

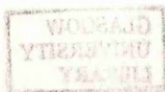
Health and Co-operative Housing

M.Sc.Thesis

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I hereby declare that the contents of this thesis represent work undertaken entirely by myself ,except insofar as is detailed in the acknowledgements section.

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(b) Theoretical Background Jonathan St C Anderson

Methodology of Study Dated 10-8-92

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1. Summary

The health of 189 women living in a tenant management co-operative based in high-rise housing in Glasgow was compared to 183 women living in a similar area under direct council management. No difference was found in the Medical Outcomes Study Instrument, a health status measure or Hospital Anxiety-Depression Rating scale.

Within the co-operative, regular or occasional attendance at co-operative meetings and involvement in the co-operative was associated with better health. Attenders had better social and physical function scores and less anxiety and depression. These differences were still statistically significant after allowing for marital status, age, employment, children, loss of job due to ill health and dampness in the flat and after excluding committee members. No differences in General Practitioner consultation rates or use of hospital services were found.

The hypothetical link for this attendance effect could be a rise in self-esteem in those involved in the co-operative protecting the women against illness. Women in the co-operative had a sense of political efficacy. 52 out of 189 women attended the co-operative meetings regularly or occasionally.

Those living in the co-operative were more satisfied with their housing. Both areas had high levels of perceived and actual crime.

Women living in flats affected by dampness, mould or a poor state of repair (20%) had significantly lower scores on the General Health perceptions, Mental health, Physical function and pain scales of the MOSI and more anxiety and depression on the HAD. They also consulted their general practitioners more frequently, but dampness did not affect their reporting of chronic disease or hospital use.

The study demonstrates that attendance at the co-operative meetings is associated with better health and less anxiety and depression. Any theoretical difference in health scores between the two housing areas may have been masked by the levels of attendance and involvement in the co-operative, the higher initial level of deprivation in the co-operative area and the relatively short time that the co-operative had been in operation.

The report also contains a validation study of the Medical Outcomes Study Instrument (MOSI). It involved a postal survey of 486 women aged 30-40 years in a General Practice in the East of Glasgow using the MOSI and Nottingham Health Profile. Tests of construct validity show the MOSI to be a candidate for Health Status measurement in research and audit in primary care.

2. Introduction

High-rise housing and poor health have been linked in a number of studies both in Britain and in the rest of the world . But the large number of these tower blocks precludes their immediate destruction , use for alternative housing or sale to private developers. Housing co-operatives are an interesting alternative , set up to give back control of municipal housing to those who live in it.

The main aim of this study was to look at the health of women living in a tenant management co-operative in an area of high-rise housing in Glasgow. It also aimed to examine other relevant aspects of their lives including housing, political power and social networks.

The report begins with a statement of the aims, objectives and hypotheses of the project, followed by the background of housing and health research , and background information on the instruments used in the study. It includes a validation study on a health status measure ,the Medical Outcomes Study Instrument carried out for the project by myself as principal researcher in collaboration with two colleagues from my department .

The research was conducted during my attachment as a General Accident Research Lecturer in General Practice at the University Department of General Practice in Glasgow, from August 1988 to December 1989 and from March 1991 to August 1991.

3.Aims ,Objectives and hypotheses

Hypotheses

(a)Flowing

Aims

1. To explore the relationship between subjective health and housing control.
- 2.To use the Medical Outcome Study Instrument ,a health status measure to further the development of instruments for measuring health status in a community setting.
- 3.To examine popular concepts of causation of common diseases and look at help-seeking behaviour.

Objectives

- 1.To examine associations between health status ,mental health and housing control in a tenant management co-operative.
- 2.To consider the possible links between health and housing by studying health locus of control,political efficacy, and social support .
- 3.To discuss the role of social networks in mental and physical health.
- 4.To further validate the Medical Outcome Study Instrument by considering its relationship to use of medical services,the Hospital Anxiety/Depression rating scale (a mental health measure), and demographic data.
- 5.To survey the Health Beliefs of this population particularly their ideas of causation of common illnesses and potential behaviour.

4. Background

Hypotheses

(a) Housing

1. There is a difference in the health status of those living in the co-operative compared to those in the comparison area.
2. The people who are involved in the co-operative have different health to those who are not involved.
3. These differences are still apparent after controlling for other factors.
4. Those in the study area have different perceptions of housing and political efficacy compared to those in the comparison area.
5. There is a difference in the health locus of control in the two populations.

(b) Medical Outcomes Study Instrument

1. Medical service use .

Lower scores will be found in:

Those with one or more chronic medical problem

Attenders at GP in last 4 weeks

Attenders at GP in last year

Those admitted to hospital in the last year

Casualty attenders in last year

Patients on medication long-term

2. Social support.

Lower scores will be found in:

Those with a lower quantity of supporters e.g. friends and family

Those with a lower frequency of this support

4. Background

Housing and health

Since the early 1960's disquiet has been expressed about the health of people who live in high-rise flats. These people are often socially disadvantaged with low levels of education, high levels of unemployment, and a great dependence upon doctors, social workers, social security, and the local council for housing.

Health and housing were first linked in the Victorian era, when overcrowding, poor sanitation and infectious diseases were rife. With the development of municipal housing and the general increase in the health of the population great strides were made with better housing and public health.

In 1923 Le Corbusier in his work on *The Radiant City*¹ considered the idea of building houses vertically rather than horizontally in order to increase the amount of light and space available to each household. His ideas gained general acceptance amongst architects and town planners.

By the 1950's there was a desperate need for new housing due to the growing population and war damage. High-rise flats were built by many local authorities with financial incentives from the government, but in the haste to build tower blocks, cheap inadequate materials and poor workmanship abounded.

In Glasgow, four storey tenements built in Victorian and Edwardian times, predominated until after the Second World War. Many were of poor quality, overcrowded and with inadequate amenities. The District Council began to re-house a great number of people in high-rise and low-rise housing on the edge of the city in green field sites. Over 250 tower blocks were built in the Glasgow city area in this time, ranging in height from 10 to 30 storeys high.

But in the early 1960's questions were raised over the health of people living in this new form of housing. Fanning in 1967 studied servicemen's families living in high-rise housing and found that they consulted their General Practitioner about psycho-neurotic symptoms more frequently than a group living in houses. Jephcott writing about the flats in Glasgow in the late 1960's pointed out the "attrition of social life" associated with tower blocks³.

Following this concern a NSPCC study by Stewart showed that mothers with young children

living in tower blocks were more liable to social isolation and symptoms of psychiatric disorders. ⁴ More recently Strachan working in Scotland showed that those living in damp housing were more likely to report respiratory symptoms in their children despite unchanged laboratory measures of respiratory function ⁵. Hunt found that dampness and mould in flats in Edinburgh and Glasgow was associated with an increased reporting of physical symptoms, including headaches and respiratory problems. ⁶ She related objective assessments and cultures of mould with health problems.

More evidence came from work by Keithley who reported that those living in "bad" area of housing in Gateshead, (as determined by local health professionals) were more likely to report poor health ⁷, including long-term illness and recent respiratory problems or depression.

The research has not been confined to the UK. Jacobs described the prevailing atmosphere of anonymity present in municipal housing in the USA ⁸ and discussed the features which seem to increase the problems of the people who have to live in these developments:- Child care is made more difficult by the lack of adequately supervised play areas leading to frustration and crime. The lack of windows onto a central corridor increases the sense of isolation, as people cannot be seen coming and going. Areas set out as recreation beside the tower blocks are regarded not as amenities but as wastelands which no-one owns and no-one wants to allow their children to play on, because of the fears of traffic and dog excrement.

Coleman in her detailed study of municipal housing described the six strongest influences on social malaise ⁹ :- (a) Dwellings per entrance, (b) Dwellings per block, (c) Storeys per block, (d) Overhead walkways, (e) Spatial organisation, (f) Vertical routes. The high-rise building has large number of flats all served by one entrance with overhead walkways and a lack of private space, which allow crime, social isolation and factors associated with ill health to flourish.

In high-rise flats the level at which people live appears to affect mental health. Those living above the fourth floor were more prone to report mental health symptoms than those living below, controlling for social class and education ¹⁰.

The problems are not confined to those who live at height. Masters and Birtchnell discovered increased depression in people who live in "slab" blocks, the low-rise flats common in many housing estates in the South of England. They relate this to the long walkways above ground and limited access. ¹¹

However other social factors are present in this population. Townsend and Davidson analysed all the available evidence on social class and illness and concluded that people from lower social classes experienced substantially higher levels of mortality and morbidity than those from higher social classes¹². Wilkin and Leavey pointed out that inner city dwellers were more likely to suffer chronic diseases and recent ill health.¹³ By comparing more deprived areas in

Manchester with more affluent areas, they found that 19% of the people in the poor areas described their health as not good, compared to 12% for the more affluent areas.

Cook and Morgan concluded in an editorial in 1982 that more work was needed on families in high flats. They emphasised the use of adequate control groups to allow for these important social factors which may also influence health as well as the poor housing¹⁴.

Tenant Management Co-operatives

In 1976 the first Tenant Management co-operative was set up in Glasgow along the lines of those already started in London. The first Scottish co-operative in Summerston took responsibility for all management functions, bar the ownership and rent collection. This was followed by others as the experiment in Summerston was deemed a success.

With a growing problem of poor quality of housing stock and inadequate funding, the option of Tenant management became more attractive to local councils.¹⁵ In 1982 Glasgow District council appointed a co-operative development officer. There are now 16 tenant management co-operatives in schemes in Glasgow. Other ways of providing low-cost housing have included Housing Action Trusts and housing associations.

Kennishead, the tenant -management co-operative under study, was built in 1970 . Five tower blocks of 20-24 floors were placed in a green field site about 5 miles from the centre of Glasgow. The flats were popular at first. However after changes in the housing acts ,many people were rehoused there in a short period of time. Many flats were let to single young people who used them as a "Giro Drop" or for parties while living with their own parents elsewhere. By the early 1980's, after a series of suicides, the area acquired the nickname "Suicide Alley". In 1981 a group of 6 tenants who belonged to a large tenant association covering much of the south of Glasgow, decided to break away and form a tenant association for Kennishead . In 1984 they requested a "letting initiative" from the council, which allowed them to advertise for new tenants . Theoretically they had the power to veto an application ,but this was not exercised from 1984-7 .

The tenant association committee then decided to try to form a housing co-operative after hearing about other co-operatives in Glasgow. After a development phase and public meetings, the co-operative took over the management of 750 flats in 1987.

They negotiate a budget with the council of approximately £275 a flat per year . Contracts with local tradesmen stipulate all repairs must be carried out in 5 working days. Applicants for flats must have an interview and the co-operative and council have laid down criteria on which applicants can be refused a flat. Only one or two applicants have been refused since 1987, because they refused to join the co-operative. A committee is elected which appoints 2 full-time executive officers . Major capital expenditure, the exterior of the building and the lifts are still under council management, whilst the council collects rents.

Choice of Sample Population

No research has been published focused on the health of people living in housing co-operatives. However an interesting report by Burbage¹⁶ from the Department of the Environment on resident management corporations in the USA described the positive response of tenants to the idea. For example, the National Council for Neighbourhood Enterprise (NCNE) stated in its' report in 1986 that "In resident Management developments, teen pregnancy, crime and welfare dependency have declined while creativity, self-respect and the overall quality of life have improved."

As Mitchell Hill Flats was reported to be similar to Kennishead. But after 17 interviews, it became clear that Mitchell Hill was much more deprived than Kennishead and people would not even answer their door. So this area was rejected as the comparison area.

The second comparison area, Pollokshaws, was chosen because it appeared very similar to Kennishead in construction, being built around the late 1950's, around 20m above high and in a series of blocks. It is next to Pollok Park, where the Glasgow Golf Club is, but about 1 mile from Kennishead. There is local shopping and a railway station nearby.

Both Kennishead and Pollokshaws still follow council policies for letting. The areas are not a perfect match (see table 1). The population numbers around 1981 are similar, are mostly social class IV and V.

Table 1: comparison of census data from two areas.

	Kennishead	Pollokshaws
Immigrant stock	24	24
Unemployment	21%	17%
Migrant population	14%	14%
Overcrowding rate	30%	36%
Standardised Mortality (All Women 1981-2)	107	83

It was decided to include only women over 15 in the study. Men of social classes IV and V in the West of Scotland may display health problems to outsiders, because of the cultural beliefs about machismo etc. Women are traditionally spend more time in the home, so any theoretical beneficial effects of the co-operative may be easier to detect in them.

Choice of Sample Population

The Kennishead co-operative was chosen after visits to a number of tenant management co-operatives and ownership co-operatives. The tower blocks have not changed since the co-operative was formed and no extra capital spending has taken place. It is about 5 miles from the city centre on the edge of the Green Belt and is served by a suburban railway station and a row of shops.

The first comparison area chosen was Mitchell Hill Flats which appeared to be similar to Kennishead. But after 17 interviews, it became clear that Mitchell Hill was much more deprived than Kennishead and people would not even answer their doors. So this area was rejected as the comparison area.

The second comparison area, Pollokshaws, was chosen because it also appeared to be similar to Kennishead in construction, being built around the late 1960's, around 20-24 stories high, and in a series of blocks. It is next to Pollok Park, where the Burrell collection is housed and about 1 mile from Kennishead. There is local shopping and a railway station nearby.

Both Kennishead and Pollokshaws still follow council policies on letting. The areas are not a perfect match (see table 1). The population numbers around 2000 people in each area, mostly social class IV and V¹⁷.

Table 1: comparison of census data from two areas¹⁸

	Kennishead	Pollokshaws
Jarman ¹⁹ Index	18	0
Unemployment	21 %	13 %
Migrant populations	9 %	8 %
Overcrowding rates	46 %	56 %
Standardised Mortality (All Women 1985-7)	107	83

It was decided to include only women over 16 in the study. Men of social classes IV and V in the West of Scotland may deny any health problems to outsiders, because of the cultural beliefs about machismo etc. Women traditionally spend more time in the home, so any theoretical beneficial effects of the co-operative may be easier to detect in them.

5. Validation Study of the Medical Outcomes Study Instrument

This section is a reproduction from: The Medical Outcomes Study Instrument (MOSI)-use of a new health status measure in Britain. Anderson J St C Sullivan F Usherwood TP Family Practice ,Volume 7, (Sept. 1990) no.3 pp 205-218

The other authors of this section were Dr Tim Usherwood ,now Senior Lecturer Dept of General Practice Sheffield University and Dr Frank Sullivan ,Lecturer in the University Department of General Practice, Glasgow.

Introduction - Validation study

Health is a slippery concept, being not merely the absence of disease or infirmity. Measuring the functional health status of individuals and populations however allows assessment of needs and examination of the effects of interventions. ²⁰ As General Practice in the United Kingdom

moves into the 1990's these issues become more important, both to allow development of new ways of delivering health care and because of the management implications of the proposed changes in the National Health Service. ²¹

Although a number of measures of perceived health have been developed in recent years, none of them has emerged as the "Gold standard" in primary care. Many of them are based on groups of patients with chronic disease ²² and consist of lengthy questionnaires, making them less suitable for primary care research. The authors realised that a brief, easy to complete questionnaire which satisfied accepted psychometric criteria for validity and reliability and was based on primary care models of health was needed both for research and for outcome measurement in clinical care.

The Medical Outcomes Study Short Form health survey ²³ (in this paper the Medical Outcomes Study Instrument or MOSI) which is a 20 item short version of the Rand Health Insurance Experiment form ^{24 25} (108 items), was developed by Stewart, Hays and Ware for measuring health status. The MOSI measures health in six categories, four with multi-item scales (General Health Perceptions, Mental Health, Physical Function, Role Function) and two with single questions (Social Function, Pain).

The MOSI has been used in the USA in general ²⁶ and patient populations ²³ as well as a large study of health care provision and outcome, the Medical Outcomes Study, ²⁷ currently in progress. The study has already shown differences in the scores on the MOSI for patients with diseases including hypertension, diabetes, chronic lung disease and angina ²⁸.

This study aimed to use the MOSI in a survey of a convenient sample of the general population in the UK, with a view to testing its acceptability, reliability and validity in that context.

Part 1 of the Nottingham Health Profile (NHP) ²⁹ was chosen for comparison because it is the most widely used self-administered health status measure in primary care research in the UK.

Extensive literature exists on its use ³⁰. It has been proposed ²² as "a standardised tool for the survey of health problems in a population." However McEwen and Hunt, two of the original team who developed it, have pointed out that it may not be suitable for use in a general population. (personal communications). Kind and Hill ³¹ concurred with this showing that the instrument may lack sensitivity for minor impairments of perceived health.

Method - Validation study

Pre-pilot

The original Medical Outcomes Study Instrument (MOSI) was examined by the investigators for features which might be misleading or cause confusion in English speakers in the United Kingdom. The MOSI was also given to three groups of patients during consultations in three different practice areas (but not to the sample population). Again any features felt confusing or unclear were noted. In consequence four modifications were made:

1. (Question 4e) "walking one block" changed to "walking 50 yards",
2. (Question 4b) "carrying groceries or bowling" to "carrying groceries or light exercise",
3. "Check the Box" to "Tick the Box"
4. The deletion of (Questions 6+7) "going to school" from the role function questions.

The question numbering was altered from the original to fit in with the study questionnaire design and the layout modified for page setting reasons.

Sample population

From a Practice list of 6447 in an urban area of Glasgow, mostly of social classes III-V³², the names of all women aged 30-40 inclusive were drawn (n=491). Of these 486 were usable for the study as 5 had no address on the computer.

Pilot

The names of 50 women were drawn from the sample population. The method for the pilot study was identical to the full study (see below). There was an adequate response rate of 38/50 adequately completed questionnaires. The results from the pilot were included in the results of the full study.

Main Study-Validation

The remaining 436 women were all sent a copy of the MOSI plus a copy of the NHP by first-class post with a signed covering letter in a hand-written envelope from one of the General Practitioners in the practice (FS). The order in which the questionnaires were stapled together was swapped in half the sample to allow for assessment of respondent fatigue. Respondents were also asked to answer questions on marital status and employment.

The questionnaires were coded to allow reminders to be sent after two weeks which contained a letter but did not contain a copy of the questionnaire. These were available on request.

Neither the MOSI scores nor the NHP scores are normally distributed so non-parametric statistical methods (Mann-Whitney, Kruskal-Wallis one-way analysis of variance or χ^2 test) were used as appropriate. The null hypothesis was rejected at a significance level of $p < 0.01$.

Tests of construct validity

It was decided before the study began that construct validity could be tested by analysis of the

From the Practice computer record (GPASS)³³ of diagnoses and medication a record was made for each subject of diagnostic groups (using the RCGP Classification of Diseases, Problems and Procedures)³⁴ by one of us 'blind' to the questionnaire scores. The GPASS record consists of a summary of any major diagnoses and regular repeat prescriptions. It is updated regularly by practice staff with the information provided by the GPs in the practice.

Each respondent was classified according to:

- (a) The number of major diagnoses (0-3) on summary on computer.
- (b) Whether mental illness was recorded on the computer summary or not.
- (c) The number of medications on repeat prescription including contraceptive pills but not dressings etc.

Data Handling

The MOSI is scored in six categories which are put into a scale of 0-100 with 100 representing complete health. The categories are General Health Perceptions, Mental Health, Pain, Social Functioning, Physical Functioning and Role Function.

The NHP Part 1 is scored in 6 categories in a scale 100-0 with 0 representing complete health. The categories are Energy, Emotional Reactions, Social Isolation, Physical Mobility, Pain, and Sleep.

For neither questionnaire can the scores be summed across the categories.

An Excel spreadsheet on an Apple Macintosh SE computer was used to produce the MOSI and NHP scores. Statistical analysis was undertaken with Minitab software on ICL mainframe at Glasgow University and with SPSS-PC software at Sheffield University.

Twenty-seven questionnaires were incomplete. The fifteen with more than three items not completed were discarded. "No problem" or "complete health" was assumed for incomplete items on the remaining twelve.

Statistical methods

Neither the MOSI scores nor the NHP scores are normally distributed so non-parametric statistical methods (Mann-Whitney, Kruskal-Wallis one-way analysis of variance or X^2 test) were used as appropriate. The null hypothesis was rejected at a significance level of $p < 0.01$.

Tests of construct validity

It was decided before the study began that construct validity could be tested by analysis of the

MOSI scores by employment status, marital status, total and mental illness diagnoses, and by repeat medication.

To test convergent validity item-scale Spearman correlations (corrected for overlap) were calculated. A respondent with poor overall health, such as one on regular medication, or with one or more diagnoses on the computer summary, might be expected to have low scores on all categories on the MOSI. Patients with mental illness should have lower scores on the Mental Health scale. Those with a chronic disease such as arthritis should have particularly low scores on the Physical Function and Pain scales. Single people might have lower role function and Social Function scores.³⁵ Unemployed people may be depressed with lower Mental Health scores³⁶.

It appeared to us that there were five categories on the MOSI and NHP which were broadly similar in content. These were:- (MOSI/NHP) General Health Perceptions/Energy, Mental Health/Emotional reactions, Pain/Pain, Physical function/Physical mobility, Social function/Social isolation. The MOSI scores of those with a positive (>0) score on the Nottingham Health Profile in each category were expected to be lower than those with no problems on the NHP.

Tests of Convergent & Divergent Validity and Reliability - Validation study

To test convergent validity item-scale Spearman correlations (corrected for overlap) were calculated.³⁷ To test divergent validity we decided that the item to own scale correlation should be higher than the correlation between the item and other scales.

The internal reliability was calculated according to Cronbachs formula³⁷ using average inter-item Spearman correlation coefficients. Before the study began it was decided that Cronbachs coefficients of 0.50 would suggest that the reliability of the MOSI is acceptable for group comparisons. A coefficient of 0.90 would be required for inter-individual comparison.³⁷

Regression of items in the MOSI on overall scores in each category.

To examine the influence of individual items on the overall score the item scores and category scores were ranked and the item score ranks regressed against the category score ranks. By this method the relative contributions of each question to the overall score could be assessed.

Results-Validation study

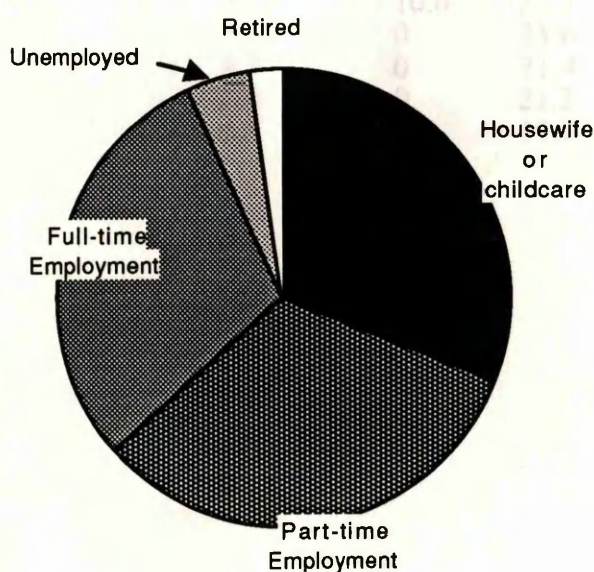
Response rate : 341 fully completed and 12 partially completed but salvageable replies were received after the pilot and the two mailings of the main study. 15 other replies (2%) were unusable or returned as undelivered by the post office. This gives a usable response rate, for the original 486 patients for whom we had addresses, of 73% (353/486). This 353 constitutes "the sample" referred to in the rest of this paper.

Demographic data.

293 (83%) of the sample were married, 19 (5%) were single, 22 (6%) divorced and 16 (4%) separated. Three (0.8%) were widowed.

