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Quality of Life in Liaison Psychiatry
A Comparison of Patient and Clinician Assessment

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Background. This exploratory study investigates the performance of the Health Measurement Questionnaire (HMQ), as compared with the Psychiatric Assessment Schedule (PAS) and the Nottingham Health Profile (NHP), and compares self- and observer-completed measures.
Method. A total of 138 medical patients scoring over the screening threshold for probable psychiatric illness completed the HMQ, NHP and PAS, and were rated by a psychiatrist on Rosser disability and distress.
Results. HMQ disability correlated well with NHP and PAS physical health items, while HMQ distress correlated well with the NHP emotional reactions and PAS Index of Definition. There was significant correlation between self-report and psychiatrist ratings, the latter being more sensitive to distress.
Conclusion. The HMQ is a useful measure of generic health status in liaison psychiatry settings.

In recent years, there has been growing interest in applying measures of health-related quality of life in the evaluation of health-care services. This has led to the development of measures specific to certain groups of diseases, and also generic measures which can be applied to patients suffering from different diseases. These measures can be further divided into those which assess a profile of scores in different areas of health, such as the Nottingham Health Profile (NHP; Hunt *et al*, 1981); and those which produce a single index measure of health status, such as the Rosser Index.

The Rosser Index is a generic measure based on two components, disability and distress, which define 29 potential health states (Rosser & Kind, 1978). The Rosser classification was originally designed for use by a professional medical observer. However, for measuring health status in survey research, or gathering information from patients themselves, a self-rated instrument is more appropriate and less costly to administer.

This has led to the development of a short, self-completed questionnaire, the Health Measurement Questionnaire (HMQ), which can be used to generate ratings of Rosser disability and distress states (Gudex & Kind, 1988). The HMQ compares well with the NHP in a community sample (Kind & Gudex, 1993). However, there was potential for bias in that most respondents living in the community were in good health states: over 75% were categorised into one of the five least dysfunctional Rosser states of ill health, and only 5.7% of respondents were rated in the more severe half of the disability range. Before the HMQ can be accepted as a useful measure of health status, there is a need to assess its use by respondents experiencing a much wider range of disability and distress.

The HMQ has not been validated against an observer-based judgement of health status. The current study reports on the performance of the HMQ in comparison with established measures of psychiatric state and general health perception, and it also describes the experience of self-report and observer-completed measures.

Method

Patients

The study group consisted of patients interviewed as part of a cost-utility study of the detection and treatment of psychiatric illness in a general medical ward. These patients had been admitted to medical wards at Withington Hospital (Manchester) between March 1986 and August 1987, and, on admission, had scored over the screening threshold for probable psychiatric illness on the 28-item version of the General Health Questionnaire (Goldberg & Hillier, 1979). Patients were interviewed at home by one psychiatrist (RG) six months after entry into the main study.

Instruments

Each patient completed the HMQ (see Appendix), NHP, and Psychiatric Assessment Schedule (PAS; Dean *et al*, 1983). Patients were also rated for Rosser disability and distress by direct observation and specific questioning of patients and their nearest relatives (C disability and C distress).

Responses to the first section of the HMQ, comprising ten questions covering general mobility, self-care, usual activities, and social and personal relationships, are used to derive a Rosser disability (HMQ disability) rating. Responses to the second section, comprising a series of visual analogue scales (VAS), are used to derive a Rosser distress (HMQ distress) rating. These scales cover depression, anxiety, pain, dissatisfaction with appearance, embarrassment, uncertainty about the future, anger or resentment, guilt, loneliness, loss of self-confidence, and feeling of dependence on other people. In the final section, patients are asked to record, by VAS, the severity of overall distress and their overall quality of life. The VAS for overall distress and quality of life are not included in the algorithm to derive ratings of distress and disability, but have been used as a separate measure against which to assess HMQ disability and HMQ distress. The rules to obtain disability and distress ratings are more fully described elsewhere (Gudex & Kind, 1988).

The NHP is a 38-item, self-completed questionnaire which was developed to measure perceived health and the effect of health problems on usual activities. Items are categorised into six domains: physical mobility, pain, sleep, energy, emotional reactions, and social isolation. Within each domain, responses can be weighted according to severity, but both the structure of the domains and the weighting procedure applied to the NHP have been criticised in the past, and it has been argued that a simple tally for each category will suffice (Kind & Carr-Hill, 1987). In the current study, the latter approach has been adopted, and the simple domain scores have been summed to obtain an overall NHP score.

