

Original articles

Psychological state and health experiences: gender and social class

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Introduction

Social scientists and epidemiologists have been concerned with health inequalities for more than half a century. The excess morbidity of disadvantaged social categories – the poor, minorities, and women – has been extensively studied and documented. Several factors have been suggested to account for the health differences observed for each of these social categories specifically. Although some of the explanatory variables proposed do overlap, attempts to consider and to test empirically generalised rather than targeted theoretical frameworks, capable of encompassing health inequalities of different social categories, are less common.

One of the earliest attempts to set up such a comprehensive theoretical framework is in Cassel's¹ conception of stress. Cassel argues that stress, the psychosocial process involved in the reaction to the social environment, increases the susceptibility to illness. Thus, stress is a non-specific etiological factor, capable of explaining differences in overall morbidity rates between social categories. Whether or not this definition holds for the subjective experience of a particular clinical condition is yet to be established. The present study intends to explore gender and social class differences in health appraisal and in the experience of people with a comparable health condition, and the degree to which psychological state explains these differences.

Summary

It is hypothesised that a disadvantaged position in the social structure creates a psychological state which fosters symptomatology, and a less favourable health appraisal than other patients with a comparable clinical health status. Data regarding health appraisal, number of symptoms experienced, and three measures of psychological state (happiness, distress and sense of coherence) were obtained from 238 mildly hypertensive patients treated with beta-adrenoceptor blocking agents. Social structure position was measured by gender and educational level. Women and less educated patients perceived their health less favourably and experienced more symptoms. Women and less educated patients were also less happy, more distressed, and scored lower on the sense of coherence scale. Gender differences in health appraisal and symptomatology disappeared when psychological state was controlled for. Yet, while psychological state accounted for social class differences in health appraisal, it only decreased class differences in symptomatology.

Key words: Social class, gender, psychological state, health appraisal, symptoms experienced.

Women's higher morbidity rates and the inverse relation between social class and health are two of the most consistent findings reported in the medical sociology and epidemiological literature^{2,3,4}. Many theoretical explanations for these health dif-

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Int. J. Health Sciences 1993, Vol. 4, no. 2, pp. 143-149

ferences have been offered, some of which are gender specific, e.g. differential biological predispositions⁵ or the greater propensity of women to perceive and report symptoms⁶; others are unique to social class, e.g. the selection or the drift hypothesis^{7,8}. The stress-illness model, however, has been applied to both social class and gender morbidity differences^{9,10,11}.

The mechanisms through which psychological and emotional processes increase susceptibility to physical 'ill-health' i.e. poor health in general in contrast to specific disease, are not yet fully understood. Nevertheless, there is a growing body of evidence that suggests a causal relation between psychological and emotional disease and ill-health^{12,13,14}. Stress researchers agree that individuals who are exposed to life situations that adversely affect their psychological and emotional states will suffer poorer health¹⁵. Verbrugge⁴, p.295 for example, has recently concluded that:

'women's excess morbidity in contemporary life is influenced especially by risks stemming from lesser employment, greater felt stress and unhappiness, and stronger feelings of vulnerability to illness . . . If these risks are reduced . . . women are likely to feel better physically and to suffer fewer daily symptoms and chronic health problems.'

Similarly, belonging to any disadvantaged social category (such as minorities and low social class) is likely to initiate the psychological processes which cause ill-health. Past research indeed indicates that both physical and psychological disease vary by gender and social class^{4,10}.

The present paper seeks to expand the stress-illness model beyond the general morbidity outcome. We submit that, given a particular outcome, the stress-illness model can explain the differential subjective experiences of members of lower status social categories. The model proposed is that a disadvantaged position in the social structure creates particular psychological and emotional states which foster symptomatology, and a more unfavourable health appraisal than that found among other patients with a similar clinical health status. Thus, we first investigated whether health appraisal and the experience of symptoms vary by gender and social class among individuals in a comparable chronic condi-

tion and under a similar treatment regime. Secondly, we explored the degree to which these differences can be explained by the psychological consequences of the social construction of gender and social class. Therefore, we studied whether happiness, distress, and (SOC) sense of coherence (which is a global life orientation expressing the extent to which one believes that stimuli are comprehensible, manageable, and meaningful^{16,17}) account for gender and social class differences in health appraisal, and the symptoms experienced by mild hypertension patients treated by beta-adrenoceptor blocking agents.