112 were in full-time (31%) and 102 in part-time employment (28%) while there were 107 housewives and/or women home looking after their children (29%). 15 (4%) women were unemployed looking for work and 8 (2%) retired due to health reasons. (Figure 1)

Pie Chart of employment status of women (Figure 1)



Data extracted from GPASS records

Ninety-four (26%) of those who replied had one diagnosis on the practice computer, 62 (18%) two and 31 (9%) three. 74 (21%) of the sample had one or more mental disorder diagnosis on the computer summary.

99 (28%) were on one repeat prescription, 31 (9%) on two prescriptions and 25 (6%) on three or more.

Frequency distributions

The median scores and frequency distributions for the MOSI and the NHP are shown in Table 2 and Figures 2-13.

The MOSI scores are less skewed than the NHP scores. Note that the MOSI scales run from 100 (complete health) to zero and NHP scales run zero (complete health) to 100.

Table 2
Distributions of MOSI and NHP category scores

Medical Outcomes Study Instrument (MOSI)

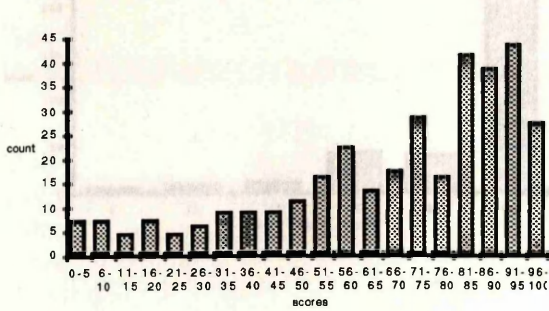
<u>Category</u>	<u>Mean</u>	<u>Median</u>	<u>SD</u>
General Health Perceptions	69.9	77.0	25.5
Mental Health	71.2	76.0	19.6
Role Function	71.3	100	39.2
Social Function	87.7	100	22.3
Physical function	83.4	100	27.3
Pain	65.8	75.0	33.8

Nottingham Health Profile

<u>Category</u>	<u>Mean</u>	<u>Median</u>	<u>SD</u>
Energy	23.9	0	34.9
Emotional reaction	18.9	10.0	25.7
Sleep	15.4	0	25.6
Social isolation	9.7	0	21.4
Pain	8.9	0	21.2
Physical Mobility	5.3	0	12.0

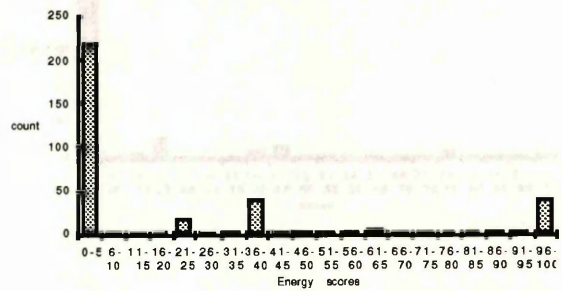
MOSI results

General Health Perception(MOSI) Fig2



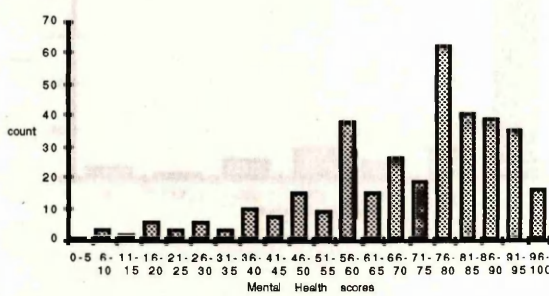
NHP results

Energy (NHP) Figure 5



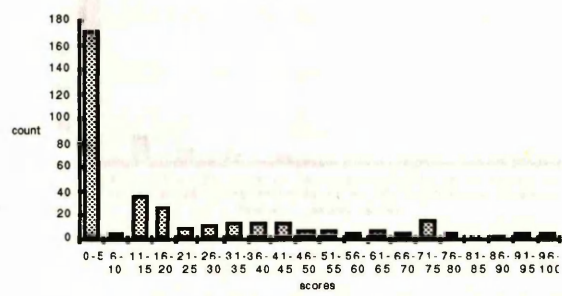
Physical function (MOSI) Figure 2

Mental health (MOSI) Figure 3



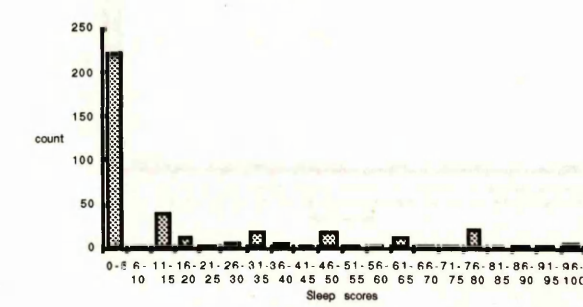
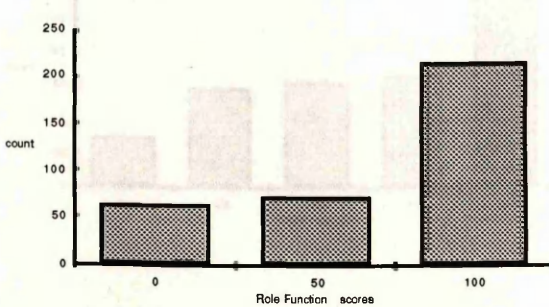
Physical Energy (NHP) Figure 11

Emotional reactions (NHP) Figure 6

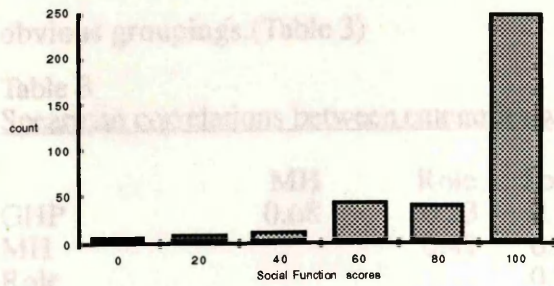


Role Function (MOSI) Figure 10

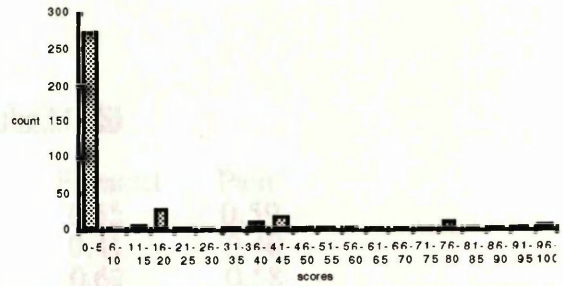
Sleep (NHP) Figure 7



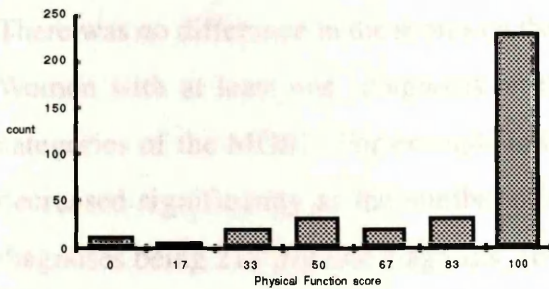
Social Function (MOSI) Figure 8



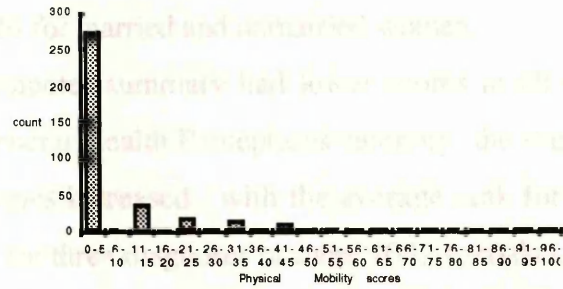
Social Isolation (NHP) Figure 11



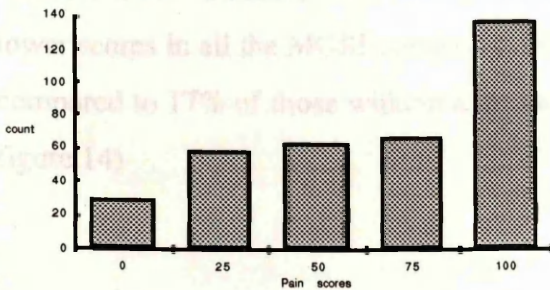
Physical function (MOSI) Figure 9



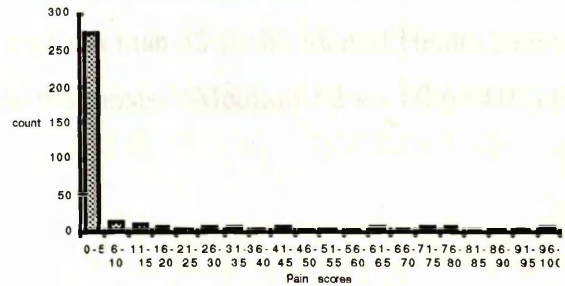
Physical Mobility (NHP) Figure 12



Pain (MOSI) Figure 10



Pain (NHP) Figure 13



Correlation between scales on the MOSI

Spearman correlations between the categories of the MOSI ranged from 0.4-0.68 without any obvious groupings.(Table 3)

Table 3
Spearman correlations between categories within the MOSI

	MH	Role	Social	Physical	Pain
GHP	0.68	0.53	0.67	0.55	0.59
MH		0.41	0.54	0.41	0.40
Role			0.56	0.62	0.58
Social				0.48	0.40
Physical					0.52

Construct Validity

There was a higher score for all categories of the MOSI for those in employment (including housewives) compared to those not in employment ($p < 0.01$).

There was no difference in the scores on the MOSI for married and unmarried women.

Women with at least one diagnosis on the computer summary had lower scores in all the categories of the MOSI. For example in the General Health Perceptions category the scores decreased significantly as the number of diagnoses increased, with the average rank for no diagnoses being 212, for one diagnosis 161 and for three diagnoses or more 104. ($p < 0.01$)

Those on 2 or more repeat prescriptions of drugs had lower scores on two of the MOSI categories, General Health Perceptions and Mental Health but not on the Physical Function or Pain scales. The median scores for general Health perceptions were 82 for those on zero or one drug and 67 and 57 respectively for two and three or more drugs. ($p < 0.01$)

Patients with a mental illness diagnosis on the GPASS database (21% of the sample) had lower scores in all the MOSI categories. 50% scored less than 55 in the Mental Health category compared to 17% of those without a mental illness diagnosis. (Medians 62 vs. 80, $p < 0.01$). (see figure 14)

	General Health Perceptions	Mental Health	Physical Function	Social Function
Positive NHP	55	60	50	100
No problems	87	85	100	100

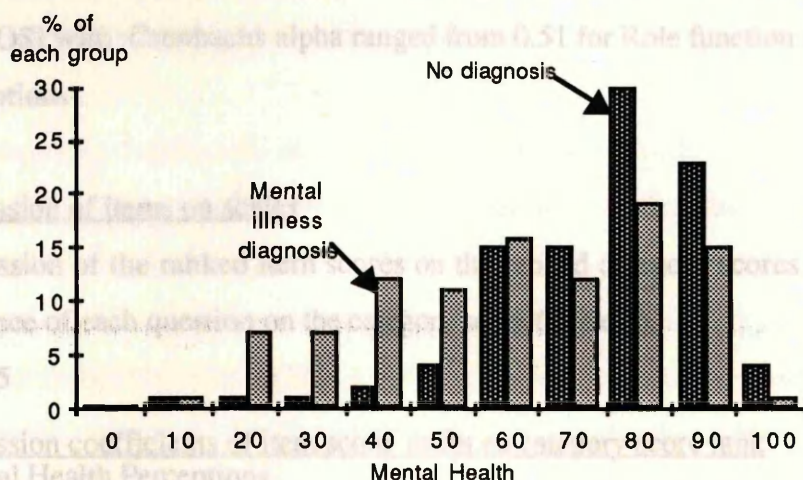
Order of questionnaires

The order of the questionnaire did not affect the scores in any category of the MOSI and NHP and there were no differences in the number of spoiled questionnaires.

Convergent and Divergent Validity and Reliability

Spearman correlations between item scores and their parent category score (corrected for overlap) ranged from 0.43-0.79 with the majority above 0.54.

Mental health scores (MOSI) of respondents with and without a mental illness diagnosis (Figure 14).



Comparisons of MOSI and Nottingham Health Profile scores

The respondents were divided into two groups depending on their score in each category of the Nottingham Health Profile:

- (1) Those with positive scores on the NHP (greater than 0)
- (2) Those with no reported problems on the NHP

In Four-Fifths of the equivalent categories in the MOSI, those with positive scores on the NHP had significantly lower scores on the MOSI than those with no reported problems. ($p < 0.01$) (table 4)

Table 4 :Median MOSI scores for those with positive score on NHP versus those without problems on the NHP

	MOSI scores				
	General Health Perceptions	Mental Health	Pain	Physical Function	Social Function
Positive NHP	55	60	25	50	100
No problems	87	84	75	100	100

Order of questionnaires

The order of the questionnaire did not affect the scores in any category of the MOSI and NHP and there were no differences in the number of spoiled questionnaires.

Convergent and Divergent Validity and Reliability

Spearman correlations between item scores and their parent category score (corrected for overlap) ranged from 0.45-0.79 with the majority above 0.68.

Divergent validity was also substantial with all questions (except Question 6 on role function) correlating better with their own scale than other categories.

The internal reliability was acceptable for group comparisons for the four multi-item scales of the MOSI with Cronbachs alpha ranged from 0.51 for Role function to 0.65 for General Health Perceptions.

Regression of items on scales

Regression of the ranked item scores on the ranked category scores demonstrated the relative influence of each question on the category score. (Table 5).

Table 5

Regression coefficients of item score ranks on category score rank

General Health Perceptions

Question	Coefficient
3. "In general would you say your health is...?"	0.40
14a. "I am somewhat ill."	0.29
14b. "I am as healthy as anybody else."	0.10
14c. "My health is excellent"	0.05
14d. "I have been feeling bad lately"	0.45

Mental Health

How much time during the past month:-

Question	Coefficient
9. "Have you been a very nervous person?"	0.42
10. "Have you been calm and peaceful?"	0.23
11. "Have you been downhearted and blue?"	0.45
12. "Have you been a happy person?"	0.04
13. "Have you felt so down in the dumps that nothing could cheer you up?"	0.29

(Coefficients add up to greater than 1 due to scoring system)

Questions 3 and 14d have most influence on the General Health perceptions category score, with Questions 14b and 14c contributing less. Questions 9 and 11 have most influence on the Mental Health score and question 12 the least.

Discussion-Validation study

The range of scores obtained in this study are very similar to those obtained in the patient sample in the Medical Outcomes Study in the USA²⁸, but they are lower than the scores for the general population in the same study. This finding illustrates the danger of comparing data from apparently similar groups from different cultures.

The frequency distribution of the MOSI responses was well spread especially for the General Health Perceptions and Mental Health categories. The distribution was more skewed towards the "healthy" end of the scale in the physical, role and social function categories. This was expected. In this age group it would be surprising if there were many women with sufficient physical ill health to be unable to participate in vigorous exercise because of their health. Women without 'severe' health problems are also unlikely to be able to limit their activities in the role function area of their life both for practical and cultural reasons.

Pain scores are likely to have been affected by dysmenorrhoea. The question asks about pain over the past month but does not allow discrimination between cyclical and constant chronic pain. The effects of these two different kinds of pain can be very different with chronic pain causing depression and limitation in role function.

Lower MOSI scores were associated in all categories with the number of diagnoses, identified mental illness, unemployment and positive scores problems on the Nottingham Health Profile. But they were only associated with number of repeat prescriptions in the General Health Perceptions and Mental Health scales. MOSI scores were not affected by marital status.

Hannay showed that married women with children suffer more mental health symptoms.¹⁰ Our results showed no difference in the MOSI scores of married and single people. We expected differences, especially on the role and social function scales. This finding casts some doubts on the construct validity of these scales.

The construct validity of the Mental Health scale appears to be supported by these results. 50% of those with a mental disorder diagnosis score less than 55 on the Mental Health scale as opposed to 17% of those without one.

The number of repeat prescriptions were not associated significantly with Pain and Physical function as expected. The inclusion of the contraceptive pill may have blurred the distinction between "ill people" on medication for long term problems and fit healthy women on the

pill, who are likely to make up 20-30% of our population. Patients with a chronic painful disease such as arthritis may be visiting their GP regularly for their treatment rather than obtaining it on repeat prescription.

Those with problems in each category of the NHP had lower scores on the equivalent categories of the MOSI. This helps validate the MOSI while confirming our belief that the two instruments appear to be based on similar models of health.

The Nottingham Health profile scores were more skewed to the "healthy" end of the scale(0) as previous studies had predicted. The Emotional Reactions category had a median of 10 but in all the others it was zero. 30% of the sample had perfect scores on the NHP while 15% of them had near-perfect scores on the MOSI (no score less than 95 on any scale.)

All but one of the 20 questions of the MOSI correlate better with their own category than other categories confirming that the scales are discrete and should be not be summed across categories.

The more severe of the role function questions correlated better with other scales than its own. This function may be significantly affected by morale and motivation as well as physical health. Role function is operationalised by questions which suggest a rather limited interpretation of the concept of role.

The internal reliabilities of the MOSI, Cronbachs alpha, were 0.51-0.65 which suggests that the instrument is useful for group comparisons but should be used more carefully for inter-individual studies. Reliability might be improved by changes in the layout of the questions. There was evidence of "the straight line response set" phenomena³⁸ for the Mental Health and General Health Perception questions when respondents tick the box below the last one without reading the question. The initial question at the beginning of the section could be repeated at the beginning of each question. Although this would lengthen the instrument the improvement in reliability might allow it to be used for inter-individual assessments.

Stewart, Hays and Ware reported reliabilities (Cronbachs alpha) of 0.81-0.88 for their use of the MOSI in a general population in the USA.²³ They used Pearsons correlation coefficients, while we used Spearman correlations because the data was not distributed normally. However Pearson correlations for our data were not very different to our Spearman correlations.

Regression of the ranked question scores on the ranked category scores raises an interesting question. Are some of the questions more "powerful" in the calculation of the overall category score? In the General Health Perceptions section the question on overall health and the question "I have been feeling bad recently" appear to determine more of the score than the other three items. In the Mental Health category the question "How much time in the last month have you been a happy person?" carries little weight in the overall score. People may not be able to understand this concept or may feel bemused by its apparent simplicity. The MOSI contains positive and negative statements which may not elicit identical reactions.

Is the Medical Outcomes Study Instrument, the functional health status measure of choice for research and health outcome measurement in primary care? The results of this study make the MOSI a good candidate for the following reasons:

- (1) Patient acceptability: In our sample of women aged 30-40 in the general population, the response rate of adequately completed questionnaires was 73% suggesting that the MOSI was acceptable to patients.
- (2) Frequency distributions: each category of the MOSI produced scores which were spread across the whole range.
- (3) Construct validity: In the General Health Perceptions and Mental Health categories, the construct validity was adequately proven.
- (4) Internal reliability: The coefficients of reliability, Cronbachs alpha, were 0.51-0.65 which satisfies the criteria for comparison between groups, but not individuals.

On the other hand, there are some problems with the MOSI:-

- (1) The Pain and Social Function categories are based on single items and are therefore of questionable reliability.
- (2) Our results raise questions about the construct validity of the Role, Social and Physical Function categories.
- (3) We gained an impression of a "straight-line response set" in the series of questions on Mental Health and Physical Function.

Further research is needed. Comparisons of the scores over time for groups and individuals would allow an assessment of temporal reliability. Comparisons with clinical assessments would provide a more rigorous test of construct validity.

6. Background: other concepts

(a) Hospital Anxiety Depression Rating Scale (HAD)

The questionnaire is divided into two sections , anxiety and depression³⁹ with seven questions in each section with positive as well as negative statements phrased in the personal mode. Respondents are forced to choose one of four responses . It is scored on the basis of 0-21 for each category with lower scores indicating less anxiety and less depression and the two scores are not added together.

It has been used in General Practice ⁴⁰ in the United Kingdom having been developed in Outpatient clinics as a discriminative instrument.³⁹ It was developed in response to a need for a scale which could be used in community psychiatry.

A comparison study in general practice of the HAD and the General Health Questionnaire (GHQ) was carried out .The HAD is more sensitive (90% versus 77%) than the GHQ . Its' positive predictive value for anxiety and depression was 81% compared to 77% for the GHQ with a threshold score of 8 for the HAD and 5 for the GHQ.⁴⁰

In another study in outpatients in patients with irritable bowel syndrome, the HAD was found to have a sensitivity of 76% and a specificity of 79% in the detection of psychiatric illness.⁴¹

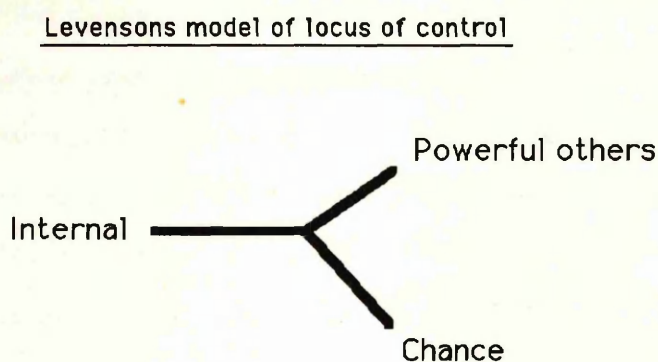
It was chosen to allow more detailed detection of differences in anxiety and depression in the study than might be allowed by the mental health category of the MOSI.

(b) Health Locus of Control

Health locus of control is a concept derived from Rotter's work on the internal-external locus of control.⁴² Locus of control is a generalised expectancy to perceive reinforcement either as contingent upon one's own behaviour (internal control) or as a result of forces beyond one's control and due to chance fate or powerful others (external control).

Levenson developed a model of locus of control based upon Rotter's original work. He divided the original internal-external construct into Internal and External -Powerful others and External -Chance (see figure 15).⁴³

Figure 15: Levenson's Model of locus of control



In the Wallston Multidimensional health locus of control questionnaire there are three subscales: powerful others, chance and internal. There are Likert-type scales for respondents to agree or disagree.⁴⁴ It has been extensively used in general and patient populations in the USA⁴⁵, and also used in the UK.⁴⁶

Wallston and Wallston divided people into different types depending on their results on each scale e.g. Type II have high scores on the Powerful Others scale, low on Chance, low on Internal. Although these categories could be used in a judgmental fashion with high internals seeming to be "the best", they point out that in some situations the high chance person may be better at adapting than the high internal, e.g. to incurable cancer and the high powerful others may comply with medical treatment better.⁴⁴

Abella and Heslin found that the respondents to a questionnaire who valued both good health and had an internal locus of control were the most likely to engage in preventative health behaviour.⁴⁷ Marshall found that the health locus of control was a specific predictor of subjective well being, compliance with a medical regime and satisfaction with the medical services provided⁴⁸.

Other factors than health affect health locus of control. Pill and Stott in South Wales found that those with an internal locus of control were more likely to own their own home.⁴⁶ Levin found differences in different branches of Christianity. Catholics and Anglicans had a more internal Health Locus of control while Presbyterians (e.g. Church of Scotland) had a higher score on the powerful others scale.⁴⁹

In studies of mortality in Alameda County USA, Berkman and Syme discovered that people with fewer connections in their social network were at increased risk of dying from ischaemic heart disease, cancer, and strokes.⁴⁷ Although this phenomenon could have been accounted for by illness causing a decreased number of social contacts, it led to further research.