The PAS is a semi-structured diagnostic interview focusing on symptoms and behaviour during the previous four weeks. Two individual items from the PAS have been used in this study: subjective evaluation of physical health, and the presence of physical illness or handicap, both rated on a four-point scale. PAS data can be analysed with the CATEGO computer program, according to the Index of Definition (ID) (Wing *et al*, 1974), which indicates the likelihood of psychiatric 'caseness'.

The SPSS-PC+ statistical package was used to calculate rank correlation coefficients (because of kurtosed data) and agreement by kappa. Receiver operating characteristic (ROC) analysis was performed using the ROCFIT computer program (Metz *et al*, 1984).

Results

A total of 138 patients participated, 44 men and 94 women, with ages ranging from 16 to 80 years (mean of 51 years). Patients varied in their psychiatric and physical morbidity, reflected in their distribution within the Rosser matrix: 26 (18.8%) patients had 'no distress', 22 (15.9%) 'mild distress', 43 (31.2%) 'moderate distress', and 47 (34.1%) 'severe distress'. Forty-seven (34.1%) patients had 'no' or 'slight disability', 46 (33.3%) had 'slight' or 'severe' work impairment, and 45 (32.6%) were unable to undertake paid employment or were confined to chair or bed.

Comparison of self- and observer-rated disability and distress

HMQ disability and C disability showed a highly significant correlation ($\rho = 0.66$; $P < 0.001$). HMQ disability agreed with the clinician's rating to within one level of disability for 74% of the patients, and the agreement measured by kappa was 0.29. HMQ distress also showed a highly significant correlation ($\rho = 0.50$; $P < 0.001$). The two methods rated distress within one level of severity for 88% of patients, but only 33% were given exactly the same rating by the two methods. The level of agreement for self- and observer-rated distress gave a kappa of 0.12. The overall distributions for the two methods showed that the HMQ placed 65% of patients in the moderate and severely distressed categories, whereas the clinician placed 83% of patients in the mild and moderate categories, relatively few patients being rated as having no distress or severe distress. HMQ distress and HMQ disability also correlated to some extent with each other ($\rho = 0.4$, $P < 0.001$).

Comparison with VAS distress and VAS quality of life

There was a strong correlation between HMQ distress and patients' overall assessment of distress and quality of life by VAS ($\rho = 0.64$ for overall distress and $\rho = 0.61$ for quality of life; $P < 0.001$). A higher level of HMQ distress was associated with more severe VAS distress and worse VAS quality of life ($P < 0.001$: χ^2).

More severe HMQ disability was also associated with greater VAS distress and poorer VAS quality of life ($P < 0.01$: χ^2). HMQ disability correlated more strongly with VAS quality of life than VAS distress ($\rho = 0.64$ and 0.43, respectively).

Comparison with PAS

Almost all patients who were rated in the more severely disabled or more distressed groups by the HMQ were also rated as feeling unwell on the PAS, and most were rated as feeling seriously incapacitated by physical

illness. Correlation between HMQ disability/HMQ distress and subjective physical health were highly significant ($\rho = 0.59$ for disability; and $\rho = 0.56$ for distress; $P < 0.001$). A similar pattern and level of significance were found in comparing HMQ disability and HMQ distress with the severity of physical illness or handicap ($\rho = 0.48$ for disability and $\rho = 0.35$ for distress; $P < 0.001$). HMQ distress also showed a significant correlation with the Index of Definition ($\rho = 0.45$; $P < 0.001$), while, as expected, HMQ disability correlated less closely with the Index of Definition ($\rho = 0.20$; $P < 0.05$).

Using PSE 'caseness' as the standard, the ROC of the distress scale of the HMQ, and the visual analogue self-report scale for distress were compared. The two distress measures have similar power (area under the curve): 0.72 and 0.75, respectively. At its best threshold (between mild and moderate distress), the distress scale of the HMQ has a sensitivity of 82% and specificity of 53%, as compared with a sensitivity of 70% and specificity of 76% for the self-report scale (with its best threshold of 50/51).

Comparison with the NHP

Worsening HMQ disability and HMQ distress were associated with increasing scores on the NHP and each of its constituent domains (Table 1). The overall NHP score and each NHP domain correlated significantly with both HMQ disability and HMQ distress. For HMQ disability, physical mobility showed the closest correlation, followed by the overall NHP score. The other NHP domains differentiated less well between levels of disability of five or more. Overall NHP score and emotional reactions correlated most closely with HMQ distress.