Such patients may be expected to appraise their health status alike, and to experience similar symptoms. Individuals obviously differ in the way they experience and react to similar conditions and treatment. Yet plain individual variability should be randomly distributed *across* social categories, and the variance *within* each category should be no less than the variance *between* categories. According to the proposed model, however, the variability in health perception and experience is shaped by social category membership, largely as a result of the differential psychological state associated with a disadvantaged position in the social structure.

Consequently, three hypotheses were tested:

- I. health appraisal and symptoms experienced by individuals of comparable clinical status vary by gender and social class;
- II. happiness, distress, and sense of coherence are related to social class, and men score better than women;
- III. gender and social class differences in health appraisal and symptom experience are largely explained by their differential psychological state.

Methods

Data were taken from the initial interview of a study designed to evaluate the quality of life of patients with mild hypertension, treated with beta-adrenoceptor blocking agents. Criteria for inclusion in the study were: outpatients, aged 25 to 70 years, with a diagnosis of hypertension, whose diastolic blood pressure was between 95 and 120 mm Hg, and who were willing to participate in the

study. Since the purpose of the study was to evaluate the degree to which a comparable clinical condition is experienced by members of different social categories, obese patients, patients treated regularly with three or more drugs, and/or suffering from a serious chronic condition (such as cardiovascular, renal or lung diseases or insulin-dependent diabetes) were excluded.

Patients were selected from the medical records of eight primary care clinics in the Negev region of Israel; selection criteria for the clinics were: size (larger clinics) and location (to assure varied social background). Patients who met the inclusion criteria were invited for a regular follow-up by their primary physician; (up to three invitations were sent). Two trained interviewers successfully interviewed 238 patients (134 women and 104 men) using a structured questionnaire. The response rate was 81 percent; 8 percent of the original sample could not be located after three calls, 6 percent did not know enough Hebrew, and 5 percent refused to participate.

The following measures were included in the questionnaire:

Health measures:

1. Health appraisal: subjects were asked to evaluate their own health compared to other persons of their age on a four-point scale (1. excellent 4. poor);
2. number of symptoms experienced: drawing on previous research^{18,19,20,21,22}, subjects were asked whether, during the previous month, they had or had not experienced any of 23 symptoms known to be hypertension-related or adverse effects of beta-adrenoceptor blocking agents. The symptoms covered eight areas: sleeping disorders (e.g. difficulties in falling asleep or getting up); gastrointestinal problems (e.g. dry mouth, constipation); physical effort (e.g. difficulties in climbing stairs, in usual activity); difficulties in concentration and memory; sex (e.g. desire, satisfaction); headaches, nocturia, and palpitation.

Psychological state measures:

1. Happiness: the first 10 items of the Memorial University of Newfoundland Scale of Happiness (MUNSH)²³ were used in this study. The scale includes five positive (e.g. in high spirits) and five negative (e.g. depressed or very unhappy) statements. The respondent is asked to

indicate the degree to which each statement describes him/her. After reversing negative statements a summary score was calculated. Scores range from 21 (the least happy person) to 42 (happiest person); Cronbach's alpha=.71;

2. distress was measured using the Psychological Distress Scale (PDS)²⁴. This is a five-item scale, including two positive statements (e.g. I can relax without difficulty) and three negative statements (e.g. I often feel tense or high-strung). Scoring procedure followed the one used in the MUNSH scale. Scores range from 5 (most distressed person) to 20 (least distressed person); Cronbach's alpha=.78;
3. sense of coherence (SOC) was measured by the short form of the Sense of Coherence Questionnaire¹⁷. The short form includes 13 of the 29 items included in the full form. Respondents were asked to locate themselves, on a seven-point semantic differential scale, with regard to items such as "How often do you have the feeling that there's little meaning to the things you do in your daily life?" (1= very often; 7=very seldom or never); "Has it happened in the past that you were surprised by the behaviour of people whom you thought you knew well?" (1= very often; 7=very seldom or never); and "How often do you have feelings that you're not sure you can keep under control?" (1= very often; 7=very seldom or never). The possible score range is from 13 (low SOC) to 91 (highest SOC), Cronbach's alpha=.81.