A prospective study of 2754 people in Tecumseh Michigan showed that men were more likely to die over a 9 year period if they had fewer social contacts.⁴⁸ Blazer demonstrated that those with the highest perceived social support had the lowest mortality in a study in Durham County USA.⁵⁰ Welin found that cardiovascular disease were less likely in Swedish men who had more home activities, outside home activities and people at home.⁵¹

In a study of adjustment after a burn Dyer's group showed that measures of outside support from family and friends were significantly related to life satisfaction and self-esteem and moderated the rehabilitation process.⁵² Houtman demonstrated that the quality of inter-personal relationships and experienced social support affected psychological well being in German men following Myocardial Infarction.⁵³

Good social support has been shown associated with improved symptom reporting in asthma, and migraines.⁵⁴ Success in coping with mastectomy, recovery rate from stroke and quality of life in terminally ill patients have all been reported to be affected by social support.⁵⁵

Preventative health behaviour may also be modified. Those who had maintained their cardiovascular health status in a risk reduction programme were compared to those who had not. Maintainers and non-maintainers were found to have similar levels of general support. But for four types of support information or advice, appraisal, emotional support and availability highly-significant differences were found between the two groups. Maintainers' networks were more family centred and denser.⁵⁶

Barowitz in a study of use of paediatric health services in middle class Americans noted that

(c) Social Support

The network of family and friends who support an individual has come to be called the social support network. There is increasing evidence that these networks have an influence on physical and mental health and the way in which individuals perceive their health and seek medical attention.⁵⁰

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Horowitz in a study of use of paediatric health services in middle class Americans noted that

individuals with large non-dispersed networks were more likely to use health services for their children than individuals with smaller geographically dispersed networks. She believed that extensive tightly knit social groups are more likely to ensure that network members adopt the group health norms. In their population the group health belief was that children with illness should be taken to the doctor early. The function of support networks and not just structure appeared to be important⁶⁰. Family support in Mexican - Americans was found to lead to early presentation for ante-natal care but decreased likelihood to present for curative care when acutely ill⁶¹.

The presence of a network does not necessarily mean that a person uses it and the use of it is not necessarily beneficial or helpful⁶². This is common sense, since it is well known that patients' anxieties can be raised by discussing a physical symptom with a relative rather than reduced.

Subjective health, social support and locus of control were related by Hibbard in a population of 2603 adults in Oregon. Under conditions of perceived external control, more social ties are related to better subjective health. Among those with a more internal locus of control, there was no difference between those with low or high numbers of social ties. The apparent differences in subjective health at low levels of social ties between "internals and externals" disappeared at high levels of social ties.⁶³

Eckenrode distinguished potential and actual support in times of stress. He related locus of control and social support and found that those with an internal health locus of control, while possessing the same number of supporters in their network, seemed more able to mobilise them at times of stress than those with a more external locus of control⁶⁴.

Social class differences in social networks have been reported. Blue collar workers have smaller networks overall than white collar but they have more frequent contact with those in the network⁶⁵.

Mitchell and Trickett⁶⁶ emphasised that different studies often examine different aspects of social networks ie:-

1. Structure
2. Characteristics of component linkages
3. Normative context of the relationship

Others have defined the networks on basis of structure, function and adequacy⁶⁷. Functional characteristics of social support networks which have been described are (a)emotional,(b) instrumental (c) information .

According to a review article by Orth-Gomer structural measures have been able to demonstrate changes in mortality,while functional measures have been less successful .As she points out, Bradburn suggested two separate entities, functional and structural measures because he found minimal correlation between quality of social support and quantity of social interaction.

The Social interaction schedule^{68 69} was developed by Orth-Gomer from work in Sweden on social support and mortality.It aims to examine social support both quantitatively and functionally .It consists of a series of questions about practical ,emotional and information support and attempts to assess the perceived adequacy of the present situation.It has not been used in the UK,but was chosen because it appeared to examine the aspects of social support thought relevant to this study .It was modified to include recent changes developed by Orth-Gomer.

(d) Political Efficacy and Self-esteem

Efficacy can be defined as a perception of how capable one is of performing a behaviour which will lead to a particular outcome.⁷⁰ It was a concept first developed by Bandura in his Social Learning Theory and is situation-specific. Research on self-efficacy in health has tended to concentrate on prevention, with work on smoking cessation, weight control, contraception, exercise and alcohol abuse.⁷¹

Political efficacy is a concept that is based on an individual's expectancy that they are capable of political action on a local scale. In this study the questions are based on those from other studies performed by members of the Housing Research Unit of Glasgow University.

Efficacy is related to self-esteem, a perception of the value of ourselves compared to other people. Self-esteem can also be related to certain situations eg our perceptions of our value in sport or more usually is a global estimate of our worth. Each person sees his value mirrored in the eyes of others.

Low-self esteem is associated with diseases such as depressive illness, anxiety states and psychosomatic disorders.⁷² Low self-esteem is a function of the gap between the level of aspiration and performance. William James put it into a formula⁷³:

$$\text{Self-esteem} = \frac{\text{successes}}{\text{pretensions}}$$

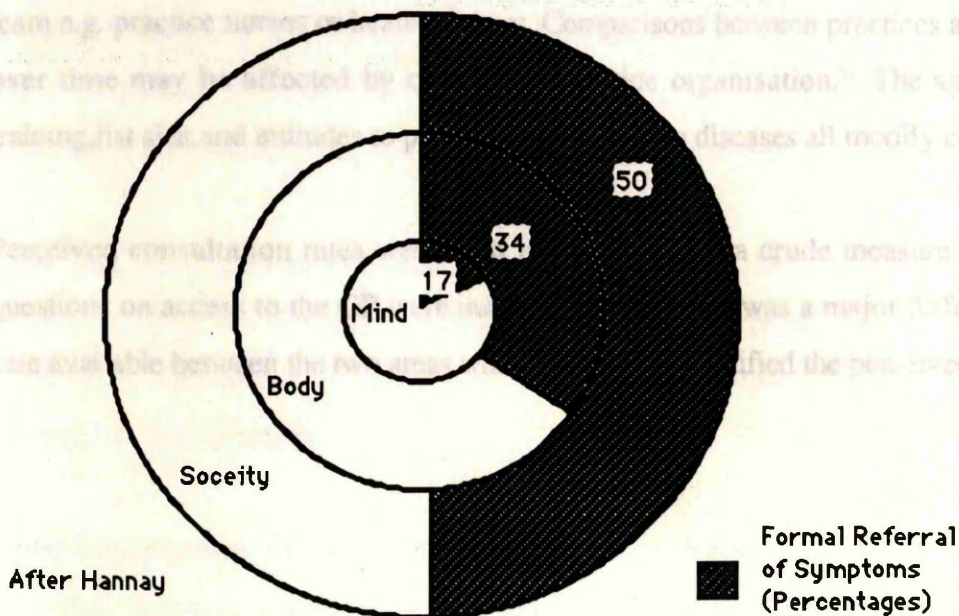
The development of self-esteem is derived from a comparison by the individual between him- or herself and other people.⁷⁴ Self-esteem is also affected by the experiences of success and failure in dealing with the physical world and with other people. It can be conferred on someone by others with signs of respect and approval.

Although not directly measured in this study, self-esteem in this population can be judged by the results on efficacy due to their close relationship.

(e) Causes and Behaviour

Hannay in his work on the formal referral of symptoms stated that "Illness behaviour can be viewed as a form of adaptation."⁷⁵ He found that patients were more likely to report a symptom to a formal agency if they believed its cause was founded in society (50% of symptoms) than if it was from their body (37%) or their mind (19%). This finding, he felt, showed that the Sick Role model of illness developed by Parsons⁷⁶ was an incomplete framework for illness behaviour. He develops the idea by stating that "The amount of formal referral is proportional to the distance from self".

Figure 16 : Hannays model of formal referral of symptoms



Hannay⁷⁵

"As mental symptoms are closer to the persons integrity than physical symptoms and both are obviously part of an individual than external circumstances in society. The extent to which people internalise or externalise their perceptions of reality is similar to the dichotomy between personal responsibility and social determinants of behaviour, between nature and nurture..."⁷⁵

The questions in this section were developed to ask about popular ideas of illness causation and to examine potential responses to these situations. The problems chosen are those most commonly reported in Hannay's study.

Work performed by Farrow on the appropriateness of the public's response to hypothetical medical problems showed that professional and public expectations do not always match⁷⁷.

Social class, sex and education were all significant factors in these help-seeking behaviours.

(f) Use of the General Practitioner

In order to have another measure of the health of this sample and to test the construct validity of the MOSI, it was decided to ask the women about recent and past use of both General Practitioner and hospital services. It should be noted that these are perceived use of services and no objective assessment of actual use was made.

Howie in a review in 1979 pointed out that recorded consultation rates depended on definitions and are influenced by: (a) the accuracy of recording visits and surgery appointments; (b) the inclusion or exclusion of child surveillance, ante-natal and immunisations; (c) the quantity of work performed by other members of the primary health care team e.g. practice nurses or health visitors. Comparisons between practices and within practices over time may be affected by changes in practice organisation.⁷⁸ The age, sex, postgraduate training, list size, and attitudes to prevention and chronic diseases all modify consultation rates.⁷⁹

Perceived consultation rates were used in this study as a crude measure of doctor use. The questions on access to the GP were included in case there was a major difference in the health care available between the two areas which could have modified the perceived consulting rates.

7.Method

Pilot of questionnaire

A draft questionnaire was tested on 20 women in a different area of Glasgow after which modifications in language were made and some questions were deleted . These answers were not included in the study.

Main study

The project aimed to include 200 women from each area in the study. Each interviewer was assigned 5 floors at random in each block and they were asked to visit each household on the floor .If no-one was home, they returned to make a total of three attempts at each household. If the women in the house were not available, they tried to make an appointment to return .

After they had visited every flat on each floor ,they were given more floors from a reserve list in another block. In this way , the survey started in two blocks and then moved onto extra blocks only after all the households in a block had been finished. Interviewers were paid a set amount for the completed interview.

At the doorstep they were instructed to say “Hello,my name is and I am conducting a survey on behalf of Glasgow University into the health of women who live in high-rise housing. I was wondering if I could ask you a few questions about your health.” All women living in the flat over 16 years old were included.

The subjects were asked the prepared questions in a set order. Many of the questions required a “yes”or “no” answer although some were more complicated with Likert type scales of ‘strongly agree’ to ‘strongly disagree’. During the interview , three self-completed questionnaires, the MOSI ,the HAD and the Locus of Control questionnaire, were used at predetermined points.

Interviewer training and supervision

Four interviewers were selected from students and graduates responding to an advertisement in the University. They were made familiar with the study design , had the questionnaire explained to them and went through a questionnaire with the principal researcher.

For the first few interviews they were supervised to make sure that they were asking questions in a consistent way. Then after 25%, 50% and 75% of their questionnaires were completed ,

the author went out on visits with them to check that their style had not altered substantially.

The questionnaire consisted of a total of 149 questions on :

- Demography
- Health Status -Medical Outcome Study Instrument (self-administered)
- Housing perceptions
- Hospital Anxiety Depression Questionnaire (self-administered)
- Use of medical services
- Locus of Control questionnaire(self-administered)
- Social Support
- Political efficacy and the co-operative
- Causes and Behaviour

The questionnaires were then returned to the principal researcher and the interviewers had no more part in the study.

The data was loaded onto an Excel spreadsheet on an Apple Macintosh personal computer by the principal researcher.

Statistical analysis

Advice was taken from Dr Harper Gilmore ,Medical Statistician, Community Medicine,Glasgow University .

The null hypothesis was rejected at $p < 0.05$.To save repetition in the paper any difference remarked upon is statistically significant at or below this level unless otherwise stated.

Continuous variables most of which were not distributed normally were analysed using a Mann-Whitney test or Kruskal-Wallis test.

Categorical variables were analysed at first by a X^2 test then further analysis was carried out by using indicative values with a multiple regression when it was required.

A Minitab Statistical software package⁸⁰ used on an Apple Macintosh Classic Personal Computer.

Statistical power of sample size

The minimum sample sizes were chosen on the basis of the published characteristics of the Medical Outcome Study Instrument (USA⁸¹ and UK studies⁸²) and after discussions with a statistician.

The minimum difference in health status detectable with a sample size of 200 in each area for the categories Mental Health and General Health Perceptions would be :

Mental health: 5.5%

General health perceptions: 7.5%

for a statistical significance of 0.05 and power of 0.80.

The sample size was limited by the constraints of time and funding.

8. Results

The age of the 372 women ranged from 17 to 81. The women surveyed in the Kennishead and Pollokshaws. Interviews were completed during June and July 1989.

Interview problems

A questionnaire was excluded if more than two questions were not answered. This occurred sometimes when the interviewer turned over two pages at once. A small number (3-5) of interviews started but were not finished because the subject could not complete the interview due to other factors e.g. return of family for their evening meal, being drunk. One interviewer did not complete her quota of interviews. Some of her quota of interviews were completed by one of the other interviewers, but a decision was made to conclude the interviewing phase at the start of the Glasgow Fair Holiday period.

17 interviews were done in the Mitchell Hill flats, the first comparison area which were discarded because of the problems of access discussed above.

No records were kept of actual refusals at the doorstep, but the interviewers reported anecdotally that only a small proportion in both areas refused.

Women who were single and redivorced had better scores on the mental health scale of the MOSI (medians 76 vs. 77) and less depression (5.9 vs. 7.7) and depression anxiety (3.2 vs. 4.9) on the HAD than married women. Divorced and widowed women had similar scores to married women.

Employment

36% of the women were working, mainly in unskilled jobs without any supervisory role. (see figure 18). 25 were self-employed and 4 were off employed. Working women had better scores on all the categories of the MOSI and were less anxious and depressed.

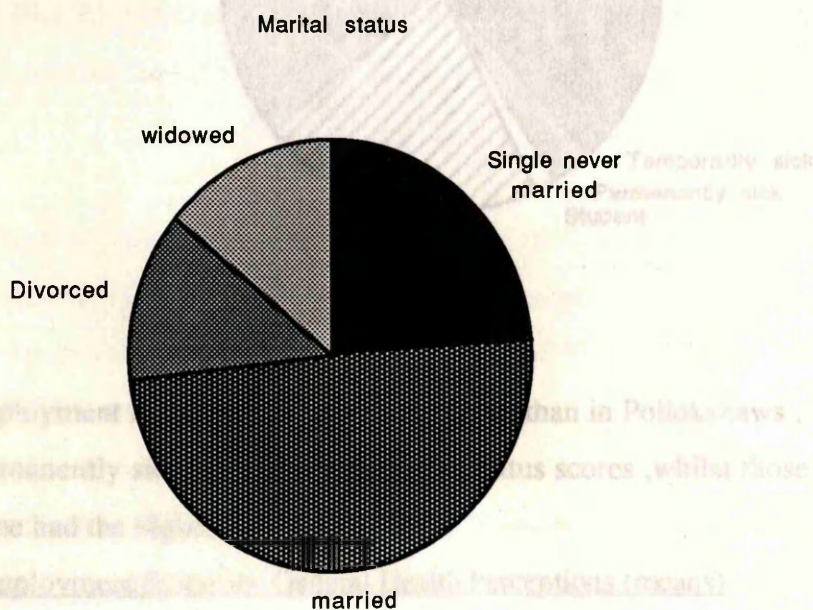
Demography

The age of the 372 women ranged from 17 to 81 . The women surveyed in the Kennishead co-operative were significantly younger (median age 31) than those in the comparison area, Pollokshaws (median age 45).

The majority of women were born in Scotland (81%). Only 4 women had been born outside the British Isles.

Half were married and a quarter were single having never married.(see Figure 17)

Marital Status (Figure 17)

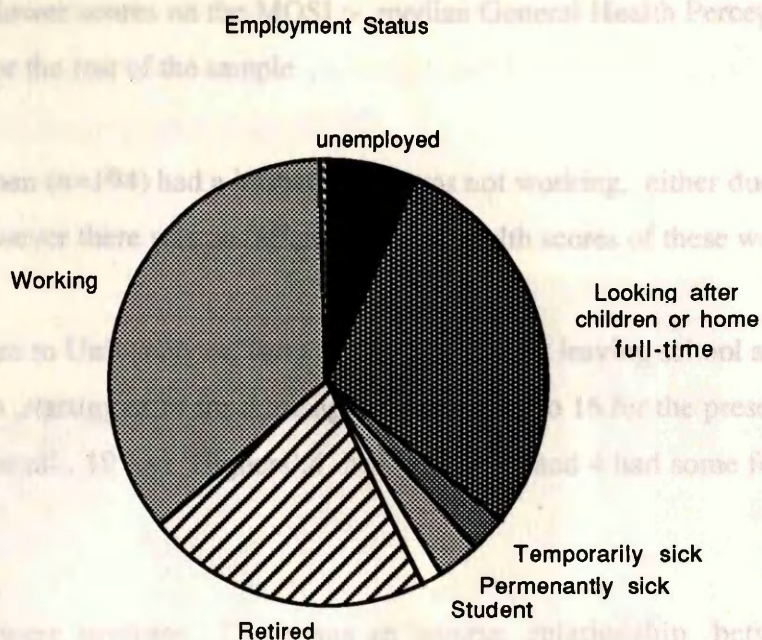


Women who were single and never married had better scores on the mental health scale of the MOSI (medians 76 vs. 72) and less anxiety (means 5.9 vs. 7.7) and depression (means 3.2 vs. 4.9) on the HAD than married women. Divorced and widowed women had similar scores to married women.

Employment

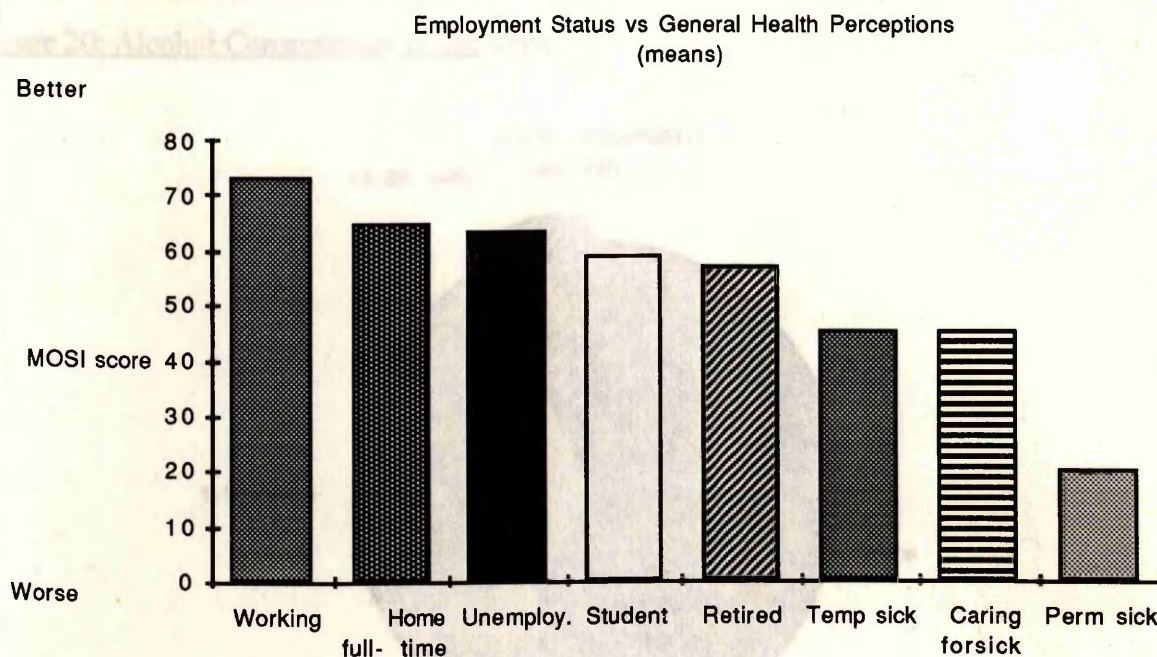
36% of the women were working, mostly in unskilled jobs without any supervisory role. (see figure 18). 25 were supervising others and 4 were self-employed. Working women had better scores on all the categories of the MOSI and were less anxious and depressed.

Figure 18 :Employment Status for both areas combined.



Female unemployment in the co-operative was higher than in Pollokshaws , 10% vs. 3% .Those who were permanently sick had the lowest health status scores ,whilst those who were working full or part-time had the highest.(see figure 19)

Figure 19 :Employment Status vs. General Health Perceptions (means)



More retired women lived in Pollokshaws ,making up 21% of the sample from there as opposed to 14% from the co-operative.
 In Kennishead more women had lost a job or been refused a job because of ill-health(12%)

than in Pollokshaws (8%). Those who had experienced employment problems due to illness in both areas had much lower scores on the MOSI :- median General Health Perceptions score of 33 compared to 73 for the rest of the sample .

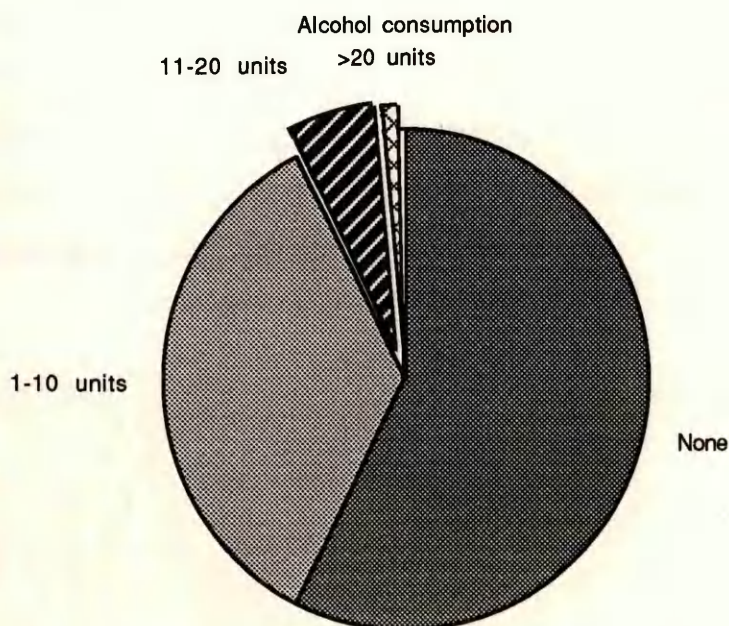
85 of the married women (n=194) had a husband who was not working, either due to retirement or unemployment. However there was no difference in the health scores of these women.

Only 3 women had been to University or Tertiary Education, most leaving school at the minimum leaving age of their era ,starting at 14 for those aged 60 and over to 16 for the present day . 65 % had no qualifications at all , 19 had 'Highers',4 had 'A levels' and 4 had some form of tertiary qualification .

53 % of the women were smokers . There was an inverse relationship between cigarette smoking and self-reported health especially in those smoking over 20 cigarettes a day .Their scores on the Mental health category had a median of 58 compared to non-smokers with 76. (p=0.02)

15 of the women (8%) drank more than 11 units of alcohol in the previous week (see figure 20) but although their mental health scores were lower than those drinking nought to ten units a week ,it did not reach statistical significance.

