

LOCUS OF CONTROL AND REACTION TO ILLNESS: A STUDY OF PATIENTS WITH CHRONIC RENAL FAILURE

BOEY KAM WENG

SUMMARY

The relationship between locus of control and reaction to illness is empirically examined in a group of patients on haemodialysis for chronic renal failure. Results of the study suggest that patients who perceive themselves as having personal control over life events tend to have stronger feelings that their illness has made them dependent on others. There is also a greater tendency for them to exhibit more information seeking behaviour, and to adopt an active, problem-solving and intellectual approach to cope with their chronic renal failure. Relevance of the findings and implication for treatment outcome are discussed.

INTRODUCTION

Locus of control, a construct derived from Rotter's theory of social learning, refers to the extent to which persons perceive the contingency relationship between their actions and their outcomes.¹ People who perceive themselves as having personal control over their destiny are 'Internals', i.e., they believe that at least some control resides within themselves. 'Externals', on the other hand,

believe that their outcomes are determined by some external factors which are beyond their personal control, for example, by fate, luck, chance, other powerful or the unpredictable factors.

The study of internal-external locus of control has attracted much attention in the past 30 years due to its wide range of generalizability. Several studies have been conducted to relate locus of control to health-related behaviour. For example, it has been related to such behaviour as taking medication, making and keeping physicians' appointment, and giving up smoking,² treatment outcome in mastectomy patients,³ and weight control.⁴ Results of these studies suggest that people are handicapped by their external orientation in locus of control and that high internal patients generally show more positive behaviour in health-related situations.

The purpose of this study is to examine the relationship between locus of control and reaction to illness in a group of patients on haemodialysis for chronic renal failure. More specifically, measure of locus of control is related to the basic dimensions of reaction to illness as identified by principal component analysis.

MATERIALS AND METHOD

Patient Sample

The subjects in this study were 19 Chinese patients (14 males and five females) undergoing haemodialysis

Boey Kam Weng, PhD, DipClinPsych
Lecturer, Department of Psychological Medicine
Faculty of Medicine
National University of Singapore
College Road, Singapore 0316

at the renal unit of Singapore General Hospital. These patients (aged between 25 to 52, mean age = 37.42, SD = 7.27) were at least of secondary school education, who had no difficulty completing the scale and questionnaire administered.

Measuring Instruments

Rotter's I-E Locus of Control Scale. This scale consists of 23 question pairs using a force-choice format. For each question, an internal statement is paired with an external statement. The scale is scored in the external direction, i.e., one point is given for each external statement selected. The score is the total number of external items endorsed.

Reaction to Illness Questionnaire. This questionnaire which consists of 43 items is an adaptation of Pritchard's⁵ revised version of 'Response to Illness Questionnaire'. The items cover seven areas, namely: perception of illness, explanation of illness, result of illness, relationship with others, cognitive response, affective response, and behavioural response. Against each item, which is in a statement format, patient can indicate his degree of agreement on a 4-point rating scale (agree extremely – 3; moderately – 2; mildly – 1; not at all – 0).

To identify the basic dimensions (or factors) of reaction to illness, data on these 43 items were subjected to a principal component (defined factor) analysis using the SPSS.⁶ Factors with eigenvalues greater than 1.0 were retained for orthogonal (varimax) rotation. Factor scores derived through complete estimation method were then correlated with patients' scores on locus of control.

RESULTS

Basic Dimensions of Reaction to Illness

Results of the principal component analysis reveal 11 factors which account for 88.7% of the total variance. The following is a description of the 11 factors and their proposed descriptive labels.

Factor 1: Depression and anxiety. This factor is concerned with the negative affect of depression

and anxiety, which may be a result of not getting enough help from others. Preoccupation with illness, feelings of misery, anger, and resentment also load highly on this factor.

Factor 2: Outward hostility vs resented withdrawal. This is a bipolar factor with outward hostility and underlying feelings of shame as one pole, and resented dependency and surrender to illness as the other pole.

Factor 3: Defeat preoccupation vs challenge appraisal. This is also a bipolar factor but concerned more with the cognitive aspect of reaction to illness. High score on this factor indicates preoccupation with hopeless defeat while low score suggests the perception of illness as a challenge to be overcome.

Factor 4: Fear and anger. This is a factor concerned more with the affective component of fear and anger probably resulting from being insufficiently informed about the illness. High score on this factor also indicates greater tendency to conceal illness and to avoid coping with the situation realistically.