Social class was measured by number of school years. Educational attainment has been widely used as a proxy for social class, and found to be valid for detecting health inequalities²⁵. In Israel, number of school years was proved to determine occupational prestige for both men and women²⁶.

Analysis

Descriptive statistics were used to search for gender and social class (number of school years) differences in clinical status. Descriptive statistics were also used to test for gender and social class differences in health appraisal, the number of symptoms experienced, and the three psychological state measures. Multivariate analyses were used to explore to what extent the stress-illness model can be generalised to gender and social class differences in health perception and experience. That

is, the extent to which gender and social class differences disappear when psychological disease is controlled for. Since the three psychological state measures were not co-linear (the highest correlation between SOC and distress: $r=.46$), and since we were interested in testing the theoretical approach rather than studying the best predictor, all three measures were included in one regression equation.

Findings

A. Gender

There were almost no gender differences in the clinical characteristics in our sample (Table 1). Mean age, systolic and diastolic blood pressure, and time of diagnosed hypertension onset did not differ significantly between men and women. Moreover, men and women suffered from a similar number of chronic conditions, including conditions such as mild diabetes and peripheral vascular disease which were not severe enough for exclusion from the study.

However, as proposed by hypothesis I, their subjective experiences were significantly different (Table 2a). Compared with men, a significantly higher proportion of women perceived their health as fair-to-poor, and, on average, women experi-

enced **2.6** more hypertension-related symptoms than men during the month prior to the interview.

In line with previous research and hypothesis II, the psychological state of the women was significantly poorer than that of the men (Table 2b). The women in our sample were significantly less happy, more distressed, and had a much lower sense of coherence.

Gender differences in health appraisal and the number of symptoms experienced were not explained by demographic characteristics or chronic illnesses (Table 3a). However, as hypothesised (hypothesis III), gender differences in the experience of illness were explained by the differences in psychological well-being (Table 3b). Once psychological state measures were controlled for, the differences in health appraisal and the number of symptoms ceased to be statistically significant.

B. Social Class

Clinical characteristics were not associated with number of school years in our sample (Table 4). The three groups did not differ significantly in

Table 1. Clinical characteristics by gender

	Women (n=134)	Men (n=104)	Statistics
Age (mean and S. D.)	55.1 (8.1)	54.1 (8.9)	$t= .85$
Systolic BP (mean and S. D.)	158.7 (14.9)	151.8 (18.8)	$t= .86$
Diastolic BP (mean and S. D.)	107.1 (17.0)	110.4 (18.0)	$t=1.09$
Hypertension diagnosed onset (mean years and S. D.)	8.2 (6.7)	9.9 (10.2)	$t=1.54$
Diabetes ¹ (per cent)	7	11	$\text{Chi}^2= .86$
Heart disease (per cent)	5	5	$\text{Chi}^2= .00$
Renal disease (per cent)	5	8	$\text{Chi}^2=1.18$
Peripheral Vascular Disease (per cent)	3	4	$\text{Chi}^2= .53$
Total mean # of chronic conditions (SD)	.3 (.5)	.2 (.5)	$t= .82$

¹ Not insulin-dependent.