Components of distress

With the VAS data as interval, regression analysis was used to determine which individual distress 'items' contributed the most to patients' self-rated overall distress. Pain, sad/depressed, and dependence on others emerged as the most significant factors in the analysis, pain explaining 31% of overall distress, sad/depressed explaining 13%, and dependence on others 6%. These three factors alone accounted for 50% of patients' distress. Uncertainty about the future and anger contributed only a further 1% each; in total, only 56% of overall distress was explained.

Although none of the three main items above correlated strongly together, other items did show significant interaction. Some were not unexpected: uncertainty about the future correlated with both anxious/worried ($\rho = 0.51$), and loss of self-confidence ($\rho = 0.52$); sad/depressed correlated strongly with both anger and anxious/worried. Because such interactions might influence the outcome of regression

Table 1
Nottingham Health Profile (NHP) scores for each derived disability and distress categories

Rosser Disability Category	No.	Mean score in each NHP domain						Overall NHP score max = 38
		Physical mobility max = 8	Pain max = 8	Sleep max = 5	Energy max = 3	Social isolation max = 5	Emotional reactions max = 9	
1	13	0.8	0.2	0.8	0.4	0.4	0.6	2.5
2	34	1.2	1.5	1.9	1.4	0.8	2.7	9.5
3	33	2.4	2.3	2.5	1.6	1.2	3.0	12.9
4	13	2.8	1.9	1.9	1.7	0.8	2.6	11.2
5	34	3.9	4.1	2.7	2.1	1.5	4.6	19.0
6/7*	11	5.0	3.9	2.3	2.3	1.2	3.6	18.3
Correlation	-	*0.65*	*0.43*	*0.25*	*0.43*	*0.29*	*0.36*	*0.55*
Rosser Distress Category	No.	Mean score in each NHP domain						Overall NHP score max = 38
		Physical mobility	Pain	Sleep	Energy	Social isolation	Emotional reactions	
None	26	1.2	0.3	1.0	0.8	0.3	0.9	4.4
Mild	22	1.6	1.3	1.5	1.1	0.6	1.4	7.6
Moderate	43	2.9	3.1	2.8	1.8	1.0	3.3	14.7
Severe	47	3.3	3.6	2.7	2.1	1.8	5.0	18.5
Correlation	-	*0.35*	*0.45*	*0.37*	*0.44*	*0.46*	*0.63*	*0.63*

*Disability categories 6 and 7 were combined because only two patients were in category 7.

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analysis, this was repeated after excluding anger and anxious/worried, with no change to the results.

Discussion

The HMQ is a short questionnaire which can be completed within 10 minutes on average. All the respondents completed the HMQ fully, although a few asked for a verbal explanation of the VAS. None of the respondents commented adversely on the questionnaire, and several spontaneously remarked that they felt able to describe their health status more satisfactorily on the HMQ than the NHP.

Comparison with more established instruments showed that the disability and distress components of the HMQ do measure what they set out to measure. HMQ disability correlated most strongly with physical mobility scale of the NHP, and the subjective physical health and severity of physical illness or handicap items of the PAS. Likewise, HMQ distress corresponded most closely with the emotional reactions scale of the NHP, and the Index of Definition of the PAS. HMQ distress also correlated closely with a single visual analogue self-rating of overall distress and quality of life, but was a more sensitive measure than the single scales. As would be expected, HMQ distress and HMQ disability correlate with each other, but the degree of correlation is weaker than that with the dimensions of the NHP and PAS that they are most closely related to.

Self-rated and clinician-rated disability correlated remarkably closely. Disability is a relatively practical and straightforward dimension with easily understood categories, such as being unable to undertake paid employment or being confined to a chair, a characteristic which contributes to the strong association between these two different assessment methods. However, observer- and self-ratings are different, and the agreement between ratings was not high. Where discrepancies did occur, they involved a clinical rating of disability level 4 or 5, as compared with an HMQ disability of 2 or 3. Closer examination of the patients in this discrepant group suggests that the HMQ may underestimate disability in some patients with chronic disability. For example, a young woman with poorly controlled epilepsy was unable to work because of several fits each day. The clinical rater placed her in disability category 5 because she was unable to undertake any paid employment and, apart from out-patient appointments, she had confined herself to the home for over six years. On the HMQ, she had responded that over the past two weeks her usual activities were "not at all affected". She appeared to have compared the last two weeks with her usual activities a short period before when she had been just as severely disabled.