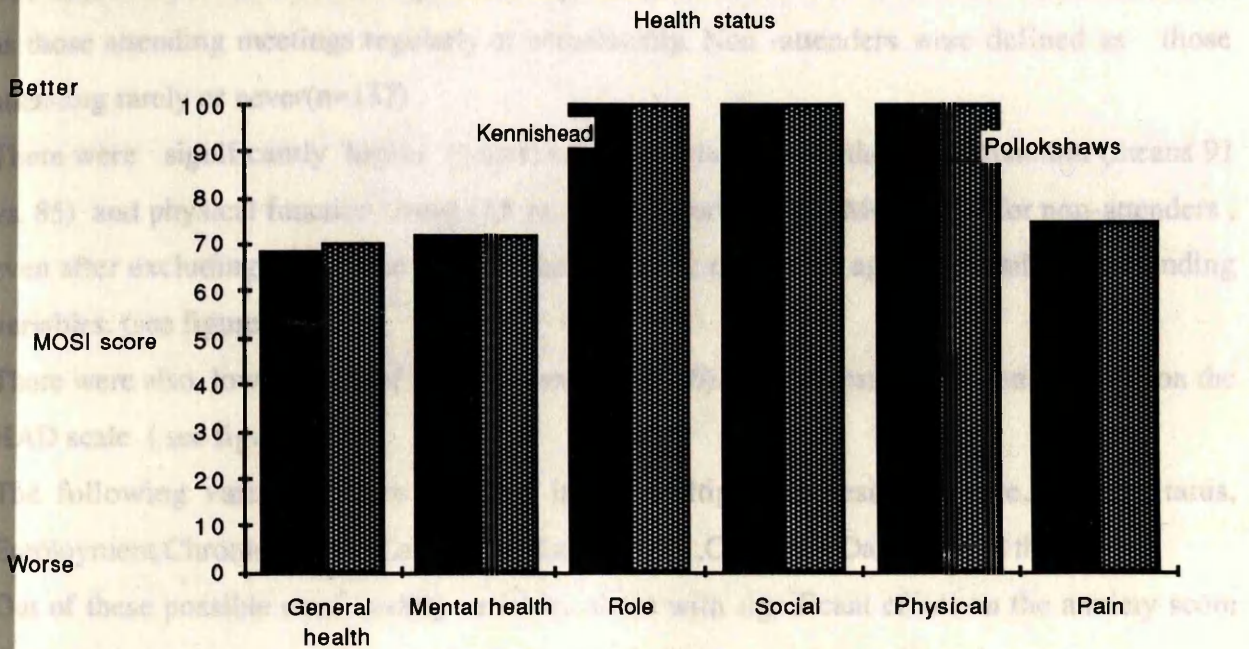
Figure 20: Alcohol Consumption in last week



Comparison of the two areas:health

There was no difference in the median and mean health status scores and the anxiety and depression scores between the Kennishead co-operative and Pollokshaws. (see figure 21)

Figure 21:Median Health Status scores on the MOSI



Rates of GP consultation, hospital admission and casualty admission were similar in the two areas.

Chronic disease was reported by 45% of women in Kennishead and 50% in Pollokshaws. (n/s).

Table 6: Differences between attenders and non-attenders

	Attenders	Non-attenders
Age	51	58
Divorced	21%	13%
Widowed	17%	11%
Working	49%	49%
Time in Flats	7 years	4 years

Attendance and involvement in the co-operative and health

Within the co-operative only 52 out of 189 women surveyed attended co-operative meetings regularly or occasionally .(see Figure 22)

The health of attenders of meetings was compared to non-attenders. Attenders (n=52) were defined as those attending meetings regularly or occasionally. Non -attenders were defined as those attending rarely or never(n=137) .

There were significantly higher (better) scores for attenders on the social function (means 91 vs. 85) and physical function (means 85 vs. 81) categories of the MOSI than for non-attenders , even after excluding committee members and multiple regression against possible confounding variables. (see figure 23).

There were also lower levels of anxiety (median 8 vs. 6) and depression(median 4 vs. 3) on the HAD scale (see figure 24).

The following variables were included in the multiple regression : Age,Marital Status, Employment,Chronic disease,Loss of job due to health ,Children , Dampness in the flat .

Out of these possible confounding variables, those with significant effect on the anxiety score were attendance at meetings , employment, chronic illness and damp affected rooms.

Mental health scores (MOSI) were higher in attenders vs. non-attenders (medians 76 vs. 70, Mann-Whitney, $p=0.05$) but this difference was no longer statistically significant when the multiple regression analysis was performed.

Attenders were older than non-attenders ,were more likely to be divorced or widowed and to be working . They had lived in their flats for slightly longer than non-attenders .(see table 6).There was no difference in education, smoking, alcohol, employment level, husbands employment, number of children, number and frequency of social supports.

Table 6 : Differences between attenders and non-attenders

	<u>Attenders</u>	<u>Non-attenders</u>
Age	44	38
Divorced	21%	12%
Widowed	17%	10%
Working	48%	40%
Time in Flats	5 years	4 years

Figure 22: Attendance at co-operative

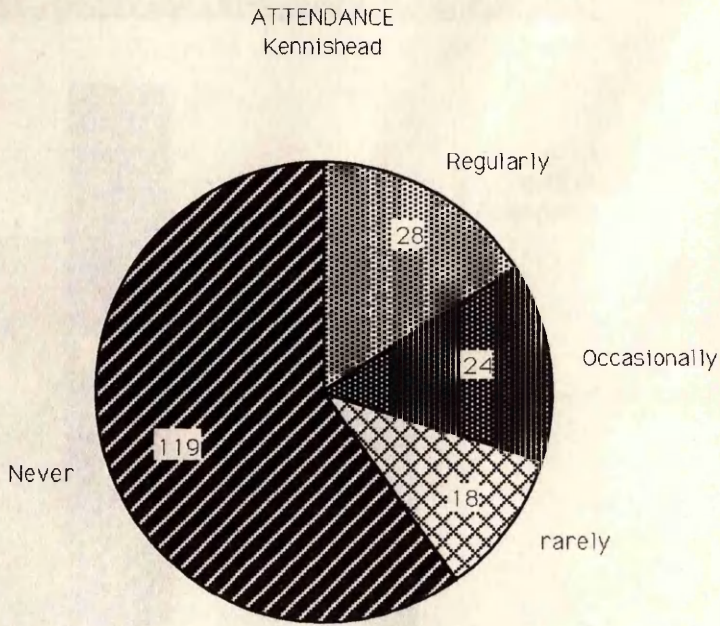


Figure 23 :Attendance vs. Social and Physical Function(NB means) .Co-operative only

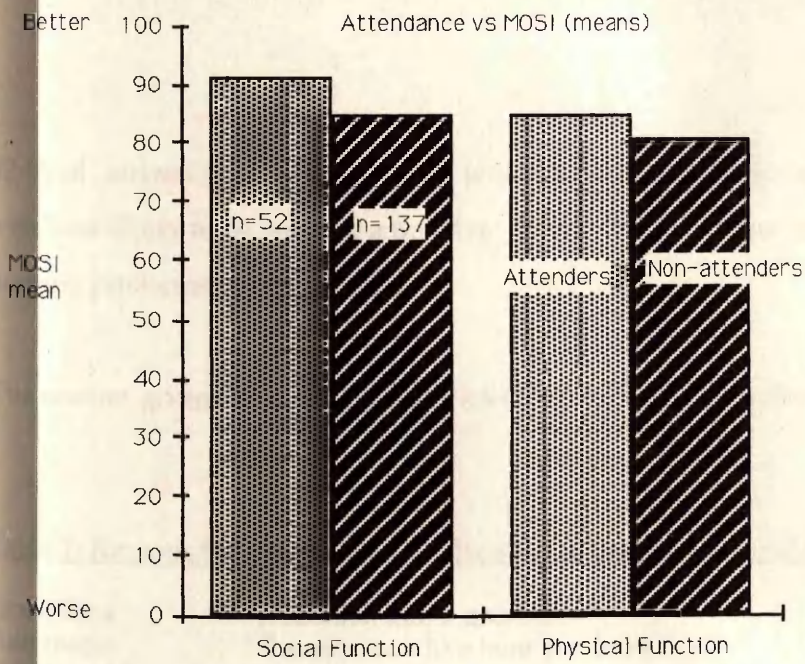
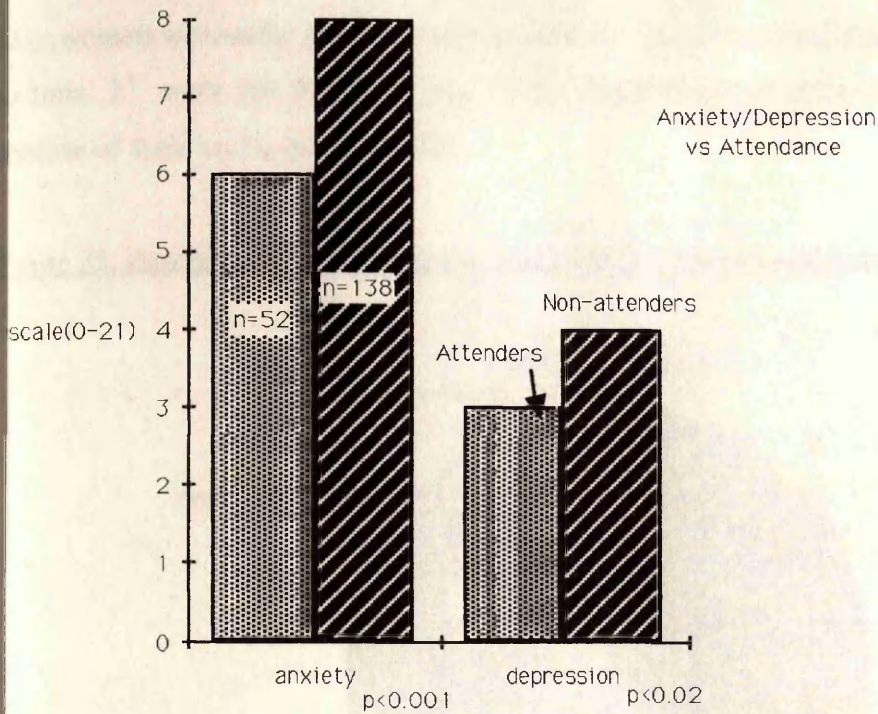


Figure 24: Attendance vs. Anxiety and Depression (Co-operative only)



42 % of attenders were very happy with their housing compared to 16% of non-attenders and were less likely to be seeking a transfer. Attenders had similar perceptions and experience of the housing problems in Kennishead.

The reasons given for attendance and involvement were classified . (see table 7)

Table 7: Reasons for attendance /involvement in co-operative and examples

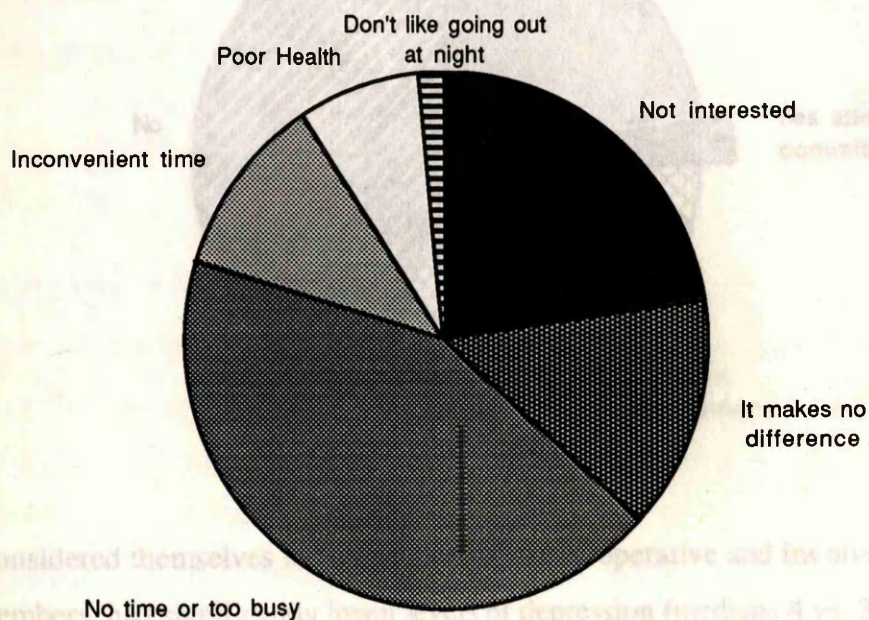
Reason	Example	Number
Good Idea :	“It seemed like a good idea”	13
Automatic:	“Because you live here you have to join”	13
Positive action:	“To do something to improve the flats”	9
Interest:	“To find out more about what’s going on”	4
Problems:	“Because of all the problems here”	1
Boredom:	“Something to do”	1

Those non-attenders who gave reasons for being members of the co-operative mostly gave the ‘automatic’ response of “because you had to to be able to live here”.

Attendees felt that had more political efficacy. 23 % of the attendees felt that they would have a good chance of changing the council's mind if the council was to do something which might affect the health of themselves or their family compared to 7% of non-attendees.

52 women who were non-attendees or were not involved stated that they were too busy or had no time. 27 were not interested and 17 felt that it made no difference. Nine could not attend because of their health. (see figure 25)

Figure 25: Reasons for not attending or being involved in co-operative.

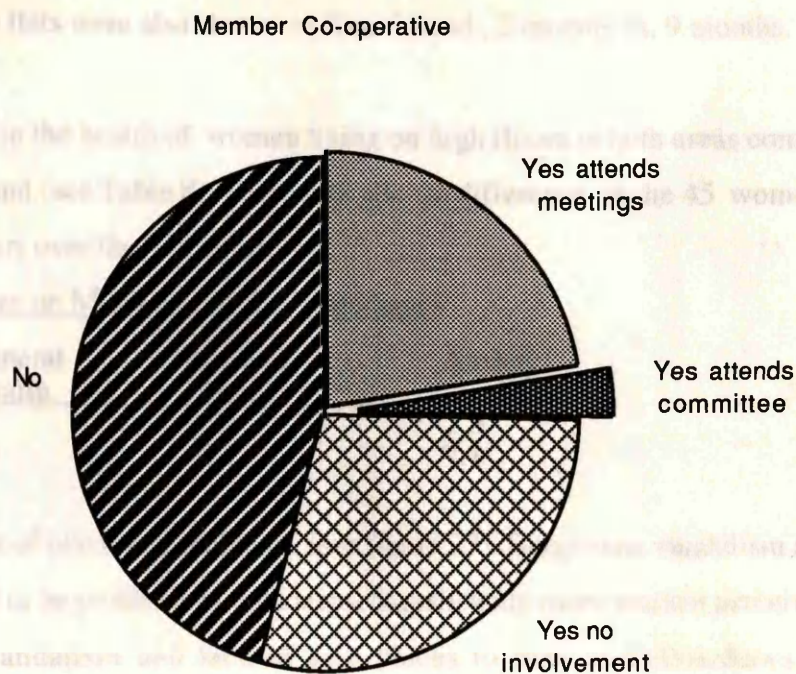


There was no difference in the MOSI or anxiety-depression scores in Pollokshaws in those attending or being involved in the Pollokshaws tenant association.

Involvement in the co-operative and health

6 of the women interviewed were committee members and 42 described themselves as members of the co-operative who were attended meetings. (see figure 26).

Figure 26: Membership and involvement in the co-operative (Figure 26)



Those who considered themselves to be members of the co-operative and involved in it , but not committee members ,had significantly lower levels of depression (medians 4 vs. 3), after multiple regression . On univariate analysis , involved members appeared to have lower levels of anxiety (median 8 vs. 5, Mann -Whitney test $p=0.05$) , but on multiple regression the difference became non-significant.

Housing Problems

Those living in the Kennishead co-operative had been living there for a shorter time than those in Pollokshaws, with medians of 4.5 years vs. 17 years. ($p=0.0001$, median difference 3.5 years, 95% c.i. 2-6). Sixty-four (34%) women had lived in Kennishead for 2 years or less.

Waiting times for entry to flats were also shorter in Kennishead, 2 months vs. 9 months.

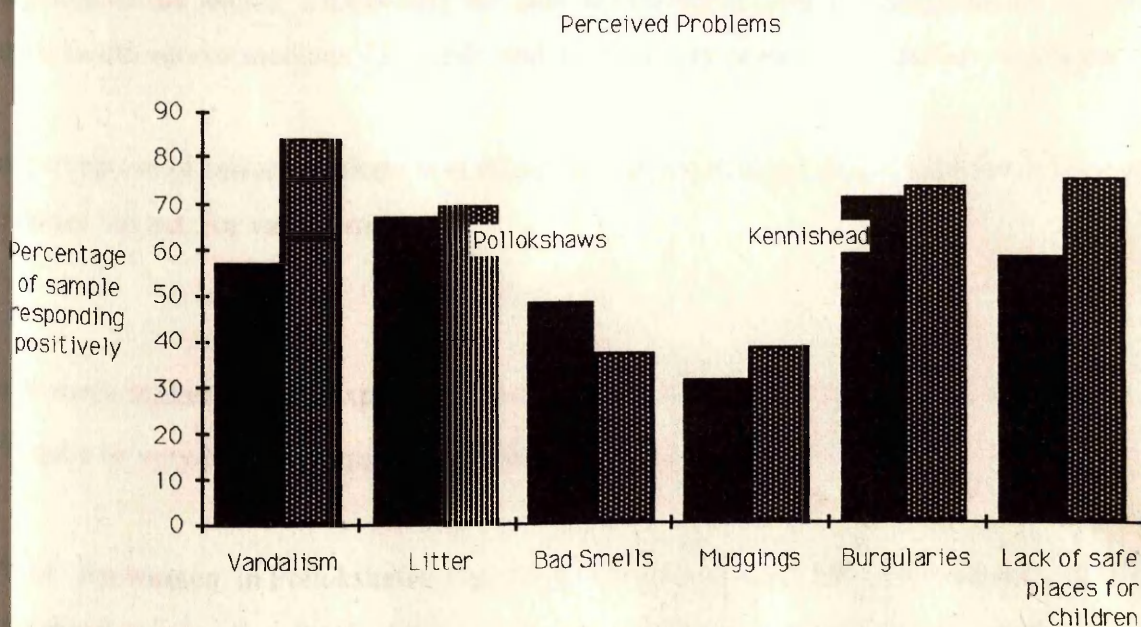
No difference was found in the health of women living on high floors in both areas compared to those living near the ground. (see Table 8). There was also no difference in the 45 women living with children under 5 years over the fifth floor.

Table 8: Floor and scores on MOSI and HAD (medians)

Floor	General Health	Mental Health	Anxiety
1-5	63	72	7.5
6+	70	72	7.1

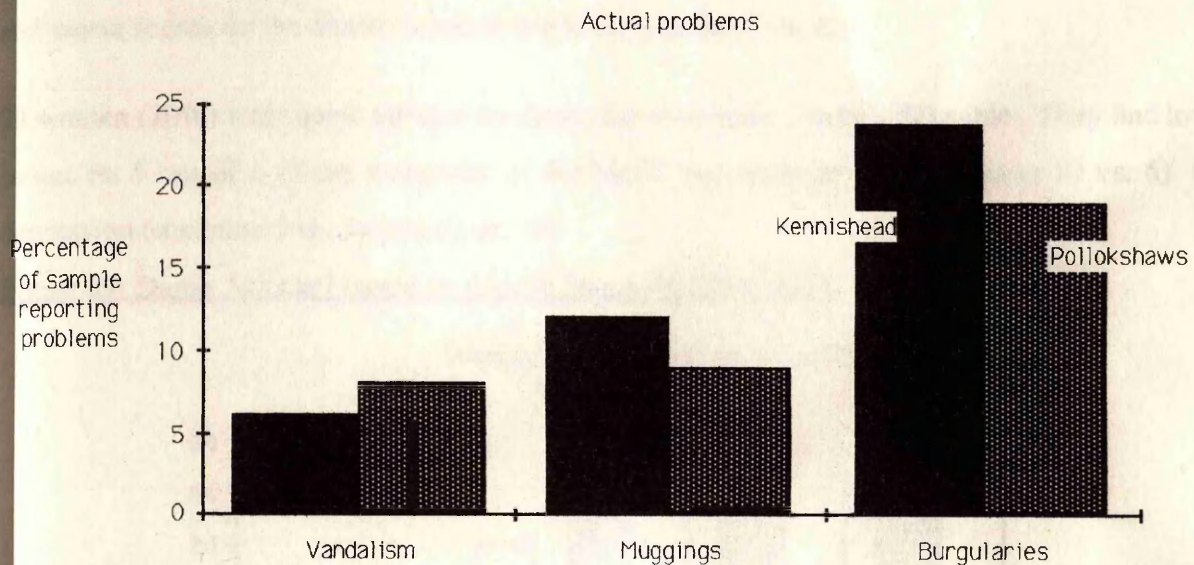
Both areas had high levels of perceived problems. (see figure 27). Burglaries, vandalism and litter were frequently perceived to be problems in both areas. Significantly more women perceived there to be problems with vandalism and lack of safe places to play in Pollokshaws than in Kennishead, but a perceived problem with bad smells was commoner in the co-operative. The number of perceived problems did not relate to the scores on the MOSI or HAD.

Figure 27 Perceived housing problems. Kennishead and Pollokshaws



There was a high level of actual crime in Kennishead with 45 women (24%) being burgled at some time in their time in Kennishead as opposed to 36 in Pollokshaws (see Figure 28).

Figure 28: Actual Problems in the co-operative



Those who had been assaulted or experienced vandalism had very significantly lower scores on all categories of the MOSI, especially the General Health Perceptions (medians 48 vs. 70) and Mental health scores (medians 72 vs. 64) and worse scores on the HAD, (anxiety: medians 10 vs. 6).

The perception of crime problems was related to the actual crime experience for muggings and burglaries but not for vandalism.

There was a higher level of expressed satisfaction with their housing in the co-operative with 73% quite or very happy compared with 68% in Pollokshaws ($\chi^2, p=0.1$).

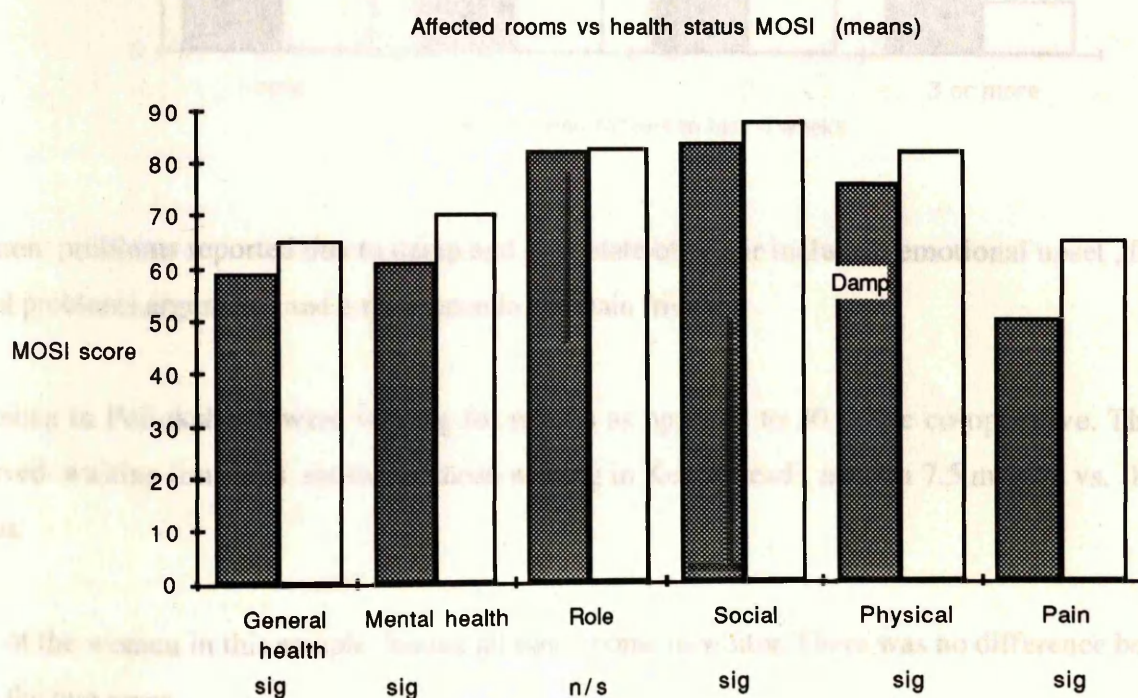
49% of the women in Pollokshaws were on the housing transfer list compared with 30% in the Kennishead co-operative. 38% of those seeking a transfer had medical priority points.

Damp, mould and a poor state of repair

Damp, mould or a poor state of repair were reported as making a room in the flat unusable by a total of 18 women from both areas (5% of total sample). Both areas of flats were equally afflicted. Women with unusable rooms had significantly poorer health on the general health perceptions (medians 53 vs. 70) and physical function (medians 75 vs. 100) scales of the MOSI and worse scores on the anxiety scale of the HAD (median 9 vs. 6).