Table 2. Health appraisal, symptoms experienced and psychological state by gender

	Women (n=134)	Men (n=104)	Statistics
<i>a) Health experience</i>			
Compared with other people my age, my health is:			
excellent-good	23%	41%	$\text{Chi}^2=9.66^*$
fair-poor	77%	59%	d.f.=3
No. of symptoms experienced (mean and S.D.)	9.5 (5.8)	6.9 (6.0)	$t=3.86^{**}$
<i>b) Psychological state (means and S.D.)</i>			
Happiness (MUNSH score) ¹	33.8 (5.0)	36.5 (4.3)	$F=4.37^{**}$
Distress ²	12.9 (3.2)	15.1 (3.2)	$F=5.32^{**}$
Sense of Coherence ³	58.9 (12.9)	67.9 (11.2)	$F=7.99^{**}$

¹ The higher the score, the happier the patient.

² A higher score indicates less distress.

³ A higher score indicates a stronger sense of coherence.

* $p<.01$

** $p<.001$

Table 3. Health appraisal and symptoms experienced: the effects of gender and psychological state (standardized b coefficients)

	Health ¹ appraisal b	Symptoms Experienced b
<i>a) Socio-demographic characteristics</i>		
Gender (women)	-.22***	.16**
Education ²	.16*	-.32***
Age	-.05	.01
Chronic conditions	-.25***	.19**
R ²	.14***	.19***
<i>b) Adding psychological state measures</i>		
Gender (women)	-.08	-.01
Happiness	-.12*	-.20**
Distress	-.20**	-.32***
SOC	-.23**	-.24***
R ²	.30***	.44***

¹ Ordinal scale, a positive coefficient indicates better health appraisal.

² Skewed distribution required log transformation.

* p<.05

** p<.01

*** p<.001

Table 5. Health appraisal, symptoms experienced and psychological state by level of education

Number of school years	0-8 (n=76)	9-12 (n=91)	13+ (n=54)	Statistics
<i>a) Health experience</i>				
Compared with other people my age, my health is:				
excellent-good	20%	32%	43%	Chi ² =
fair-poor	80%	67%	57%	9.57*
No. of symptoms experienced (mean and S. D.)	11.5 (5.2)	6.4 (5.5)	5.6 (5.6)	F=41.8**
<i>b) Psychological state (means and S. D.)</i>				
Happiness (MUNSH) ¹	32.9 (5.7)	36.4 (3.6)	36.2 (4.6)	F=24.6**
Distress ²	12.8 (3.4)	14.6 (3.2)	14.7 (3.1)	F=14.6**
Sense of Coherence ³	57.0 (13.5)	65.4 (12.3)	68.9 (9.3)	F=34.8**

¹ The higher the score, the happier the patient.

² A higher score indicates less distress.

³ A higher score indicates a stronger sense of coherence.

* p<.01

** p<.001

mean age, mean systolic and diastolic blood pressure, time of diagnosed hypertension onset, or the number of chronic conditions.

Nonetheless, the three groups differed significantly in their health appraisal and the number of symptoms they experienced (Table 5a). As predicted, the proportion of patients who assessed their health to be fair-to-poor and the average number of symptoms experienced during the previous month decreased significantly with level of education. As has been demonstrated above, these differences are not explained by socio-demographic characteristics or chronic conditions (Table 3a). Similarly, all three measures of psychological disease were adversely related to the level of education (Table 5b). Both health and psychological state measures showed the well-documented pattern, in which the lower social class is considerably worse off, while the differences between the other two groups were much smaller*.

* This observation called for a logarithmic transformation in the multiple regression analysis testing hypothesis III

Table 4. Clinical characteristics by education

Years of schooling	0-8 (n=76)	9-12 (n=91)	13+ (n=54)	Statistics (d.f.=2)
Age (mean and S. D.)	56.9 (7.4)	52.9 (8.2)	54.2 (9.9)	F=2.76
Systolic BP (mean and S. D.)	180.4 (34.8)	174.2 (23.2)	174.4 (19.7)	F= .02
Diastolic BP (mean and S. D.)	109.1 (22.5)	108.0 (13.4)	110.6 (11.9)	F=2.17
Hypertension diagnosed onset (mean years and S. D.)	8.2 (6.7)	9.9 (10.2)	8.7 (9.8)	F=1.56
Diabetes ¹ (per cent)	10	6	4	Chi ² =2.16
Heart disease (per cent)	4	3	3	Chi ² = .58
Renal disease (per cent)	5	6	3	Chi ² =1.28
Peripheral Vascular Disease (per cent)	3	3	2	Chi ² =2.77
Total mean # of chronic conditions (SD)	.3 (.6)	.2 (.5)	.2 (.4)	F=1.03

¹ Not insulin-dependent.

