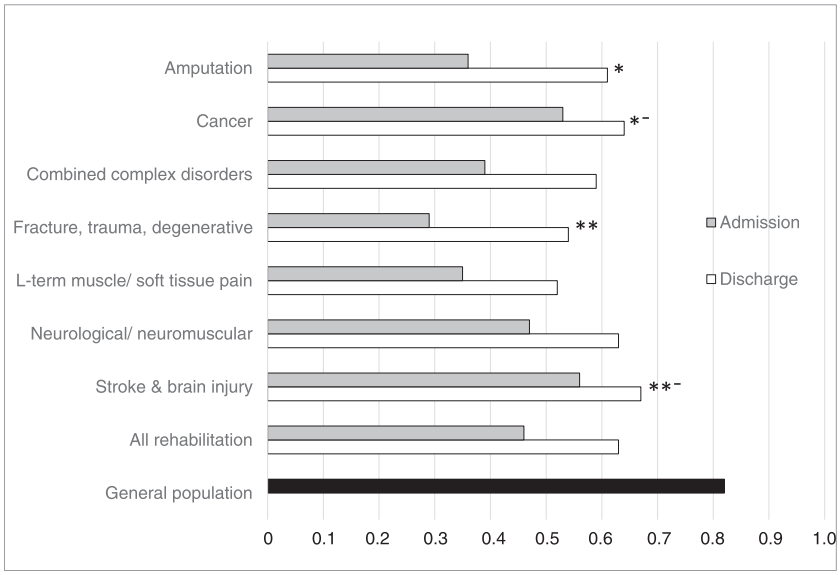

Fig 2 EQ-5D-5L index scores at admission and discharge (n=873). Paired *t* tests of admission and discharge scores were statistically significant for all groups ($P<.01$). Asterisks denote statistically significant differences (− is less change) in change scores compared to the remainder of patients undergoing rehabilitation. *$P<.05$; **$P<.01$.

not do so at discharge, and they were slightly younger and in better health. They may have had a shorter rehabilitation stay than expected, and discharge data collection procedures should be reviewed.

Future recruitment strategies that are consistent across facilities and give similarly high levels of completion will contribute to adequate register coverage and comparability of rehabilitation outcomes across facilities. As hypothesized, help with completion was associated with poorer health on 3 EQ-5D-5L dimensions. This suggests that trained staff were able to assess the needs of patients, but, again, consistency of approaches should be assessed across facilities. Detailed comparisons of levels of completion and patient characteristics that include multivariate methods will be more informative when such strategies are in place.

The national register currently includes 1 EQ-5D-5L follow-up questionnaire at discharge, and additional follow-up is planned. The large changes in EQ-5D-5L scores at discharge lend support

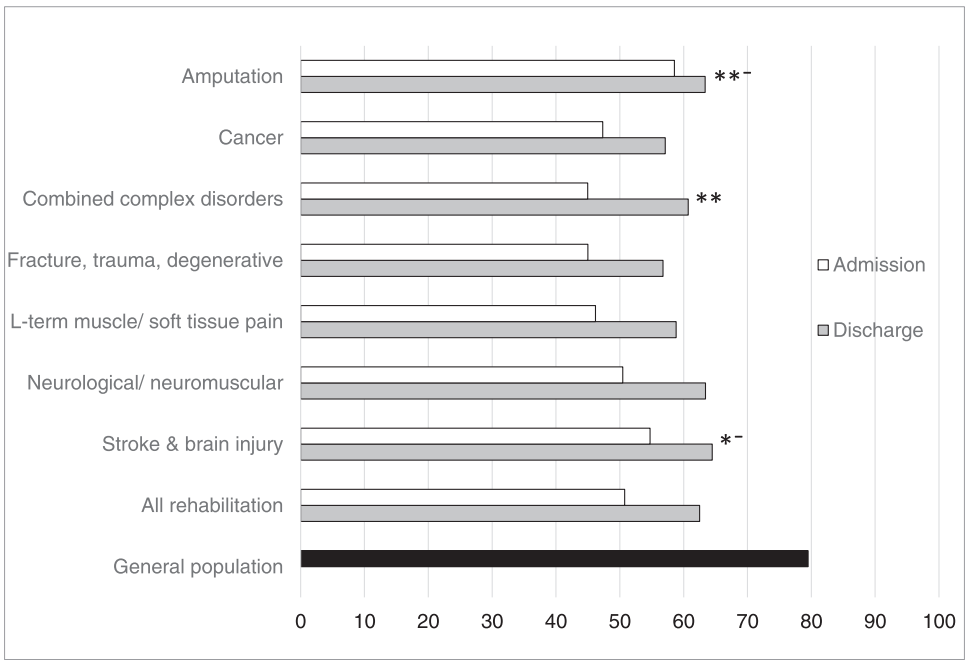

Fig 3 EQ VAS scores at admission and discharge (n=873). Paired *t* tests of admission and discharge scores were statistically significant for all groups ($P<.01$) and amputation ($P<.05$). Asterisks denote statistically significant differences (− is less change) in change scores compared to the remainder of patients undergoing rehabilitation. *$P<.05$; **$P<.01$.

to use in rehabilitation settings, but longer-term follow-up will further contribute to quality measurement.

Additional PROMs might provide important supplementary information to the EQ-5D-5L in rehabilitation settings. These can include similar health dimensions but with greater detail and precision, other health dimensions or be specific to health problems or rehabilitation goals. The inclusion of additional PROMs will further inform hypothesis testing in testing convergent validity for similar dimensions of health.[20,21] The scope of testing in the current study was constrained by available data, and though the results were encouraging, evidence suggests that measurement properties including responsiveness of the EQ-5D-5L varies across diagnostic groups.[38]

The inclusion of a test-retest design will contribute important information on the reliability and interpretation of EQ-5D-5L scores including the standard error of measurement, smallest detectable change, and the level of score change patients consider important.[20,21,27] Finally, the improvements in EQ-5D-5L scores at discharge suggest that the instrument is responsive, but a future follow-up should include additional measures of change for comparison.[21]

In the absence of a national value set, the study followed national recommendations for mapping the UK EQ-5D-3L value set to the EQ-5D-5L descriptive system.[22,23] The bimodal distribution of the index scores for the general population is a potential consequence of this.[39] Using nonparametric tests in score comparisons with patients undergoing rehabilitation did not affect significance levels (data not shown). The register will use a national value set when it becomes available, and improved score distributions are expected.[40]

Conclusions

The study findings including large deviations in scores at admission and score changes at discharge lend support to the EQ-5D-5L as a brief and broadly relevant PROM for specialized rehabilitation. The results of hypothesis testing, including associations with secondary diagnoses and place of admission/discharge, lend support to the construct validity of the instrument in this context. Successful application in the national quality register is dependent on good data collection procedures including consistency across facilities. Further testing for measurement properties, including responsiveness to change, is recommended before use as a quality indicator in this population.

Supplier

a. Stata v15.0, StataCorp LLC.

Keywords

EQ-5D-5L; National Quality Register; Patient-reported outcomes; PROMs; Quality indicator; Rehabilitation; Validity

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