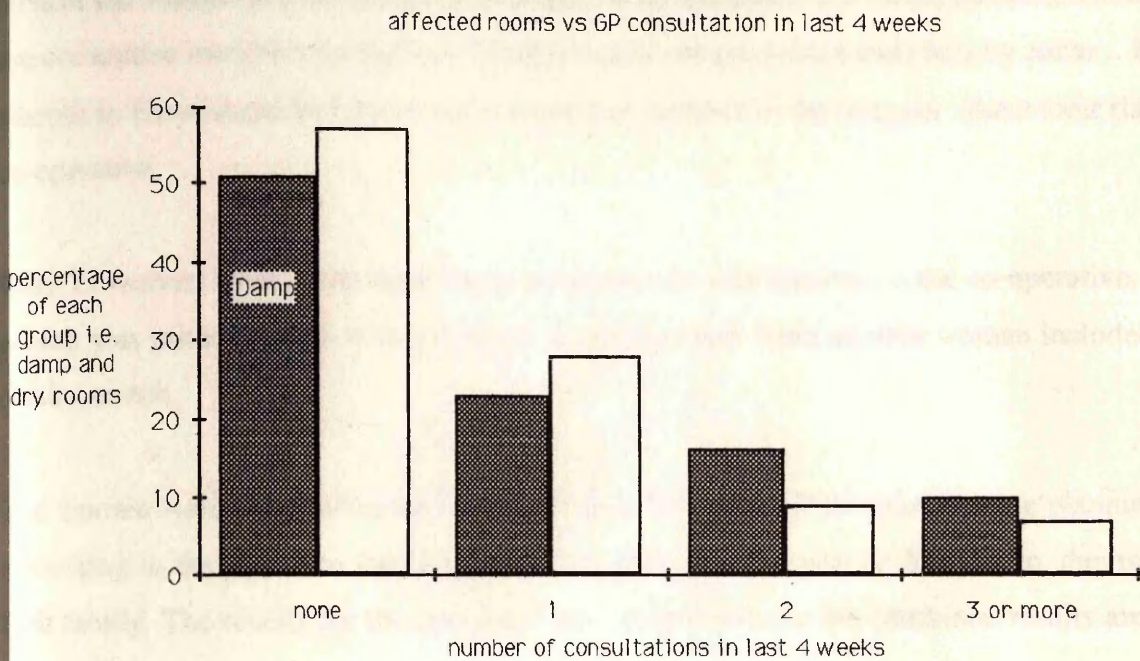
73 women (20%) had rooms affected by damp, but the rooms were still usable. They had lower scores on 5 out of 6 of the categories of the MOSI and more anxiety (medians 10 vs. 6) and depression (medians 5 vs. 3). (see figure 29)

Figure 29: Damp Affected rooms vs. Health Status (MOSI means)



They were more likely to have visited their GP in the last 4 weeks and in the last year, but there was no difference in hospital admissions, casualty use or reporting of chronic disease. (see Figure 30)

Figure 30 :Damp affected rooms vs. Number of GP consultations in last 4 weeks



Common problems reported due to damp and poor state of repair included emotional upset , financial problems,arguments and a reluctance to entertain friends.

65 women in Pollokshaws were waiting for repairs as opposed to 30 in the co-operative. The perceived waiting time was shorter in those waiting in Kennishead , median 7.5 months vs. 12 months.

62 % of the women in this sample heated all their rooms in winter. There was no difference between the two areas.

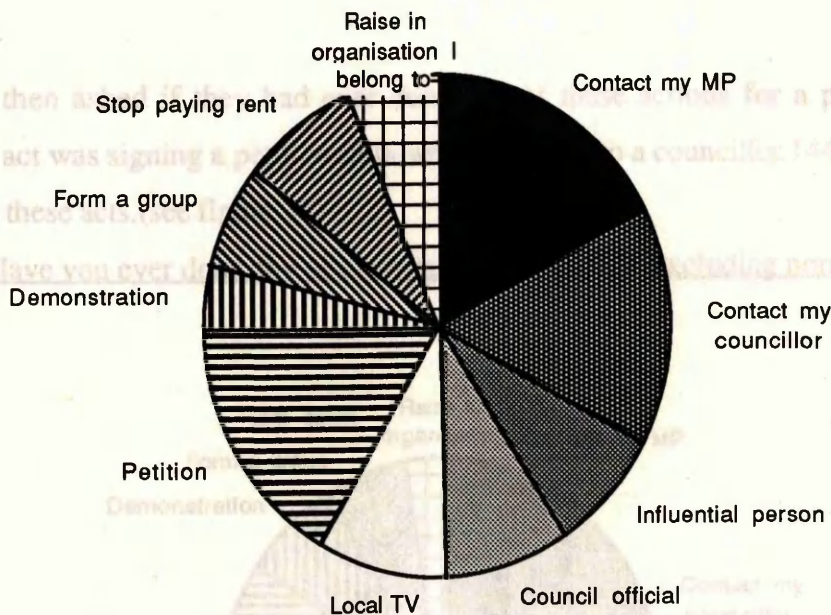
Political Efficacy and knowledge about the co-operative

97% of the women in Kennishead knew about the co-operative's existence and 83% knew one of the committee members by sight .71% knew one of the committee members by name . Half the women in Kennishead had spoken to a committee member in the last year about their flat or the co-operative.

Only 11 women lived in the same flat as someone who was involved in the co-operative. As this person was not identified ,it was difficult to assess if they were another woman included in the survey or not.

The women were asked what they would be their first action if the council were planning to do something to the area or to their flat which they thought was unfair or harmful to themselves or their family. The results for the two areas were very similar,so the combined results are shown below.(see figure31)

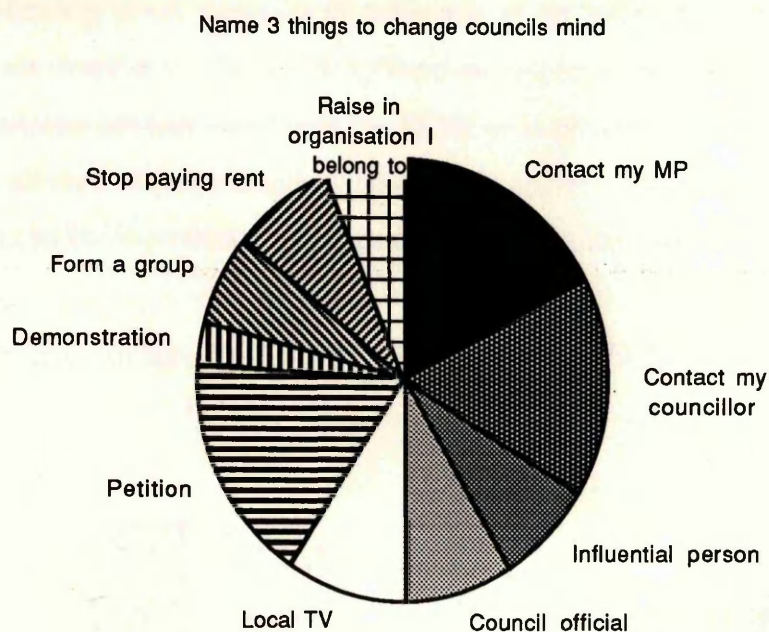
Figure 31 .Now imagine that the council were planning to do something which you felt was really unfair or harmful to you and your family in this flat.what would you do about it?



Women in Kennishead believed that they would have a better chance of making the council change its mind (χ^2 ,p,0.01)than those in Pollockshaws. 12% of women in Kennishead thought they

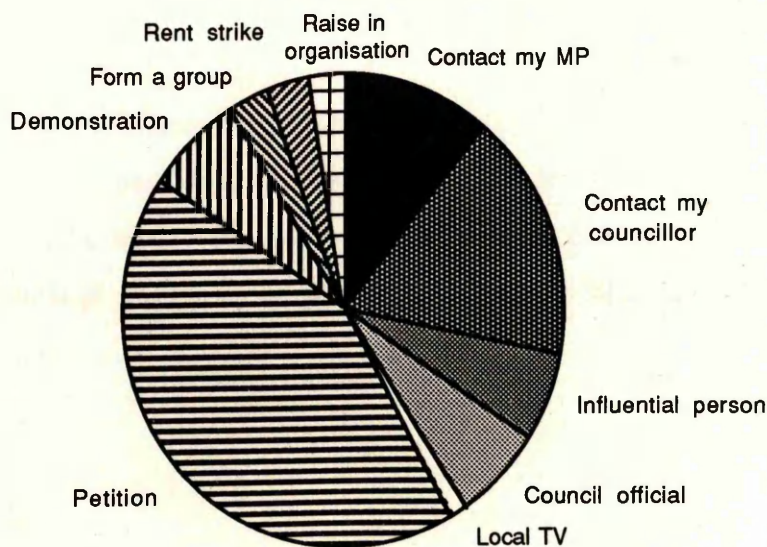
When asked to name what would be most effective to do to if the council was proposing to do something which would affect their health or their family's health, the three commonest responses were: "contact my MP", "sign a petition" and "contact my councillor". (see figure 32)

Figure 32 "What would be the three most effective things to change the councils mind?"



They were then asked if they had ever done any of these actions for a political cause. The commonest act was signing a petition, followed by talking to a councillor. 144 women had never done any of these acts. (see figure 33)

Figure 33 .Have you ever done any of these things in you life? (excluding none of these)



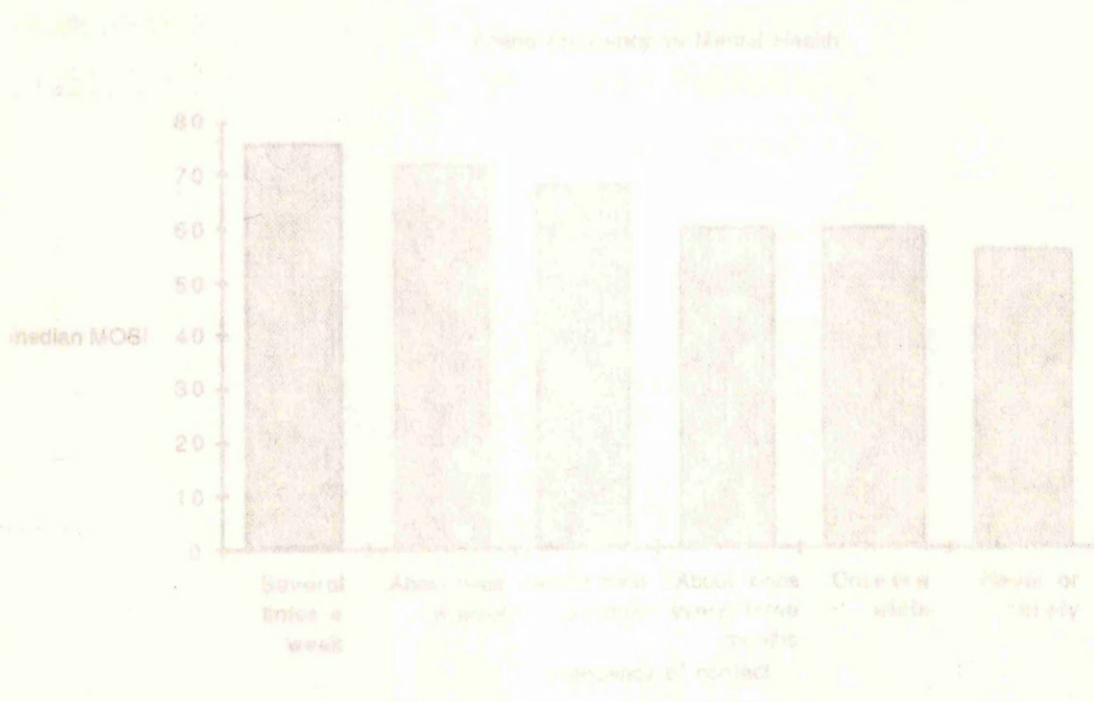
Women in Kennishead believed that they would have a better chance of making the council change its mind (χ^2 , $p=0.01$) than those in Pollokshaws; 12% of women in Kennishead thought they

would have a good chance compared to 7% in Pollokshaws and 40% of those from the co-operative thought that they would have no chance compared to 54% in Pollokshaws.

no difference between attenders and non-attenders in the co-operative.

When the results for the two areas were combined, women who had one or fewer close friends had very significantly lower scores on all categories of the MOSI, especially the general health perceptions scale (medians = 50 vs 73). However the actual length of time since they last saw this close friend was not correlated with the MOSI or HAD scores. But women who perceived that they saw all their friends frequently, had higher scores on the mental health, role, physical function and social function scales (see figure 34). 23 women saw no friends at all and 33 had no close friend.

Figure 34: Frequency of seeing friends vs Mental health(MOSI)



Seeing brothers and sisters frequently, especially grown-up children were associated with better general health perceptions, role, social function and physical function scores.

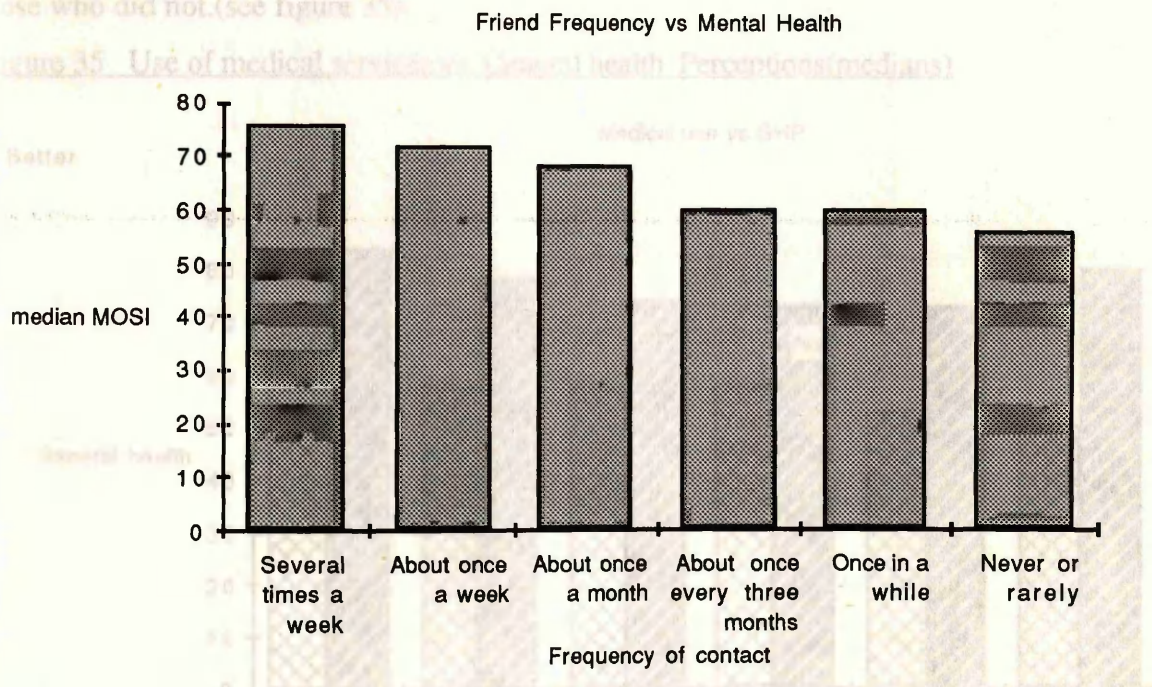
Contact with parents and contacts - either passing or substantive did not affect the health status at all. 40% of women in the group received help from their neighbours and 27% never talked in passing.

Social networks

There was no difference between the two areas in the social support questions and no difference between attenders and non-attenders in the co-operative.

When the results for the two areas were combined, women who had one or fewer close friends had very significantly lower scores on all categories of the MOSI, especially the general health perceptions scale (medians 50 vs. 73). However the actual length of time since they last saw this close friend was not correlated with the MOSI or HAD scores. But women who perceived that they saw all their friends frequently, had higher scores on the mental health, role, physical function and social function scales. (see figure 34). 23 women saw no friends at all and 33 had no close friend.

Figure 34: Frequency of seeing any friend vs. Mental health(MOSI)



Seeing brothers and sisters frequently and having grown-up children were associated with better general health perceptions, role function, social function and physical function scores.

Contact with parents and contact with neighbours either passing or substantive did not affect the health status at all. 40% of women never gave or received help from their neighbours and 27% never talked in passing.

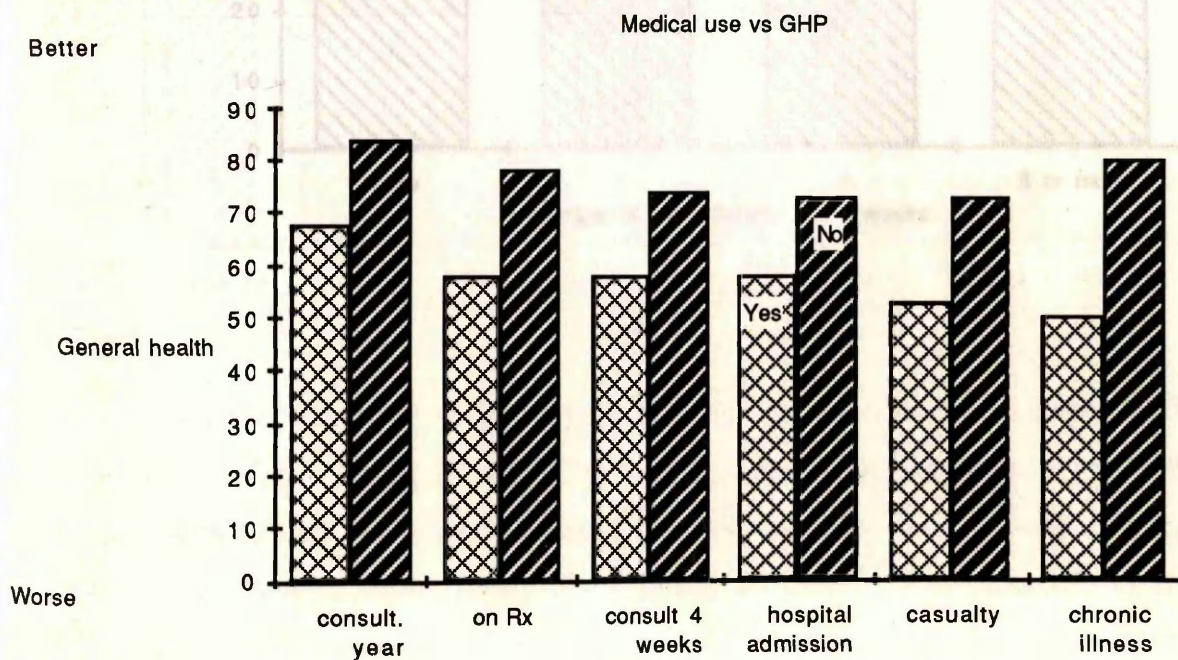
Medical use

Only 30 women (8%) had not visited their GP in the last year. The mean number of consultations in the last year was 4 with a range of nought to 20. 44% had seen their GP in the last 4 weeks.

Most people walked to the GPs surgery, taking six to fifteen minutes to get there. 29% felt that they could be seen the same day by their GP for a routine problem but 12% thought that they would have to wait for over three days.

A quarter of the sample had been admitted to hospital in the last year and 12% had visited casualty. 53% of the women were on medication (including the contraceptive pill) at the time of the study whilst 48% admitted to a long-term medical problem or chronic disease. Those with perceived chronic illness or who had used the GP or hospital services had lower scores on the MOSI than those who did not. (see figure 35).

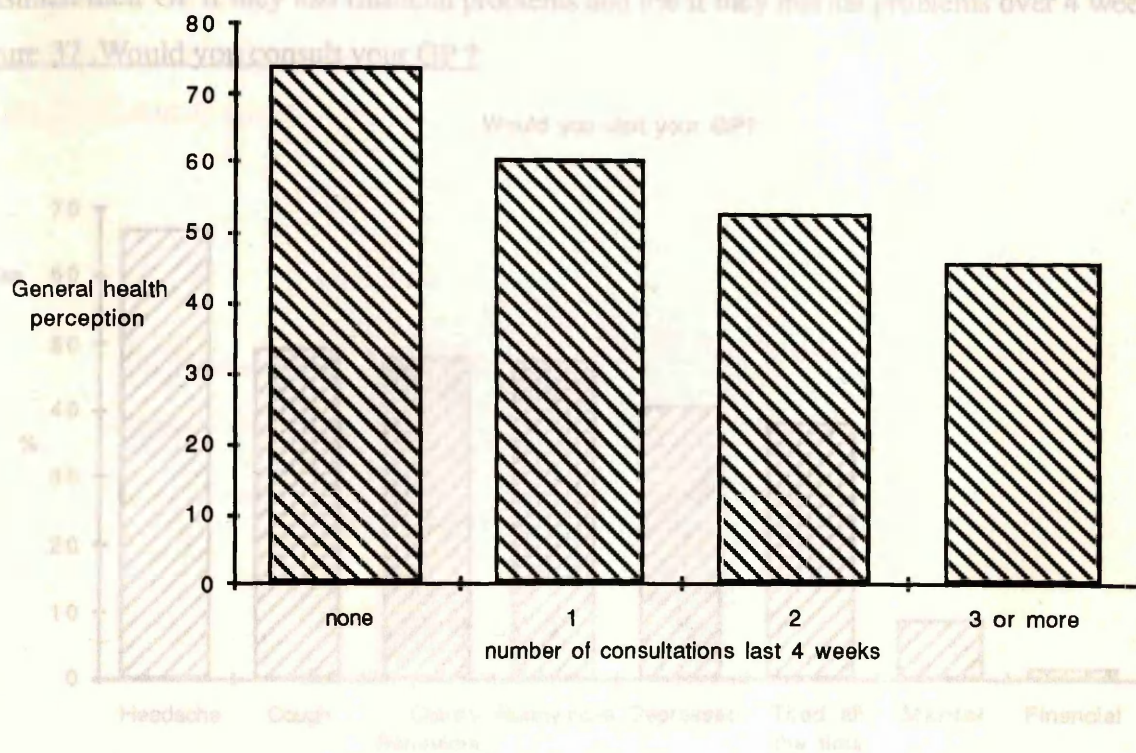
Figure 35 Use of medical services vs. General health Perceptions (medians)



potential behaviour

Women were asked if they would consult their General Practitioner for a number of common health problems. The frequency of visiting the GP in the last 4 weeks was inversely related to the general health perceptions score (see figure 36) followed by a two week old cough, a child's behaviour at

Figure 36 :Number of consultations in the last 4 weeks vs. General health perceptions (medians)



A combined score of "likelihood to visit" was calculated. The women were categorized as "likely to visit" and 56 were "less likely to visit" their General Practitioner. There was no distinct pattern in the MOSI scores of those who were "more likely to visit" compared to "less likely to visit". Those with the highest scores on the General Health Perception, Social Function and Pain categories were more likely to visit their GP. Those with worst health on the Mental health and Social function scales were less likely to visit their GP. Anxious women as detected by the HADS were also less likely to visit the GP:

60% of the "less likely to visit" group had not been to the GP at the last 4 weeks compared to 43% of the "more likely" group and 41% of the more likely to visit group had been to their GP seven times or more in the last year compared to 32% of the less-likely group.