Factor 5: Inconsistent perception of severity. Patient who obtains high score on this factor has greater inconsistency in perceiving illness, which is accompanied by a sense of loss and non-involvement in the face of the illness.

Factor 6: Active information seeking vs passive sympathy appreciation. High score on this factor indicates active information seeking and an intellectual approach to illness as opposed to an attitude of passive appreciation of sympathy.

Factor 7: Unjust punishment and concealment vs self-responsibility and openness. Patient who scores high on this factor tends to see illness as undeserved punishment and dislikes others knowing about it. Low scorer on the other hand sees himself being responsible for the illness and also willing to discuss his health problem openly.

Factor 8: Help appreciation. This factor is related to the appreciation of help when patient believes that he has to surrender to his illness. High score on this factor also suggests a sense of failure.

Factor 9: Dependence. Patient who obtains high score on this factor has greater feelings that the illness has made him dependent on others and that it has resulted in a burden on his family and friends.

Factor 10: Self-involvement vs passive resentment. High score on this factor indicates self-involvement in overcoming illness though there is a denial of responsibility for its cause. Low score may suggest an attitude of non-involvement with feelings of resentment about the illness.

Factor 11: Inferior feelings. This factor is concerned with the inferior feelings and sense of loss in reaction to the illness.

Locus of Control and Reaction to Illness

To examine the relationship between locus of control and reaction to illness, Pearson's correlation coefficients between measure of locus of control and each of the above 11 factor scores were computed. Results of this analysis are shown in Table I.

TABLE I
CORRELATION BETWEEN LOCUS
OF CONTROL AND FACTOR SCORES OF
REACTION TO ILLNESS

Factor	Reaction to Illness	r.
1	Depression and anxiety	0.31
2	Outward hostility <i>vs</i> non-resented withdrawal	0.10
3	Defeat preoccupation <i>vs</i> challenge appraisal	0.27
4	Fear and anger	0.09
5	Inconsistent perception of severity	0.07
6	Active information seeking <i>vs</i> passive sympathy appreciation	- 0.47*
7	Unjust punishment and concealment <i>vs</i> self-responsibility and openness	- 0.10
8	Help appreciation	0.11
9	Dependence <i>vs</i> autonomy	- 0.50*
10	Self-involvement <i>vs</i> passive resentment	- 0.06
11	Inferior feelings	0.23

* p < 0.05.

As can be seen from the Table, locus of control is significantly related to Factor 6 and Factor 9, both factors are concerned with the cognitive-behavioural component of reaction to illness. The negative correlations indicate that patients who perceive themselves as having some control over their life events have stronger feelings that the chronic renal failure has made them dependent on others. However, there is a greater tendency for them to adopt an active intellectual approach, and exhibit more information-seeking behaviour in coping with their illness.

DISCUSSION

Adopting a multivariate approach, this study has identified and quantified 11 basic dimensions of reaction to illness. It is recognized that the descriptive labelling of these dimensions involves a certain degree of subjective judgement and it must be left to the reader to judge the appropriateness of the author's choice. For this purpose, loadings of the test items on the 11 rotated factors are shown in the Appendix. Although this study did not involve a very large number of cases, as a preliminary analysis of reaction in this group of patients it seemed justifiable.⁷

The significant findings of this study suggest that perceived control over general life events is related to patients' reaction to their illness. Although locus of control is related more to the cognitive-behavioural aspect than the affective aspect of reaction to illness, the findings have provided further evidence that external patients are more passive and negative in health-related behaviour. They are found to be less concerned about being a burden on others and also less active in finding out what they could do about their illness. Instead of adopting a problem-solving approach and looking for information for coping with their illness, external patients tend to react passively and seem to be quite contented with the sympathy that the illness has brought them.

There is also a slight tendency for external patients to be more depressed and anxious, though the correlation has not attained the conventional significance level ($r = 0.31$, $0.05 < P < 0.10$). However, view of the small sample size and the exploratory nature of this study, no further conclusions can be drawn.

tory nature of this study, the author is more prepared to risk a Type I error (i.e., rejecting a null hypothesis when no true relationship exists) than a Type II error (accepting the null hypothesis when true relationship exists). Further study is certainly needed to 'disprove' or confirm this non-significant relationship.

It has been speculated that psychological reaction may affect the process of recovery and rehabilitation. Clinical experience seems to suggest that active participation in treatment programme is positively related to speed of recovery. It is then not unreasonable to expect that other things being equal, internal patients, being more active and exhibit more information-seeking behaviour, may have a more favourable treatment outcome than their external counterparts.