Thus, hypotheses I and II, which predicted a negative relation between level of education and health appraisal, hypertension-related symptomatology, and psychological state, were fully supported. Yet, only one part of hypothesis III, which predicted that differences in health appraisal and experience stem from social class dissimilarities in psychological state, was supported (Table 6). Psychological disease accounted for differences in health appraisal, but not for the differences in the number of symptoms experienced. Nonetheless, psychological disease significantly narrowed social class differences in the number of symptoms experienced. When alone in the equation, the *b* coefficient of (log)education was *b*=-4.02, S.E.=.75; the coefficient produced after controlling for socio-demographic characteristics, chronic conditions, and psychological state (*b*=-1.51, S.E.=.74) was significantly lower (*t*=2.38, *p*<.05).

Table 6. Health appraisal and symptoms experienced: the effects of education¹ and psychological state (standardized *b* coefficients)

	Health appraisal <i>b</i>	Symptoms Experienced <i>b</i>
Number of school years	.01	-.11*
Happiness	-.16*	-.18**
Distress	-.20**	-.33***
SOC	-.19*	-.19**
R ²	.28***	.46***

¹ Controlled for age, and chronic conditions. Skewed distribution indicated Log transformation for number of school years.

* *p*<.05

** *p*<.01

*** *p*<.001

Discussion

The poor health of disadvantaged social categories, such as women, minorities, and lower Socio-Economic Status (SES) are well documented. The efforts to explain health inequalities have stimulated a great deal of research, looking at parsimonious, category-specific explanations, as well as, though less often at more general theoretical approaches.

The latter focus on the common denominator of these groups – a disadvantaged position in the social structure and its psychological consequences. In this study, the stress-illness model was applied to the health appraisal and experiences of patients of different gender and social class with reasonably comparable clinical health statuses.

We hypothesised that if health inequalities may be expanded from the prevalence of ill-health to the experience of specific conditions, and a disadvantaged position in the social structure leads to a poorer psychological state, then given the psychological disease/health association,

- (I) health appraisal and the number of hypertension-related symptoms experienced will vary by gender and social class
- (II) psychological disease will be more common among women and inversely related to social class
- (III) psychological state will account for most gender and social class differences in health appraisal and the symptoms experienced.

The first two hypotheses were clearly supported by the data. Women appraised their health less favourably than men, and experienced more hypertension-related and drug-adverse symptoms than men. Both health appraisal and the number of symptoms experienced were inversely related to social class as measured by number of school years. As predicted, women's psychological state was significantly poorer than that of men and psychological disease was adversely related to level of education. In agreement with previous research, the distribution of health appraisal, the experience of symptoms, and psychological state by social class was non-linear: the least educated scored considerably worse than the intermediate and the better educated, while the differences between the latter two were much smaller and often non-significant.

The third hypothesis, however, was not fully supported. As expected, women's excess symptom experience and poorer health appraisal were indeed explained by gender differences in psychological state. Psychological state also accounted for class differences in health appraisal, but only for part of the class differences in the number of symptoms experienced.

Our findings thus clearly demonstrate that health inequalities go beyond general morbidity and mor-

tality and are evident in condition-related experiences also. Members of disadvantaged social categories feel more ill and are troubled by more symptoms than members of other social categories, although clinical condition and treatment are comparable.

Moreover, the stress-illness model is applicable to the understanding of health inequalities of disadvantaged social groups. Although social class differences in symptomatology decreased significantly but persisted, psychological state largely explains how members of such social categories come to feel unhealthy and experience more symptoms of a similar disease and treatment.

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received	23-07-1993
revision asked by the editor	08-11-1993
accepted	13-12-1993