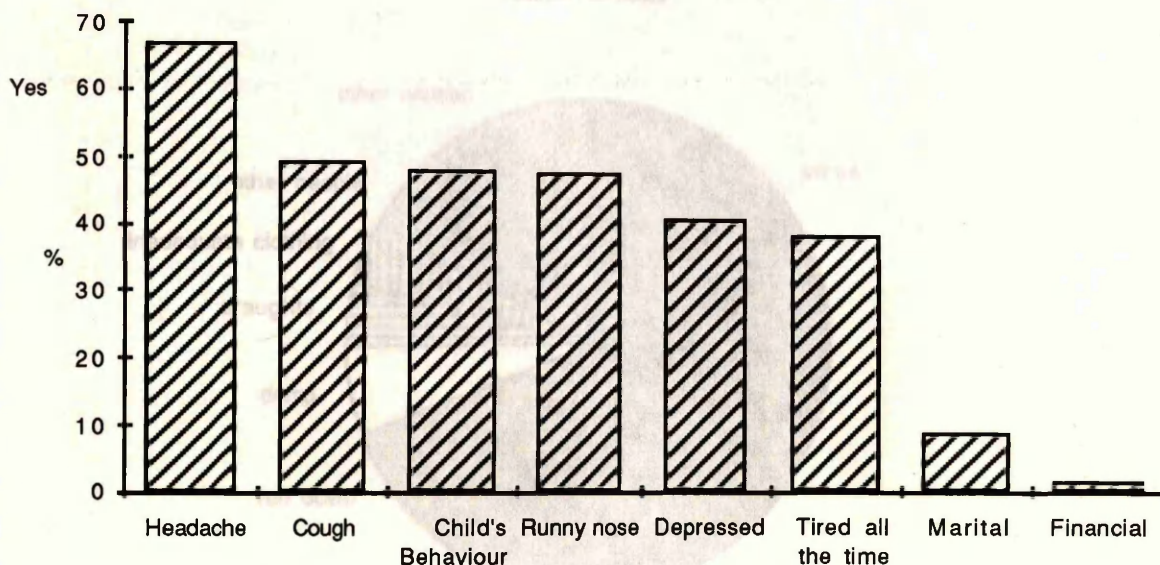
The "likelihood to visit" did not appear to be related to the frequency or quantity of social support.

Potential behaviour

Women were asked if they would consult their General Practitioner for a number of common clinical and social problems.(see figure 37) The condition most likely to lead to a consultation was a headache for two weeks (68%) followed by a two week old cough , a childs' behaviour at school over 4 weeks and a runny nose for four weeks (all 48%). Only 6 women would have consulted their GP if they had financial problems and 8% if they marital problems over 4 weeks.

Figure 37 .Would you consult your GP ?

Would you visit your GP?



A combined score of "likelihood to visit" was created. 106 women were "more likely to visit" and 266 were "less likely to visit" their General Practitioner .There was no distinct pattern to the MOSI scores of those who were "more likely to visit " compared to "less likely to visit" . Those with low scores on the General Health Perceptions,Physical Function and Pain categories were more likely to visit their GP. Those with worse health on the Mental health and Social function scales were less likely to visit their GP . Anxious women as detected by the HAD were also less likely to visit the GP.

60% of the "less likely to visit" group had not been to the GP in the last 4 weeks compared to 45% of the "more likely" group and 41% of the more likely to visit group had been to their GP seven times or more in the last year compared to 32% of the less-likely group.

The "likelihood to visit did not appear to be related to the frequency or quantity of social support .

Causes of common illnesses and problems

The responses to the questions on the causes of common illnesses were grouped. The commonest responses are shown on Figures 38 to 46 .

The likelihood to visit was related to the answers to the cause question for headache. Of those who believed that headaches were caused by stress ,77 % said they would visit their GP if they had a headache for longer than 2 weeks. 93% of those who blamed children and 62% of those who said that poor health caused headaches would visit their GP.

Figure 38 :Cause of a cold.

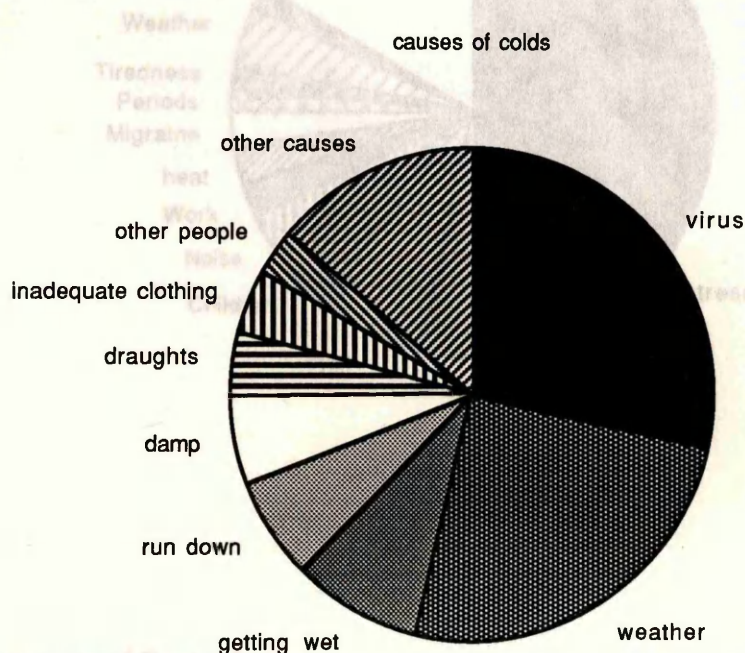


Figure 39 :causes of tired all the time

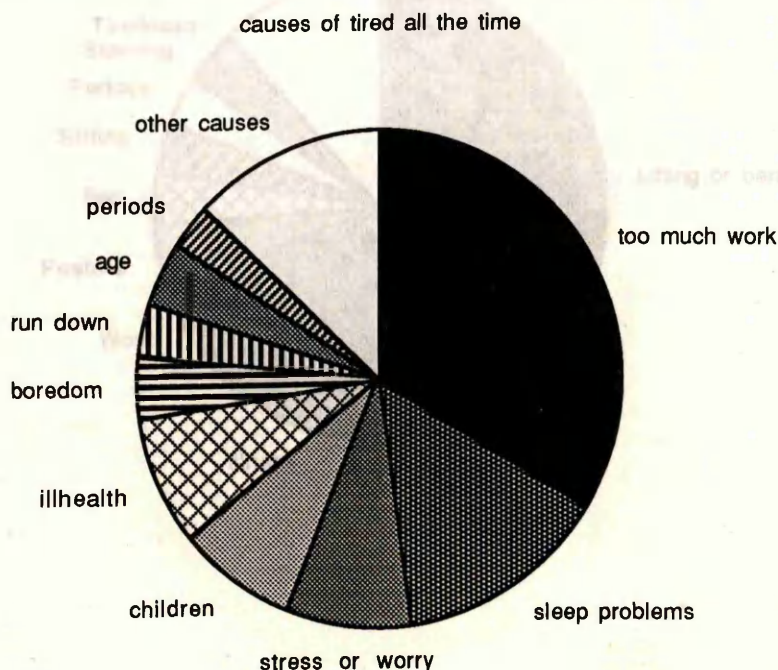


Figure 40: Causes of headache

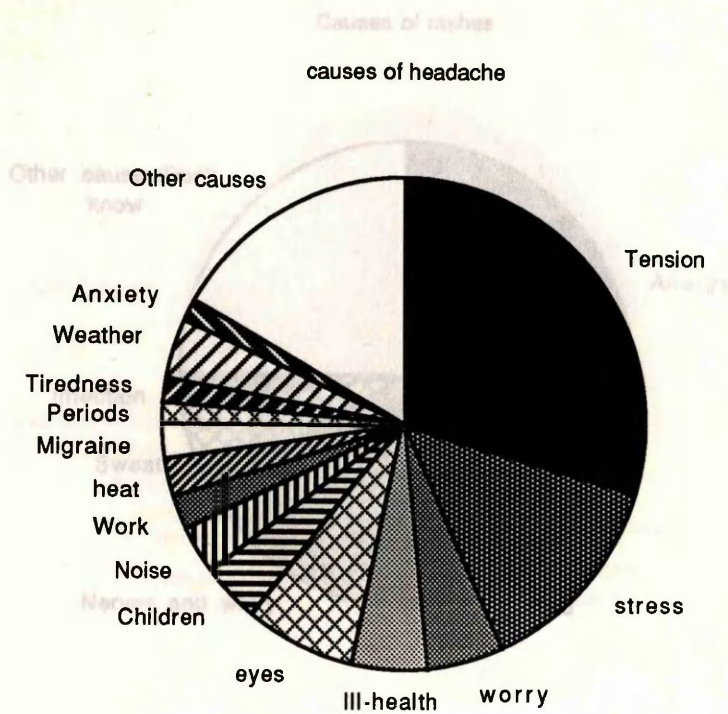


Figure 41 : causes of Backache

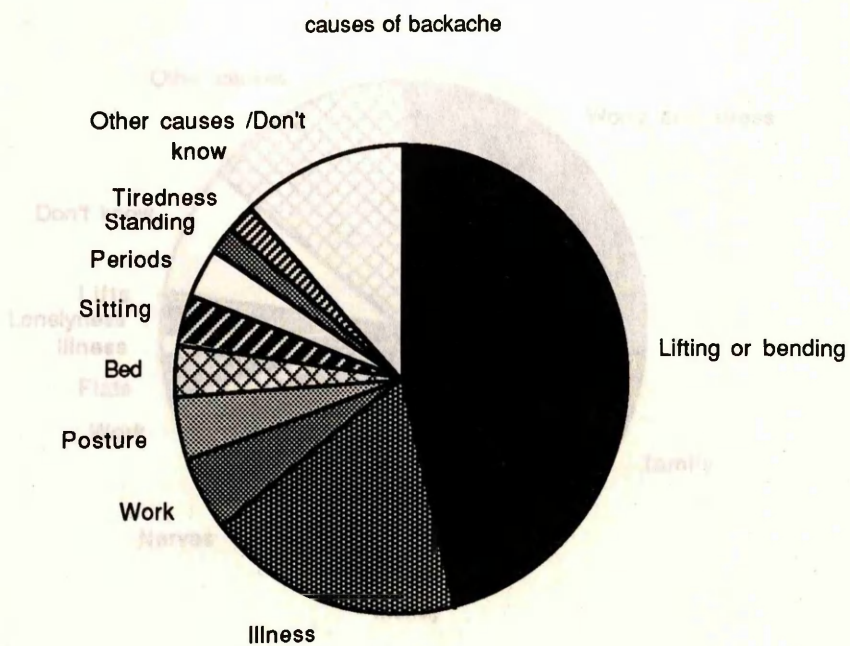


Figure 44: Causes of depression

Figure 42 : Causes of rashes

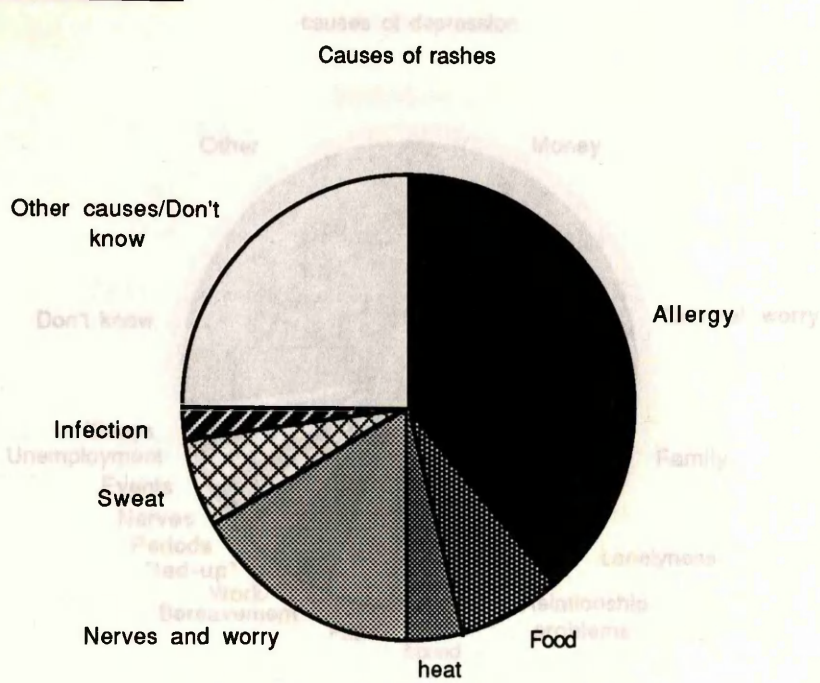


Figure 43: Causes of anxiety

Figure 43: Causes of anxiety

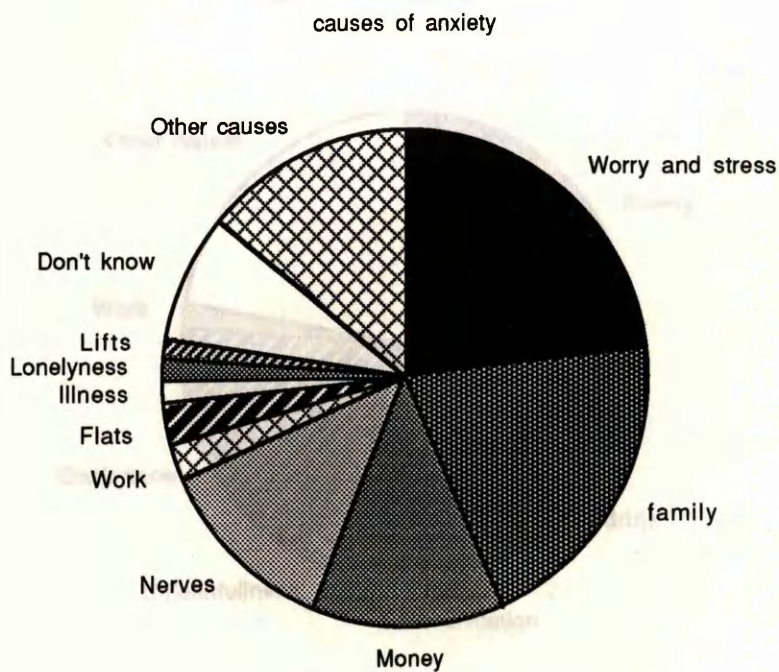


Figure 44: Causes of depression

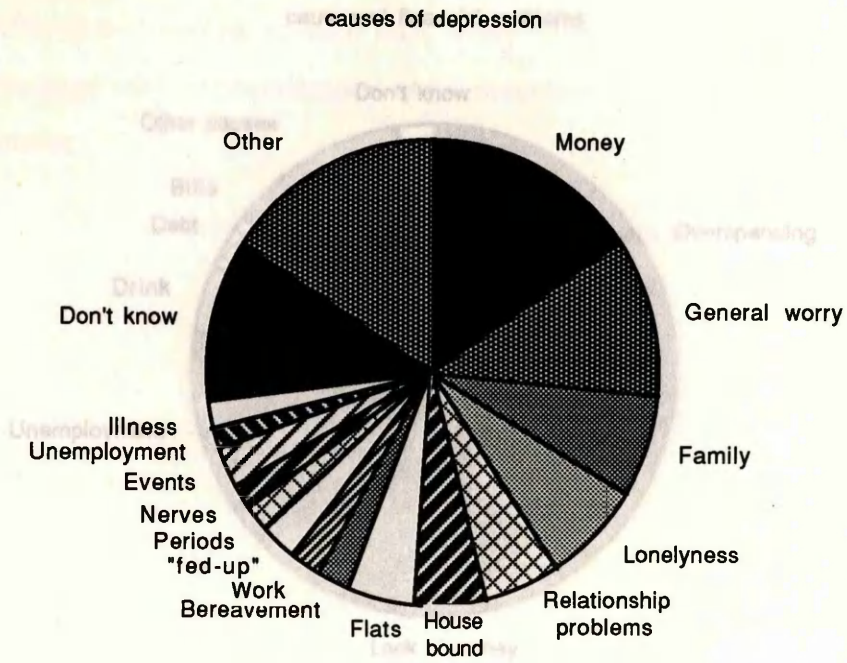


Figure 45: causes of marriage problems

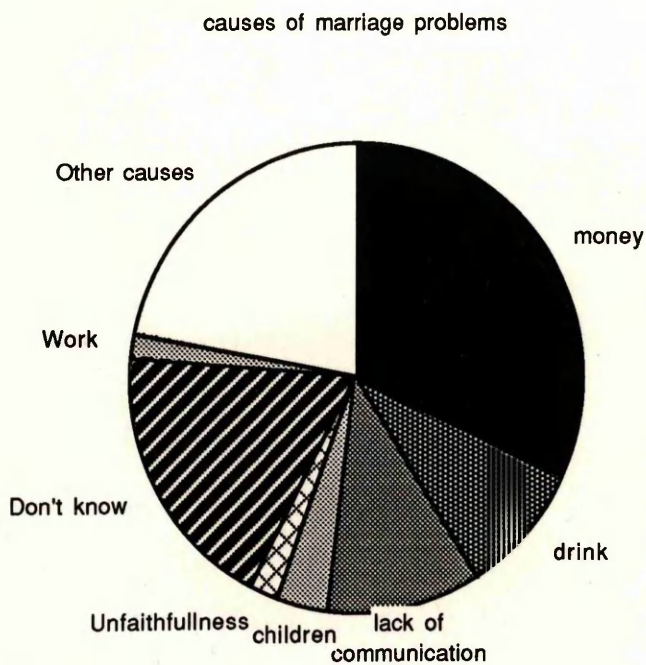
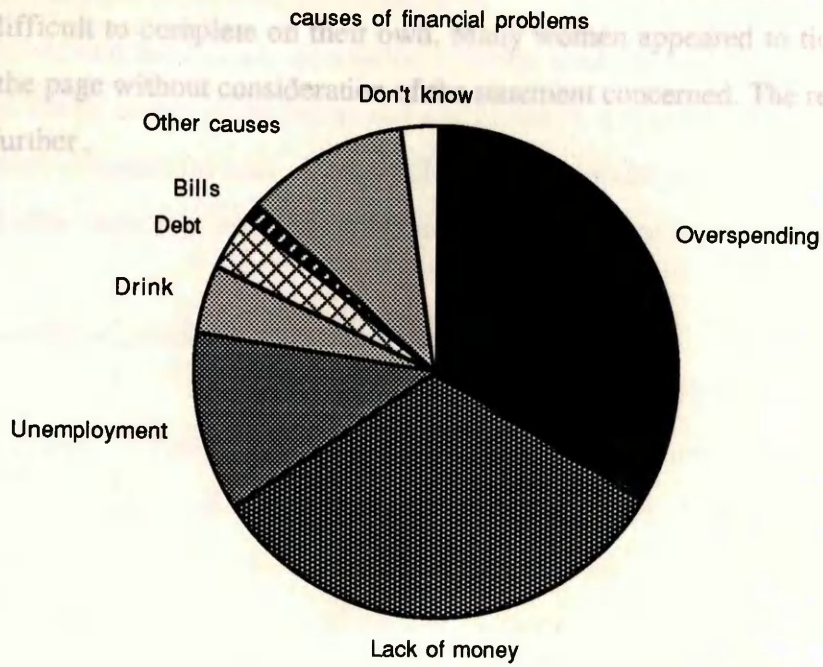


Figure 46: Causes of Financial problems



Locus of control results

It was noted by the interviewers that many women found the questionnaire on health locus of control too difficult to complete on their own. Many women appeared to tick the boxes on the right side of the page without consideration of the statement concerned. The results were not used or analysed further.

There are a number of possible explanations for this difference:

One: healthy women become involved in the co-operative and are able to attend meetings while those with chronic illness and mental illness are too ill to attend. But after multiple regression analysis of the results with the inclusion of age, chronic disease, damp housing, marital status, children, employment and loss of job due to illness and with the exclusion of committee members, the difference between attenders and non-attenders was still statistically significant.

Two: There is a type of person who becomes involved in co-operatives in the same way as they join church groups and political parties. These people have "healthy personalities" and so the difference can be explained as a feature of involved people. But there is little concrete evidence that those who join a political party or a church are necessarily "healthier" people before they join. On the contrary, people attending meetings might be lonely or lonely.

It would have been useful to have a list of members of churches etc. although it might have been difficult in Glasgow. Even if it were possible to do this, it would not be a perfect solution.

The attenders appeared to be more involved in three main reasons. First, because it seemed like a good idea and because they had to join the co-operative to live in the flats. Most non-attenders were apathetic or too busy to participate, with only 2 women prevented by illness from attending meetings. There is no evidence from these reports that the attenders were necessarily healthier personalities who were more motivated generally than the rest.

Using the data from Pollokshaws also refutes the first two explanations. If the Kennishead difference was due to bias from healthy, more motivated people, we would expect there to be at least a trend in Pollokshaws mirroring the co-operative. But attenders and members of the Pollokshaws tenant association did not have any differences in their health on the MOSI or HAD.

Three: Attendance and a sense of being involved leads to better health. By the nature and design of this study causation cannot be proven. The other explanations outlined above do not adequately

9. Discussion

Comparison of attenders and non-attenders

This study shows that there is an association between attendance in a tenant management co-operative and better scores on physical and social health categories of the MOSI and on the Hospital Anxiety-Depression scale. These differences remained even after excluding committee members and after including other possible confounding variables in a multiple regression.

There are a number of possible explanations for this difference:

One: healthy women become involved in the co-operative and are able to attend meetings while those with chronic illness and mental illness are too ill to attend. But after multiple regression analysis of the results with the inclusion of age, chronic disease, damp housing, marital status, children, employment and loss of job due to illness and with the exclusion of committee members, the difference between attenders and non-attenders was still statistically significant.

Two: There is a type of person who becomes involved in co-operatives in the same way as they join church groups and political parties. These people have "healthy personalities" and so the difference can be explained as a feature of involved people. But there is little concrete evidence that those who join a political party or a church are necessarily "healthier people" before they join. On the contrary, people attending meetings might be bored or lonely.

It would have been useful to have asked about membership of churches etc. although it might have been difficult in Glasgow given the endemic religious tensions.

The attenders appeared to become involved for three main reasons: to improve the flats, because it seemed like a good idea and because they had to join the co-operative to live in the flats. Most non-attenders were apathetic or too busy to participate with only 9 women prevented by illness from attending meetings. There is no evidence from these replies that the attenders were necessarily healthier personalities who were more motivated generally than the rest.

Using the data from Pollokshaws also refutes the first two explanations. If the Kennishead difference was due to bias from healthy, more motivated people, we would expect there to be at least a trend in Pollokshaws mirroring the co-operative. But attenders and members of the Pollokshaws tenant association did not have any differences in their health on the MOSI or HAD.

Three: Attendance and a sense of being involved leads to better health. By the nature and design of this study causation cannot be proven. The other explanations outlined above do not adequately

explain the association of attendance at the co-operative and better health. However a hypothetical link is needed between attendance at the co-operative and health for this explanation to be acceptable:-

(a) Locus of control:-It could be that the link can be made by the locus of control concept. A sense of control over their housing in these women, translates to a change in their health locus of control, with an increased internal locus of control, which is associated with better health. The locus of control measure used in this study did not seem to be easy to complete or interpret with interviewer evidence that there was a straight-line response set. Therefore this study is unable to establish a link between health locus of control and attendance. The hypothesised link is supported by the Ottawa Charter (1986) of the World Health Organisation which stated that "people cannot achieve their fullest health potential unless they are able to take control of those things which determine their health."⁸³ Poor housing does appear to be associated with illness, so it could be extrapolated that control over housing would affect health.

(b) Social support:-The formation of the co-operative might have led to increased social contact and support in the flats. Good social support has been implicated in a number of studies in the maintenance and promotion of good health. But there is no difference in the social support of attenders and non-attenders in this study, not even in the number of times that neighbours are visited or helped. In fact in the whole sample of both areas 27% of women never visit a neighbour and 40% never give or receive help from a neighbour. Anonymous entrances, the height of the flats and solid front doors destroy the traditional "popping in" and passing contact. It is testament to people's resilience that 39% of women managed to chat to their neighbours several times a week and 30% gave or received some help about every month. The co-operative has participated in the construction of a community centre, which opens in 1992. It may provide a focus for increased social contact.