ACKNOWLEDGEMENTS

The author wishes to thank the medical and nursing staff of the Renal Unit at the Singapore General Hospital, as well as the patients themselves for their assistance and cooperation in this study.

REFERENCES

- Rotter JB. Generalized expectancies for internal versus external control of reinforcement. *Psychol Monog* 1966; 80: 1 (whole No. 609)
- Wallston B, Wallston K. Locus of control and health: A review of literature. *Health Ed Monog* 1978; 6:107-117.
- Tarrier N, Maguire P, Kincey J. Locus of control and cognitive behaviour therapy with mastectomy patients: A pilot study. *Brit J Med Psychol* 1983; 56: 265-270.
- Ross M W, Kalucy R C, Morton J E. Locus of control and obesity: Predictors of success in a jaw-wiring programme. *Brit J Med Psychol* 1983; 56: 49-56.
- Pritchard M. Further studies of illness behaviour in long term haemodialysis. *J Psychosom Res* 1979; 21: 41-48.
- Nie N H, Hull H C, Jenkins J G, et al. *Statistical package for the social sciences*. New York: McGraw Hill, 1975.
- Rummel RJ. Understanding factor analysis. *J Conflict Res* 1967; 11: 444-480.

APPENDIX
LOADINGS OF TEST ITEMS ON THE 11 ROTATED FACTORS*

Test Item -	Loading	Test Item	Loading
Factor 1 (23.9% variance)			
24 feel depressed about it	.89	33 taken something from me	.71
20 feel anxious about it	.86	8 nothing I can do about it myself	.70
34 don't get enough help from others	.78	30 worse than others realize	.53
38 feel resentful about it	.69	39 appreciate sympathy it has brought me	.47
1 like an enemy that has attacked me	.63		
18 put the thought of it out of my mind	.57	Factor 6 (5.8% variance)	
21 a matter of chance that it has happened	-.51	23 want to find out all I can about it	.87
43 feel miserable about it	.45	29 think about how I can deal with it	.86
35 a sign of weakness in me	.45	17 the way to deal with it is to fight it	.59
13 think a good deal about it	.45	39 appreciate sympathy it has brought me	-.46
14 feel angry about it	.43		
Factor 2 (11.5% variance)		Factor 7 (5.0% variance)	
9 others are to blame for it	.93	41 a punishment which I don't deserve	.78
36 others are responsible for it	.92	11 like to talk to others about it	-.76
7 feel ashamed because of it	.79	27 dislike others knowing about it	.61
22 resent having to depend on others	-.59	26 unjust and unfair that it should happen	.59
19 look on it as a challenge	.56	35 a sign of weakness in me	.38
26 unjust and unfair that it should happen	.44	15 my own fault that it has happened	-.37
1 like an enemy that has attacked me	.40		
12 defeats me and have to give in	-.37	Factor 8 (4.4% variance)	
17 the way to deal with it is to fight it	.36	28 pleased with the help I get	.83
Factor 3 (10.3% variance)		10 feel a failure because of it	.72
13 think a good deal about it	.83	12 defeats me and have to give in to it	.52
37 worried can't cope with responsibilities	.81	40 feel frightened of it	.40
12 defeats me and have to give in to it	.59		
4 defenceless and unable to resist it	.59	Factor 9 (4.0% variance)	
19 look on it as a challenge	-.56	16 makes me dependent on others	.88
30 worse than others realize	.53	31 results in a burden on family and friends	.65
8 nothing I can do about it myself	.47	4 defenceless and unable to resist it	.55
6 kept in the dark/not told enough about it	.42	3 have gained from it	.51
15 my own fault that it has happened	.40	1 like an enemy that has attacked me	.39
Factor 4 (9.1% variance)		Factor 10 (3.7% variance)	
40 feel frightened of it	.79	25 something I must overcome myself	.85
14 feel angry about it	.66	15 my own fault that it has happened	-.63
43 feel miserable about it	.65	38 feel resentful about it	-.51
6 kept in the dark/not told enough about it	.63	39 appreciate sympathy it has brought me	-.50
27 dislike others knowing about it	.58		
32 feel like escaping from it	.40	Factor 11 (2.8% variance)	
31 results in a burden on family and friends	.37	2 indicates that I am inferior	.90
Factor 5 (8.2% variance)		3 have gained from it	.56
5 less serious than most people think	.81	42 never be the same again	.53
		21 a matter of chance that it has happened	.47

* Items with factor loading of less than .35 are not included