Distress rated by the two methods also shows significant correlation, but there were many discrepancies and a low level of agreement. The clinical rater appears to be more sensitive to mild levels of distress, and to have a higher threshold for rating severe distress. Similar discrepancies have been noted elsewhere (Slevin *et al*, 1988; Uhlmann & Pearlman, 1991).

The three distress items of pain, sad/depressed, and dependence on others explained half of the variance in overall distress experienced by patients. A similar result emerged in a previous study with the HMQ (Kind & Gudex, 1993), in which pain was found to be the major contributor at 31% (compared with 30% here), sad/depressed added 8% (compared with 13% here), and dependence on others 5% (compared with 6% here). The similarity of results from these two studies is particularly interesting in view of the different groups of respondents involved (patients with probable psychiatric illness in this study, and a sample of general population in the Wolverhampton study).

The results presented here indicate good correlation between the HMQ and clinical measures appropriate to the treatment of patients in liaison psychiatry. They also demonstrate the feasibility of incorporating a generic health status instrument in a liaison psychiatry setting. More measurement of this type will be required to determine the effect of psychiatric care on the health-related quality of life of patients.

Appendix: Health Measurement Questionnaire (HMQ)

General mobility

Which one of the following best describes your situation? Tick one only.

- I can get outdoors on my own with no great difficulty ☐
- I can get outdoors on my own but only with difficulty, e.g. using stick, frame, crutch or wheelchair ☐
- I can get about in the house on my own but I can only get outdoors with someone's help ☐
- I am chairbound ☐
- I am bedridden ☐

Self-care

Do you need help with

Washing yourself?	Yes	☐	No	☐
Dressing?	Yes	☐	No	☐
Eating or drinking?	Yes	☐	No	☐
Using the toilet?	Yes	☐	No	☐

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Usual activities

1. Of the following, which is now your usual main activity? Tick one only.

Paid employment	☐
Housework	☐
Studying	☐
Retired	☐
Unemployed	☐
Other (Please specify .....)	☐

2. Has your current state of health forced you to change your usual activity?

_____ Yes	☐
_____ No	☐

3. If YES, what was your usual activity before? Tick one box only.

Paid employment	☐
Housework	☐
Studying	☐
Retired	☐
Unemployed	☐
Other (Please specify .....)	☐

4. If NO, have you had to cut down on your level of activity?

Yes	☐
No	☐

5. If your current state of health has affected your usual activity, how seriously do these work changes affect your life?
Mark a cross on the line.

0 ——————————— 10
NOT AT ALL — EXTREMELY SERIOUSLY

Social and personal relationships

Does your state of health seriously affect any of the following?

your social life?	Yes	☐	No	☐
seeing friends or relatives?	Yes	☐	No	☐
your hobbies or leisure activities?	Yes	☐	No	☐
your sex life?	Yes	☐	No	☐

6. Has your financial situation been affected by your current state of health?
If YES, please mark on the line below.

Yes	☐
No	☐

0 ——————————— 10
NO EFFECT — EXTREMELY SEVERELY

Feelings

Over the last two weeks have you experienced any of these feelings? If so, how much distress have they caused you?

	No	Yes	NO DISTRESS AT ALL — EXTREME DISTRESS
Feeling sad or depressed	☐	☐	0 — 10
Feeling anxious or worried	☐	☐	0 — 10
Pain	☐	☐	0 — 10
Feeling sick	☐	☐	0 — 10
Breathlessness	☐	☐	0 — 10
Difficulty in sleeping	☐	☐	0 — 10
Tiredness	☐	☐	0 — 10
Dissatisfaction with your appearance	☐	☐	0 — 10
Incontinence (i.e. lack of control over bladder or bowel movements)	☐	☐	0 — 10
Embarrassment	☐	☐	0 — 10

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	No	Yes	NO DISTRESS AT ALL — EXTREME DISTRESS
Uncertainty about the future	☐	☐	0 — 10
Anger or resentment	☐	☐	0 — 10
Guilt	☐	☐	0 — 10
Loss of self-confidence	☐	☐	0 — 10
Feeling dependent on other people	☐	☐	0 — 10
Feeling dependent on a machine	☐	☐	0 — 10
Any other problems that cause you distress?	☐	☐	0 — 10

Please specify

_____

_____

How much does your state of health distress you overall?
Mark a cross on the line.

0 — 10

NO DISTRESS AT ALL — EXTREME DISTRESS

Summary

How would you rate your overall quality of life?
Mark a cross on the line.

0 — 10

EXTREMELY GOOD — EXTREMELY BAD

What aspect of your state of health upsets you most?

_____

_____

_____

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