(c) Self-esteem:-It might be that the co-operative gives back to the women self-esteem and power, a sense that they are worth something and have an active role to play in their society. Attenders did believe that they would have a better chance of changing the council's mind if it were planning something that might affect their health. A woman in another housing co-operative in Glasgow said: "Before the co-op I used to play bingo twice a week and visit the doctor to get my Valium. Now look around you - this must be better for us - we're in charge."⁸⁴

Low self-esteem has been shown to be associated with poor health, especially depression, in other studies. The Whitehall II study reported in 1991 that civil servants in more interesting and

responsible jobs had better health, than those in boring ,repetitive jobs with no responsibility.⁸⁵ Brown suggested that low self-esteem is the final common pathway of factors causing vulnerability to depression⁷² . On a biological level it has been postulated that self-esteem is based on a hypothesised “Resource holding potential”, an estimate of the ability of an individual to compete with others⁸⁶ . In experiments , it has been shown that an animal with low “Resource holding potential” switches into a different physiological state with high steroid secretion and a behaviour pattern for flight and submission rather than fight⁸⁷ .So by raising the self-esteem of the women in the co-operative “the attendance effect” might protect them against depression and other diseases.

Of the three possible links ,the self-esteem hypothesis appears to be the most likely. That is attending the co-operative and being involved in it, leads to a rise in self-esteem with a subsequent protective effect against illness. The political efficacy data supports this hypothesis indirectly and anecdotal observational evidence collected during the preparation for the study encourages this suggestion. The utility of the locus of control construct and questionnaire is doubtful in community studies in the UK . The measurement of social support has not evolved to a point where it might be sensitive enough to detect very subtle differences .

Comparison of the two areas

The lack of difference in health status scores between the Kennishead co-operative and Pollokshaws could be perceived as a positive finding. When Kennishead co-operative started in 1987 , small area statistics from that time show that Kennishead had a standardised mortality ratio of 107 for all women from 1985-1987 compared to 83 for Pollokshaws. The Jarman index of deprivation for Kennishead (18) was worse than Pollokshaws (0). Unemployment was also higher. One might have expected the women in Kennishead would have lower scores on the MOSI and HAD rather than equal scores. Although the women in Pollokshaws were older, the MOSI has no significant relationship to age (correlation=0.1). In the co-operative there were more unemployed women and women who had lost their jobs due to ill health and these women had significantly lower MOSI scores than the rest of the population. Despite this there was not even a statistical trend towards better health in Pollokshaws. Therefore it could be argued that the co-operative has lead to an unexpected equality of health scores with the control area .

A link between the co-operative and this “equality of health” could be provided for by a rise in self-esteem. Women in Kennishead believed that they would have a better chance of changing the councils mind suggesting that they had gained political efficacy.

However it could be argued that there have been new tenants moving into the co-operative since the small area statistics were compiled in 1987, so the population in 1989 may have been different. But most women (66%) were living in the co-operative when it was formed, and the median time in the flat was 4.5 years.

The lack of difference could also be due to other causes:- Only 48 out of 189 women sampled in the co-operative felt involved and only 52 out of 189 attended meetings regularly or occasionally. So any postulated beneficial "co-operative effect" on self-esteem may have been affecting only 30% of the women in Kennishead. Therefore it may have been submerged in the majority when the whole co-operative is measured.

The health status questionnaire, the MOSI, may not have been sensitive enough to pick up the hypothesised differences between the areas. But there should have been some evidence from the 95% confidence intervals of the difference on the Mann-Whitney test if this was true. The 95% confidence intervals for the median difference of zero for general health perceptions were -5.1 to +5.0.

It could be that the co-operative with a population of 2000 and 750 units is too large to allow people to become involved or feel that they have a chance to participate. Research in Norway on housing co-ops⁸⁸ has suggested that the optimum size is around 100-200 housing units as this allows the employment of staff, while allowing people to get to know each other.

Any "co-operative effect" may not have worked through into the population in just 3 years. This possible drawback was appreciated before the study started, but it was decided to use Kennishead co-operative because it had not changed greatly in the three years of operation. If a longer running co-operative had been chosen other questions would have arisen :- would the people still be the same in character to those in any comparison area? Would the co-operative have changed the fabric of the buildings substantially e.g. damp proofing and concierge system?

The perfect experiment scientifically would have been to split up 400 people in one area into a co-operative and a control area after taking baseline readings. Then they should have been kept in these areas for 5 years and the study repeated. However in a natural experiment, people will move and areas will not always be perfect matches.

Housing and Political Efficacy

The results in the housing perceptions and political efficacy sections are interesting.

Fewer women perceived there to be a problems with the housing in Kennishead. But when they were questioned about their own experience of crime in the area , more women had been mugged and had their flats burgled in Kennishead than in Pollokshaws. The co-operative committee have installed a concierge system in the flats in May 1991, in response to the burglaries problem. As the victims of burglaries ,assaults and vandalism had poorer health ,it is planned to return to the women surveyed in Kennishead in 2 years time to assess the impact of the improved security on their health.

The waiting time for repairs figures are difficult to interpret because the external repairs in the co-operative come under the councils control and there is also a number of repairs to be completed by the council from before the co-operatives formation in 1987. However the difference between the areas is striking, due to the co-operatives policy of completing all repairs under its control in one week by using outside contractors.

Satisfaction with the housing in Kennishead was higher both as measured by the direct question on satisfaction and indirectly by the lower number of women seeking transfers out of the co-operative compared to Pollokshaws. It is interesting to note the large proportion of people (38%) seeking transfer who had medical priority points . The lack of discriminatory power of medical points has been remarked on by other authors⁸⁹ .

The study confirmed the association between damp unusable and damp affected rooms and poor perceived health . But the questions on damp included the phrase "a poor state of repair" so they may not be directly comparable with other more detailed studies of damp housing .However an independent architects and surveyors report in 1987 on the Kennishead flats⁹⁰ discovered some form of dampness problem in 56% of the units surveyed. Only 3 out of the 57 flats surveyed in that report (5%) had "serious damp problems", which is close to the proportion of damp unusable flats in this study . In 1987 the surveyors suggested that rain penetration from the roof and condensation with a lack of adequate ventilation were the two most likely causes for the damp. The roofs were repaired in 1990.

In order to reduce potential bias of over-reporting of health problems by those with damp flats, the questionnaire was designed so that the housing questions were after the MOSI. But it would have been helpful to have undertaken an objective measurement of damp in these houses,

so that the amount of mould and the degree of dampness could have been correlated with the perceived health status, as was done by the study on damp housing in Darnly, Glasgow.⁹¹

The women in the co-operative appear to feel that they would be more effective if they had to act politically than the women in Pollokshaws, although 40% of the women in the co-operative thought that they would have no chance. It is interesting to note that the attenders at the co-operative thought they would have more chance.

Overall there is little difference between the two areas in the responses to a threat from the council. As a first action the top three responses were "contact my MP", followed by "contact my councillor" and then "sign a petition". These three responses were also rated as potentially the most effective.

But when their potential responses are compared to their actual actions in the past, many more women have signed a petition, followed by contact a councillor and then an MP. The greatest number have never done any of those actions.

Fewer than might be expected in the co-operative (10%) might chose "to raise the issue in an organisation that they already belonged to" as their first action, and hardly any had done this, although the co-operative was not specifically named in the question. The co-operative has a high profile and good contact with its residents, but might encourage members to use itself as an advocate for their disputes with the council, thus encouraging a sense of belonging and involvement. As has already been discussed, many people were not involved because there did not have the time or were too busy. By demonstrating its effectiveness the co-operative can perhaps win over some of these women.

Social Support networks

Close friends, grown-up children and siblings all seem to help in the maintenance of health. Friends need not actually give the help or visit frequently, they are a reserve for times of trouble. This is demonstrated by the lack of any association between when women actually last saw their close friend and health status, whilst their perceived frequency of seeing any friend is significantly related to scores on the MOSI. The presence of friends does not influence the likelihood to consult a GP.

Sick people may be unable to keep up contact with their friends and may not get to see their brothers and sisters, which could explain the association. But the same explanation could not be

used for the association of having grown-up children and better scores on the MOSI. The social support questions provided some discrimination between number of supports and quality of support and some more clues to the links between social support and health. Social support was measured because of its possible role in linking "the co-operative effect" with health. But to provide really detailed answers to the questions on its relationship to health, more sensitive and longer questionnaires are needed rather than using "by-products" of studies such as this one.

Medical use

Most women could easily get to the GPs surgery by walking. Although it is encouraging that 29% could get an appointment the same day for a routine problem, 12% would have to wait for longer than three days. 44% reported that they had seen their GP in the last four weeks although this figure is probably an overestimate. For the purposes of this study that inaccuracy is irrelevant because the perceived use of the GP was recorded only as a further indicator of poor health. Only 8% had not been in the last year, which, if true, would allow ample opportunity for opportunistic health promotion.

The construct validity of the MOSI is supported by its association to the use of medical services, especially the finding of an inverse relationship between the number of GP visits in the last 4 weeks and general health perceptions.

When comparing the use of different services, the lowest MOSI scores were in those with perceived chronic illness. The scores for those admitted to hospital in the last year would have been confused by maternity admissions and for those on long-term medication by the oral contraceptive. 12% of the women had used the accident and emergency department of a hospital in the last year, which could be an indicator of inadequate out-of-hours GP cover in the two areas.

Causes and Behaviour

Two-thirds of women said that they would visit their GP if they had a headache for two weeks. But 50% believed that headaches were caused by worry, tension, and stress and only 38 women related the cause of headaches to something directly medical. A decision to consult a GP about a headache is obviously based on factors other than ideas of causation.

Between 40 to 50% said they would go for a cough or a runny nose although many blamed physical factors such as the weather, getting wet, cold or sitting in draughts for the common cold.

Only 30% ascribed the common cold to a germ or virus, although perhaps many might have expanded "the weather" to "the weather making you susceptible to viruses" if they had been given the chance.

A similar proportion would visit for depression, although the number of groups of responses on the cause of depression reflects perhaps the complexity of most people's lives and the variety of ideas of the nature of depression i.e. "I'm really depressed today about my work" to "Life is not worth living and all is black". It also demonstrates the difficulty in phrasing questions in this way and then analysing the answers in a coherent way.

Many GPs might be surprised at the apparent readiness of women to take children with school behaviour problems to the GP (46%). The general practitioner is often the first port-of-call for many problems which are later dealt with by others such as educational psychologists.

Although not directly comparable, these readiness to visit the GP results appear higher than those from Farrow and Charny's study in Cardiff⁷⁷. Social class differences and the Yes-No answers required in this study, (as opposed to the range of options presented in Farrow's study) might explain these differences.

Few women said that would see the doctor for marital or financial problems, although they are the underlying agenda in many GP consultations. The commonest causes of marital problems were money, lack of communication and alcohol abuse. The causes of financial problems were split into thirds: (1) lack of money from elsewhere i.e. not enough pension or pay; (2) overspending or carelessness; (3) Unemployment, drink, bills and other problems. The stereotype of the "canny Scot" is perhaps reflected in the blame attached to a lack of thrift.

The answers on potential visits to the GP were summed as a global score and the women divided into those more and less likely to visit the GP. Women who are less likely to visit the GP, had lower scores on the mental and social health scales of the MOSI and more anxiety on the HAD, which could explain why those who are most in need, often seem to have the most difficulty in getting help.⁹²

The predictive value of the potential visit score of actual consultation rates in the last 4 weeks was not high, as 40% of the less-likely to visit group had seen their GP compared to 55% of the more likely.

The lack of association of social support quantity and frequency with potential or actual visits to the GP in this population could be due either to the insensitivity of either of the two measures or

the numerous other factors that influence a decision to seek medical attention.

The MOSI and HAD

The construct validity of the MOSI was further tested in this study. Lower scores on all categories were found in those with one or more medical problem, those attending the GP in the last four weeks and last year, those admitted to hospital and to casualty in the last year and patients on long-term medication.

Those with worse scores on the HAD had lower mental health scores on the MOSI.

Patients found the MOSI easy to complete, taking a few minutes only and the interviewers reported that few people appeared to have problems with both the MOSI and HAD.

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- ¹ Le Corbusier(Charles Edouard Jeanneret.Vers Une Architecture(1923).Translated into English by F Etchells .London.Architectural press.1974
- ² Fanning DM. Families in flats.BMJ (1967) ;4:382-6.
- ³ Jephcott MA . Homes in high flats.Glasgow .1971.
- ⁴ Stewart WFR.Children in flats:a family study.London ,NSPCC.1970.
- ⁵ Strachan D .Damp housing and childhood asthma:validation of reporting of symptoms.BMJ(1988) 297: pp 1223-7.
- ⁶ Hunt SM Martin CJ et al.Report into study on damp housing ,mould growth and health status.Edinburgh,Edinburgh University.1988.
- ⁷ Keithley J ,Byrne D,Harrison S,McCarthy P.health and housing in public sector housing estates.Public health .(1984) 98:pp 344-353.
- ⁸ Jacobs J.The death and life of great American cities .New York ,Random House.1961.
- ⁹ Coleman A. Utopia on trial .London , Shipman ,1985.
- ¹⁰ Hannay D Mental health and high flats .J Chronic Disease.1981.34:431-2
- ¹¹ Masters N Birtchnell J.Is living in a slab block depressing?Practitioner (1989) 233:p 664-666
- ¹² Townsend P Davidson N. Inequalities in health .The Black Report.Harmondsworth.Penguin.1982.
- ¹³ Wilkin D ,Leavey N Metclafe D .Anatomy of Urban General practice.London.Tavistock.1987
- ¹⁴ Cook D, Morgan HG .Families in high rise flats.BMJ (1981) 284: p286
- ¹⁵ Grant R.Monitoring the Summerston Housing co-operative:first progress report.Edinburgh.Central Research Unit.Scottish Development Office.1977.
- ¹⁶ Burbage M.Update on resident management corporations in the United States .London.Dept of the Environment.1988.
- ¹⁷ Census Data 1981 census .OPCS,Edinburgh.
- ¹⁸ Titterton M, Carstairs V.Needs for primary care : small area statistical information for primary health care planning in Scotland. Edinburgh.ISD publications .1988.
- ¹⁹ Jarman B .Identification of underpriveleged areas .BMJ (1983) 286:p1705
- ²⁰ Kirschner B Guyatt G A methodological framework for assessing health indices J. Chronic Disease 1985 ,38;1:27-36
- ²¹ Secretary of State for Health,Secretaries of State for Scotland,Wales and Northern Ireland. Promoting Better Health. London ,HMSO, 1989
- ²² Hunt SM McEwen J McKenna SP Measuring health status :a new tool for clinicians and epidemiologists, Journal of the Royal College of General Practitioners,1985,35:185-188
- ²³ Stewart A Hays R Ware J, The Medical Outcome Study short form general health survey ,Medical Care ,July 1988,26,7 pp 724-733

- ²⁴ Brook RH Ware JE Davies-Avery A Conceptualisation and measurement of health for adults in the Health Insurance Study. Volume VIII ,Overview. . Santa Monica: RAND corporation (Publication Number R-1978/8-HEW),.1979
- ²⁵ Hall J and Hall N The measurement of outcomes of general practice :comparison of three health status measures, Family Practice Vol 4 no.2 pp.117-121(1987)
- ²⁶ Ware JE, Sherbourne CA Davies -Avery A.A short form general health survey.Santa Monica, The RAND corporation (Publication no.p-7444),1988
- ²⁷ Tarlov AR Ware JE Greenfield S Nelson EC et The Medical Outcomes Study-An application of methods for monitoring the results of medical care. JAMA 18 August 1989 ,262;7:925-930
- ²⁸ Stewart AL Greenfield S Hays RD Wells K et Functional status and Wellbeing of patients with chronic conditions JAMA 18 August 1989 262;7:907-913
- ²⁹ Hunt SM ,McEwen J, McKenna SP . Measuring health status . London,Croom Helm, 1986
- ³⁰ .Hunt SM, McKenna ,SP Mc Ewen J. The Nottingham Health Profile :subjective health status and medical consultations.Soc. Sci. Med. 1981,15A:221-229
- ³¹ Kind P Carr-Hill R The Nottingham Health Profile :a useful tool for epidemiologists? Soc.Sci.Med. 1987,25;8:905-91
- ³² Blantyre Special Initiative Report. Glasgow ,Strathclyde Regional Council,1985.
- ³³ Sheldon M Stoddart R Trends in General Practice computing ,London, RCGP: 1985.
- ³⁴ .RCGP Classification of Diseases,Problems and Procedures London , RCGP ,Occasional paper 26,1984.
- ³⁵ Clark WAV Freeman HE et The influence of Domestic Position on Health status .Soc. Sci. Med. 1987 24;6:501-506
- ³⁶ Blaxter M Evidence on Inequality in Health from a national survey Lancet 1987 July 4 :30-33
- ³⁷ Ware JE Brook RH et Conceptualisation and measurement of health for adults in the health insurance study:Vol 1,Model of Health and Methodology. ,Santa Monica ,Rand Corporation R-1987/1-HEW. May 1980
- ³⁸ Herzog AR Bachman JG Effect of questionnaire length on response quality. Public Opinion Quarterly 1981, 45: 549-559.
- ³⁹ Zigmond AS ,Snaith RP. The Hospital Anxiety Depression Rating scale .Acta Psychiatric.Scand. (1983) 67:pp361-370.
- ⁴⁰ Wilkinson MJB ,Barczak P.Psychiatric screening in general practice :comparison of the general health questionnaire and the hospital anxiety depression scale.Journal of the Royal College of General Practitioners .(1988) 38:pp311-313.
- ⁴¹ Andrews H,Barczak P,Allan RN. Psychiatric illness in patients with inflammatory bowel disease. Gut (1987) 28: pp1600-1604.
- ⁴² Rotter R .The internal -external locus of control construct.Journal Consulting Clinical Psychology(1975) 43;1:pp56-67

- ⁴³ Levenson H. Chapter in : Research with the locus of control construct, assessment methods. Lefcourt (ed) .London. Academic .1981.
- ⁴⁴ Wallston KA Wallston BS .Development of the multidimensional health locus of control scale. Health Education Monographs (1978)6;2:pp160-170.
- ⁴⁵ Wallston KA .Who is responsible for your health ? The construct of health locus of control. Social psychology of health and illness. Sanders G.(ed) .New Jersey .Lawrence Eagle Earlbaum Associates.1982.
- ⁴⁶ Pill R ,Stott N .Concepts of illness causation and responsibility ;some preliminary data from a sample of working class mothers. Soc.Sci.Med.(1982) 16: pp 43-52.
- ⁴⁷ Abella R,Heslin R. Health locus of control values and the behaviour of family and friends. Basic and Applied Psychology.(1984) 5;(4):pp283-293
- ⁴⁸ Marshall GN ,Crooks V,Collins B.Health locus of control values and behaviour. Basic and Applied Psychology.(1984) 26;NSI:p164
- ⁴⁹ Levin JS,Schiller PL. Religion and the multidimensional health locus of control scales. Psychological Reports (1986) 59: p26
- ⁵⁰ Fox J .Social Network Interaction : a new jargon in health inequalities. BMJ (1988) 297: pp373-374.
- ⁵¹ Berkman LF,Syme SL.Social networks ,host resistance and mortality: a nine year follow-up study of Alameda County residents. Am J. Epidemiol. (1979) 109: pp 186- 204
- ⁵² House JS,Robbins C,Metzner HC.The association of social relationships and activities with mortality. Prospective evidence from the Tecumseh Community health Study. Am J Epidemiol(1982) 116:pp123-140
- ⁵³ Blazer G Social support and mortality in an elderly community population .Am J Epidemiol(1982) 115: pp 684-694
- ⁵⁴ Welin L et al .Prospective study of social influences on mortality .Lancet (April 20 1985)pp 915-918
- ⁵⁵ Davidson TN ,Bowden ML,Feller I.Social support and post-burn adjustment. Arch.Phys.Med.Rehabil.(1981) 62:pp274-278
- ⁵⁶ Bandura B Waltz M.Social support and quality of life following myocardial infarction .Social Indicators Research(1984) 14;3: pp 295- 311
- ⁵⁷ Berle BB ,Pinsky RH,Wolf S et al.A clinical guide to prognosis in stress disease. JAMA(1952) 149: pp1624-1628
- ⁵⁸ Pilisuk M ,Minkler M.Supportive ties a political economy perspective. Health Education Quarterly(1985) 12;1: pp 93-106
- ⁵⁹ O'Reilly P,Thomas HE.Role of support networks in maintenance of improved cardiovascular health status. Soc.Sci.Med.(1989) 28;3: pp 249-260
- ⁶⁰ Horowitz SM,MorgensternH,Berkman LF.The impact of social stressors and social networks on paediatric medical care use .Medical Care(1985) 23;8:pp 946-959
- ⁶¹ Hoppe SK,Heller PL.Alienation ,familism and the utilisation of health services by Mexican-Americans. J.Health and Social Behaviour.(16 Sept 1984)pp 304-312

- ⁶² Coe RM, Wolinsky FD et al. Complementary and compensatory functions in social network relationships among the elderly. *The Gerontologist*. (1984) 24; 4: pp 396-340
- ⁶³ Hibbard JH. Social ties and health status : an examination of moderating factors. *Health Education Quarterly* (1985) 12;1: pp 23-34
- ⁶⁴ Eckenrode J. The mobilisation of social supports : some individual constraints. *American Journal of Community Psychology*. (1983) 11;5: pp 509-528
- ⁶⁵ Wilmott P. Friendship networks and social support .London .Policy Studies Institute. 1987
- ⁶⁶ Mithchell RE, Trickett EJ. Task Force Report : social networks as mediators of social support. *Community Mental Health Journal* (1980) 16;1: pp27-44
- ⁶⁷ Orth -Gomer K, Uden A-L. The measurement of social support in population surveys. *Soc. Sci. Med.* (1987) 24;1: pp 83-94
- ⁶⁸ Uden A-L, Orth -Gomer K. Social support and health. Report No2. Development of a survey method to measure social support in population studies. Stress Research Report No.178, Karolinska Institute. 1984.
- ⁶⁹ Orth-Gomer K, Johnson JV. Social network interaction and mortality; a six year follow-up study of a random sample of the Swedish population. *J Chronic Disease* (1987) 40;10: pp949-957
- ⁷⁰ Bandura A. Social learning theory .New Jersey. Prentice Hall. 1977.
- ⁷¹ Stretcher VJ, DeVellis BM, Becker MH, Rosenstock IM. The role of self-efficacy in achieving health behaviour change. *Health Education Quarterly* (1986) 13;1: pp 73-91
- ⁷² Brown GW, Andrews B, Harris T, Adler Z, Bridge L. Social support, self-esteem and depression. *Psychol Med* 1986;16:813-31
- ⁷³ James W. Principles of psychology. Volume 1. New York. Henry Holt. 1980.
- ⁷⁴ Swallow SR, Kuiper NA. Social comparison and negative self-evaluations: an application to depression. *Clin. Psychol. Rev.* 1988;8:55-76
- ⁷⁵ Hannay D. The symptom Iceberg : a study of community health. London. Routledge & Kegan Paul. 1979
- ⁷⁶ Parsons T. The social system .London. Kegan Paul. 1951.
- ⁷⁷ Farrow SC, Charney MC, Lewis PA. A survey into the appropriateness of the public's response to hypothetical medical problems. *Journal of the Royal College of General Practitioners*. (1988) 38: pp402-406.
- ⁷⁸ Howie J. Chapter in : Trends in General Practice 1979. Fry J (ed) .London. Royal College of General Practitioners .1979.
- ⁷⁹ Cartwright A. Patients and their Doctors .Kegan Paul .London .1967.
- ⁸⁰ Minitab Statistical software Version 6.0, .Minitab Inc. State College, PA. 1989.
- ⁸¹ Ware JE, Sherbourne CA, Davies -Avery A. A short form general health survey. Santa Monica. The Rand corporation (Publication no. p-7444). 1988.
- ⁸² Anderson J St C, Sullivan F, Usherwood TP. The Medical Outcomes Study Instrument (MOSI)-use of a new health status measure in Britain. *Family Practice* 1990; 7:205-218

⁸³ WHO Ottawa charter, Ottawa Canada. WHO. November 1986

⁸⁴ Personal observation .Calvey co-operative ,Glasgow.March 1989.

⁸⁵ Mamiot MG, Smith GD, Stansfield S. Health inequalities among British civil servants: the Whitehall II study. *Lancet* 337;8754: 1387-1392

⁸⁶ Editorial (Anonymous). *Lancet* , Oct 22 1988 pp943-944

⁸⁷ Price JS. Alternative channels for negotiating asymmetry in social relationships. In: Chance MRA ed. *Social fabrics of the mind*. Hove, Lawrence Erlbaum. 1988: pp157-95

⁸⁸ Clapham D, Kintrea K. Importing housing policy: Housing Co-operatives in Britain and Scandinavia. *Housing Studies* 2;3:157-169

⁸⁹ Parsons L. Medical priority for re-housing. *Public health* (1987)101:pp435-441

⁹⁰ Final Survey Report on Community Renewal Project 87/187. Glasgow. Cobban and Lironi (Architects) Currie and Brown (Quantity Surveyors) 1987

⁹¹ Platt SD et al. Damp housing , mould growth and symptomatic health state . *BMJ*;298:1673-1678

⁹² Hart JT. The Inverse care law . *Lancet* (1971)1:405-12

Appendix A
Questionnaire

Name of respondent

1. code

Address

2...How old are you in years ?

Age

3..Where were you born ?

Record birthplace:-

1. Glasgow
2. Elsewhere in Scotland
3. England or wales
4. Northern Ireland
5. Eire /Irish Republic
6. UK doesn't know where exactly
7. Outside British Isles (specify):-

4.Are you married or single?

- 1.Single never married
- 2.Married or living as married
- 3.Divorced and seperated
- 4.Widowed

3. Are you in any kind of paid work now?

5. What type of school did you last attend?. Say the type of school as it was when you were at school there.

School type:-

1. Junior secondary
2. Senior secondary
3. Comprehensive
4. Direct grant
5. Public/Fee paying
6. Grammer
7. Secondary modern
8. Technical school
9. Other

6. What qualifications did you have from school

1. .O levels
2. .A levels
3. .Highers
4. .CSE
5. .Leaving certificate
6. .Other specify
7. .None
9. .Don't know

7. How old were you when you left school?

1. 14 2. 15 3. 16 4. 17 5. 18

8. Are you in any kind of paid work now ?

- 1 Yes 2 No

If yes please describe your job as fully as possible:-

9.

10. How would you describe your position in this job?

- 1 Employee not supervising others
2 Employee supervising others
3 Self-employed, not employing others
4 Self-employed employing others
9 Don't know

11. If you are not working how long is it since you last worked for longer than three months ?

Time in months:-

Put 999 for never worked

12..and what was the position :-

13. If you are not working at the moment why is that?

- 1 Unemployed looking for work
2 Looking after the children or home full-time
3 Out of work because sick
4 Permanently sick or disabled
5 Caring for sick relative
6 Student
7 Retired

14. Does your husband or partner work ?

- 1 Yes 2 No

and if yes what does he do:-

15.

16. Have you ever left a job ,been refused a job or lost a job through illhealth?

1. Yes 2. No

17. How many cigarettes a day do you smoke?

- None 0-5 6-10 11-15 16-20 21-25 over26
- 1 2 3 4 5 6 7

18. How much alcohol have you drunk in the last seven days? 1 pint = 2 units 1 short = 1 unit 1 glass of wine=1unit

- 1 . None
- 2 . 0-10 Units
3. 11-20 units
4. 21-30 units
5. 31-40 units
6. 41-50 units
7. Over 60 units

Now ask them to fill out the Health status questionnaire

Now some questions about your housing

19. How long have you lived in this flat

3. Arguments
3. Financial problems
4. Reluctant to have people round
5. Emotional upset

20. What rooms do you have in this apartment?

Number of Bedrooms

Number of living rooms
excluding bathroom

and kitchen

22. How many people live here other than you?

Adults over 16

23. children 0-4

24. Children 5-15

25. How long were you on the waiting list before you got this

flat?

26. Are any of these rooms unusable because of a poor state of repair, coldness or damp?.

1. Yes 2. No

27. If the rooms are not unusable are any of them affected by damp, mould, or a poor state of repair?

1. Yes 2. No

28. If yes to either 26 or 27 does this cause any problems such as arguments, overcrowding, financial problems, emotional upset or does it make it difficult to have people round? (if more than 1 ask which is biggest problem)

1. Overcrowding

2. Arguments

3. Financial problems

4. Reluctant to have people round

5. Emotional upset

37... Do you think any of the following are a problem in this area? (tick any you think are)

29. Are you waiting for any repairs at the moment

1. Yes 2. No

30. If Yes for how long in months :-

31.. Are you satisfied with the lift system here

1. Yes 2. No

32. Has your flat been decorated recently in the last year?

1. Yes 2. No

33. Do you heat all the rooms regularly in the winter?

1. Yes 2. No

34.. Overall how satisfied would you say you were with this Flat

1. Very happy
2. Quite happy
3. Not sure
4. Quite unhappy
5. Very unhappy

35.. Are you on the waiting list for a transfer at the moment?

1. Yes 2. No

36.. Were any medical points given and if Yes for what

1. Yes 2. No

For :-

Appendix A Questionnaire 7

37... Do you think any of the following are a problem in this area ?(tick any you think are)

- | | | | |
|--|-----|---------------------------------|--------------------------------|
| Vandalism | 37 | 1. <input type="checkbox"/> Yes | 2. <input type="checkbox"/> No |
| Litter and rubbish | 38 | 1. <input type="checkbox"/> Yes | 2. <input type="checkbox"/> No |
| Bad smells | 39 | 1. <input type="checkbox"/> Yes | 2. <input type="checkbox"/> No |
| Muggings and assaults | 40 | 1. <input type="checkbox"/> Yes | 2. <input type="checkbox"/> No |
| Burgularies | 41 | 1. <input type="checkbox"/> Yes | 2. <input type="checkbox"/> No |
| Lack of safe places for children to play | 42. | 1. <input type="checkbox"/> Yes | 2. <input type="checkbox"/> No |

43...Have you ever personally been a victim of ?

- | | | | |
|-----------------------|-----|---------------------------------|--------------------------------|
| Vandalism | 43. | 1. <input type="checkbox"/> Yes | 2. <input type="checkbox"/> No |
| Muggings and assaults | 44. | 1. <input type="checkbox"/> Yes | 2. <input type="checkbox"/> No |
| Burgularies | 45. | 1. <input type="checkbox"/> Yes | 2. <input type="checkbox"/> No |

Now ask woman to complete Anxiety-Depression questionnaire

46..Who is your GP or family doctor?.

Where does he or she work?

47...How easy is it for you to get to see a doctor in his or her surgery with a routine problem(which is not an emergency)?.Can you get an appointment on

1. The same day
2. The next day
3. The next 2-3 days
4. The same week

Appendix A Questionnaire 8

48...Are you on any medicines at the moment either tablets or creams inhalers etc

1. Yes 2. No

49..How long does it take to get to the surgery

- 1 5 minutes
2 6-15 minutes
3 16-30 minutes
4 31-60 minutes
5 more than one hour

50..How do you get there?

- 1 Walk
2 Bus
3 Drive
4 Taxi
9 Don't know or no doctor

51.How many times have you seen your Doctor or his partners in the last 4 weeks

- 1 None
2 1time
3 2 times
4 3 times
5 4 times
6 5'times
7 more than 5

52..And how many times have you seen him or her in the last year or his partners

- 1
- 2
- 3
- 4
- 5
- 6
- 7 more than 6

53..Have you been admitted and kept in hospital in the last year?

- 1. Yes
- 2. No

54..Have you been to the casualty of a hospital in the last year but not been kept in hospital.?

- 1 Yes
- 2. No

55..Do you suffer from any long-term medical problem ?

- Yes
- No

Write it down as you have been told it.

56.

Now complete the locus of control interview

47..Are your parents alive

(a)

- 1. Yes mother
- 2. Yes Father
- 3. Yes both of them
- 4. No

58. If Yes how often do you see your parent or parents *not living here?*

1. Several times a week
2. About once a week
3. About once a month
4. About once every three months
5. Once in a while
6. Never or rarely

59. Do you have any children not living here?

1. Yes one child
2. Yes 2 children
3. Yes 3 children
4. No

60. If Yes how often do you see your children not living here?

1. Several times a week
2. About once a week
3. About once a month
4. About once every three months
5. Once in a while (once or twice a year)
6. Never or rarely

61. Do you have any brothers and sisters not living here?

1. Yes one brother or sister
2. Yes 2 brothers and/or sisters
3. Yes 3 or more brothers and/or sisters
4. No

62. If Yes how often do you see your brothers or sisters not living here?

1. Several times a week
2. About once a week
3. About once a month
4. About once every three months
5. Once in a while (once or twice a year)
6. Never or rarely

63. How often do you normally visit your neighbours or talk to them for a couple of minutes? (more than just say hello)?

1. Several times a week
2. About once a week
3. About once a month
4. About once every three months
5. Once in a while (once or twice a year)
6. Never or rarely

64. How often do you get help from or give help to your immediate neighbours in your block?

1. Several times a week
2. About once a week
3. About once a month
4. About once every three months
5. Once in a while (once or twice a year)
6. Never or rarely

65..How often do you normally see any friend (not family or neighbour)?

1. Several times a week
2. About once a week
3. About once a month
4. About once every three months
5. Once in a while(once or twice a year)
6. Never or rarely

66..How many close friends would you say you have? ,(someone you can confide in)

Number of close friends

67..When were you last in contact with this close friend or friends

1. 1-6 days ago
2. one to four weeks ago
3. About once a month to three months ago
4. About four months to six months ago
5. once or twice this year
6. Never or rarely

Political efficacy questions

68..Now imagine that the council were proposing to do something which you felt was really unfair or harmful to you and your family in this flat ,what would you do about it?

- 1 Contact my MP
- 2 Contact my councillor
- 3 Speak to an influential person
- 4 Contact a council official
- 5 Contact the local TV or radio
- 6 Sign a petition
- 7 Raise the issue in an organisation I already belong to
- 8 Go on a demonstration
- 9 Form a group of like minded people
- 10 Stop paying rent

69,70,71.Can you name three things on this card which you think would be most effective in making the council change it's mind

- 1 Contact my MP
- 2 Contact my councillor
- 3 Speak to an influential person
- 4 Contact a council official
- 5 Contact the local TV or radio
- 6 Sign a petition
- 7 Raise the issue in an organisation I already belong to
- 8 Go on a demonstration
- 9 Form a group of like minded people
- 10 Stop paying rent

4. No

72..What chance do you think you would have of making the council change it's mind

- 1 Good
- 2 Fair
- 3 No chance

73.And have ever done any of these things in your life?

- 1 Contact my MP
- 2 Contact my councillor
- 3 Speak to an influential person
- 4 Contact a council official
- 5 Contact the local TV or radio
- 6 Sign a petition
- 7 Raise the issue in an organisation I already belong to
- 8 Go on a demonstration
- 9 Form a group of like minded people
- 10 Stop paying rent

Tenant association

74.Is there a tenants association / co-operative in this block?

- 1 Yes
- 2 No
- 9 Don't know

75.If yes are you a member

- 1 Yes, attends meetings
- 2 Yes committee member
- 3 Yes member but not involved
- 4 No

76.[If no involvement or does not attend meetings ask] These are some of the reasons that people give for not getting involved in tenants association/co-operative. Do any of them apply to you?

- 1. Not interested
- 2. It makes no difference
- 3. No time or too busy
- 4. The meetings are in an inconvenient place
- 5. The meetings are at an inconvenient time
- 6. Due to poor health or disability
- 7. Don't know where the meetings are
- 9. Don't know

77.If yes ,why did you join?:-

78.How frequently have you attended in the last 12 months

- 1. Regularly
- 2. Occasionally
- 3. Rarely
- 4. Never

79..Do you know the names of any of the people on the committee of the tenants association/co-operative?

- 1. Yes
- 2. No

80..Do you know by sight any of the people on the committee of the tenants association /co-operative?

- 1 .Yes
- 2 .No

81..How frequently have you spoken to a committee member in the last 12 months?

- 1 .Never
- 2 Once
- 3 Twice
- 4 Three times
- 5 More than this

82..Are any other people living in this house apart from yourself involved in the local tenant association or co-operative

- 1 .Yes,attends meetings
- 2 .Yes committee member
- 3 Yes member but not involved
- 4 No
- 9 Don't know

Ideas of causation questions

Now I would like to ask you a few questions on what you think causes illnesses

83...If you take a cold what do you think causes

it?

84..If you are tired than usual what causes it?

85..If you take a headache what causes it?

86..If you have a rash where does it come

from?

87..If you have an aching back what usually causes

it

88.If you are anxious what usually causes it?

89.If you become depressed what usually causes it

90..If you have marriage or relationship problems what causes

them?

91..If you have severe financial problems what usually causes them?

92.If you had a runny nose or catarrh at the back of your throat for two weeks would you visit your doctor?

1. Yes

2. No

9. Don't know

93..If you had a cough for two weeks would you visit the doctor?

1. Yes

2. No

9. Don't know

98...If your child's behaviour was causing problems at school for him or her would you visit the doctor?

1. Yes

2. No

9. Don't know

That is the questionnaire finished Thank the respondent.

93.If you felt more tired than usual over the past two weeks would you visit the doctor?

1. Yes

2. No

9. Don't know

94.If you had headaches over two weeks would you visit your doctor?

1. Yes

2. No

9. Don't know

95.If you were depressed for two weeks would you visit your doctor?

1. Yes

2. No

9. Don't know

96.If you had marital problems over 4 weeks would you visit the doctor?

1. Yes

2. No

9. Don't know

97...If you had severe financial problems would you visit the doctor?

1. Yes

2. No

9. Don't know

98...If your child's behaviour was causing problems at school for him or her would you visit the doctor?

1. Yes

2. No

9. Don't know

That is the questionnaire finished.Thank the respondent.

Comments on questionnaire

In a study as wide ranging as this it is difficult to know beforehand how much or how little information one might need to assess the health of women living in the co-operative and to measure sufficient potential confounding variables so that any hypotheses can be adequately tested. Rather than go through the questionnaire question by question and commenting on it, I will mention a few questions which did not yield any useful data.

In the demography section one question on qualifications would have sufficed rather than the three on education. The question on length of unemployment was not used because it did not take into account child-care and retirement. The description of the actual job was not used because of the difficulty in defining womens' social class by employment, as many jobs are part-time. In the housing section there was no point in asking about numbers of people in the flat and rooms because the family structure was not recorded ie are two adults married, mother and grown-up daughter etc. In the medical use section there was no point asking who the GP was because the practice structure was unknown and some people saw GPs a long way from their homes. The names of 96 GPs were recorded. The questions on social structure could have been simpler ie Yes-No rather than how many, because to gain much more useful information would require a far more detailed and exhaustive social support questionnaire. The health locus of control questionnaire did not work.

Medical Outcomes Study Instrument

As used in validation and main studies

Numbers are as main study with validation study numbering in brackets.

Please tick the box to the answer which most corresponds to you:-

100.(4a) The kinds or amounts of
vigorous activities you can do

99(3)..In general would you say your health is :-

running or participating in

strenuous sports

1.

Excellent

101.(4b)The kinds and amounts
of moderate activities

you can do like moving a table,

carrying groceries home

light exercise

2.

Very good

3.

Good

4.

Fair

102.(4c)Walking uphill

or climbing a few flights

5.

Poor

103.(4d) Bending down, kneeling

or stooping

104(4e) Walking 10 yards

105. (4f)Eating, dressing,

washing or using the toilet

106.(6). Does your health keep you from working at a job or doing
 .For how long (if at all) has your health limited you in each of the
 following activities ?

(only one answer per line)

Limited for more than 3 months	Limited for 3 months or less	Not limited at all
---	---	-----------------------------------

100.(4a) The kinds or amounts of
 vigorous activities you can do
 like lifting heavy objects ,
 running or participating in
 strenuous sports

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

101.(4b)The kinds and amounts
 of moderate activities
 you can do like moving a table,
 carrying groceries home or
 light exercise

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

102.(4c)Walking uphill
 or climbing a few flights of stairs

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

103.(4d) Bending down , lifting
 or stooping

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

104(4e) Walking 50 yards

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

105. (4f)Eating, dressing ,
 washing or using the toilet

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

106.(6). Does your health keep you from working at a job or doing work around the house ?

- 1 . Yes for more than 3 months
- 2 . Yes for 3 months or less
- 3 .No

107.(7).Have you been unable to do certain amounts of work or housework because of your health?

- 1 . Yes for more than 3 months
- 2 . Yes for 3 months or less
- 3 .No

108(5).How much bodily pain have you had in the last 4 weeks?

- 1. None
- 2. Very mild
- 3. Mild
- 4. Moderate
- 5. Severe

For each of the following questions please tick the box for the one that comes closest to the way you have been feeling during the past month:

How much of the time during the past month :-

All of	Most of	A good	Some	A little	None
the time	the time	bit of the	of the	of the	of the
	time	time	time	time	time
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

109.(8). Has your health limited your social activities (like visiting friends?

or close relatives) 1 2. 3. 4. 5. 6

110.(9) Have you been

a very nervous person? 2 3 4 5 6

111.(10).Have you felt

calm and peaceful ? 1 2. 3. 4. 5. 6

112.(11).Have you felt

downhearted and blue? 1 2. 3. 4. 5. 6

113.(12).Have you been

a happy person? 1 2. 3. 4. 5. 6

114.(13).Have you felt so down in the dumps that nothing could

cheer you up? 1 2. 3. 4. 5. 6

Scoring the MOSI

Please tick the box to agree or disagree with the following statements to describe you in general:

Health and '0' ill health. Some of the statements are positive and some negative. The scores will be calculated from the MOSI.

Agree strongly Agree Slightly Neutral Disagree Slightly Disagree Strongly

115.(14a) I am somewhat ill 1 2. 3. 4. 5.

116. (14b) I am as healthy as anybody else 1 2. 3. 4. 5.

117. (14c) My health is excellent 1 2. 3. 4. 5.

118.(14d) I have been feeling bad lately 1 2. 3. 4. 5.

Mental Health

Questions 119 (14e) and 120 (14f) scored 9, 4, 8, 12, 16, 20 (left to right)

Questions 111 (10) and 112 (11) scored 20, 16, 12, 8, 4, 0 (left to right)

Mental health score = (111-112) + (119-120) inclusive

Physical function

Questions 100 to 105 (4a to 4f) scored 9 for limited for more than three months and 0 for limited for less than three months and 16 for not limited at all to each question.

Physical function score = Questions 100 to 105 (4a to 4f) inclusive

Scoring the MOSI

Pain= Question 108 (5) which is scored: None=100, Very
 The scales are all made up as 0-100 with '100' representing
 Health and '0' ill health. Some of the statements are positive
 and some negative. The following points will help users score
 the MOSI. Question= Question 109(8) scored 0, 20, 40, 60, 80, 100
 (left to right)

General Health Perceptions

Questions 115 (14a) and 118 (14 d) scored 0, 5, 10, 15, 20
 (left to right)

Questions 116(14 b) and 117 (14 c) scored 20, 15, 10, 5, 0
 (left to right)

Question 99 (3) scored, Excellent=20, Very Good=16.8,
 Good=12.15,

Fair=4.95, Poor= 0 to allow for the unequal intervals in this
 question.

General health Perception score = Question 99 (3)+
 Questions 115 to 118 (14a to 14 d)

Mental Health

Questions 110(9), 112(11) and 114 (13) scored 0 ,4 ,8 ,12 ,16
 ,20 (left to right)

Questions 111(10) and 113 (12) scored 20 ,16 ,12 ,8 ,4 , 0
 (left to right)

Mental health score = Questions 110-114 (9 to 13) inclusive

Physical function

Questions 100 to 105 (4a to 4 f) scored 0 for limited for more
 than three months and 0 for limited for less than three
 months and 16 .67 for not limited at all to each question.

Physical function score=Questions 100 to 105 (4a to 4 f)
 inclusive

Pain - Depression Rating scale

Pain= Question 108 (5) which is scored: None=100, Very mild=75, Mild=50, Moderate=25, Severe=0.

Social Function

Social Function= Question 109(8) scored :0, 20, 40, 60, 80, 100 (left to right)

Role Function

Role function= Questions 106(6) and 107(7) , scored 50 for no limitation and 0 for any limitation of role function for less than or more than three months.

1. Very definitely and quite badly

2. Yes ,but not too badly

3. A little ,but it doesn't worry me

4. Not at all

121. Worrying things to go through my mind

1. A great deal of the time

2. A lot of the time

3. From time to time but not too often

4. Only occasionally

Anxiety -Depression Rating scale

Now some questions about your emotions and feelings.
To each of the following set of statements please say which comes closest to the way you've been feeling over the past week.

119..I feel tense or wound up

1. Most of the time
 2. A lot of the time
 3. From time to time ,occasionally
 4. Not at all

120.I get a sort of frightened feeling as if something awful is about to happen

1. Very definately and quite badly
 2. Yes ,but not too badly
 3. A little ,but it doesn't worry me
 4. Not at all

121.Worrying thoughts go through my mind

1. A great deal of the time
 2. A lot of the time
 3. From time to time but not too often
 4. Only occasionally

121. I can sit at ease and feel relaxed

1. Definitely

2. Usually

3. Not often

4. Not at all

122. I get a sort of frightened feeling like "butterflies" in my stomach.

1. Not at all

2. Occasionally

3. Quite often

4. Very often

123. I feel restless as if I have to be on the move

1. Very much indeed

2. Quite a lot

3. Not very much

4. Not at all

124. I get sudden feelings of panic

1. Very much indeed

2. Quite a lot

3. Not very much

4. Not at all

125. I still enjoy the things I used to enjoy

1. Definitely as much
2. Not quite so much
3. Only a little
4. Hardly at all

126. I can laugh and see the funny side of things

1. As much as I always could
2. Not quite so much now
3. Definitely not so much now
4. Not at all

127. I feel cheerful

1. Not at all
2. Not often
3. Sometimes
4. Most of the time

128. I feel as if I'm slowed down

1. Nearly all the time
2. Very often
3. Sometimes
4. Not at all

Locus of control

Please consider these statements and tick the box depending on how much you agree or disagree with the statements. There are no right or wrong answers. Tick a box on each.

129. I have lost interest in my appearance

- 1. Definitely
- 2. I don't take so much care as I should
- 3. I may not take quite as much care
- 4. I take just as much care as ever

Strongly Disagree Disagree Disagree Agree Agree Strongly Agree

130. I look forward with enjoyment to things

- 1. As much as I ever did
- 2. Rather less than I used to
- 3. Definitely less than I used to
- 4. Hardly at all

131. I can enjoy a good book or TV programme

- 1. Often
- 2. Sometimes
- 3. Not often
- 4. Very seldom

135. Most things that affect my health happen to me by accident

Strongly Disagree Mostly Disagree Slightly Disagree Slightly Agree Mostly Agree Strongly Agree

1. 2. 3. 4. 5. 6.

136. Whenever I don't feel well I should consult a doctor

Strongly Disagree Mostly Disagree Slightly Disagree Slightly Agree Mostly Agree Strongly Agree

1. 2. 3. 4. 5. 6.

Locus of control

Please consider these statements and tick the box depending on how much you agree or disagree with the statements. There are no right or wrong answers. Please don't spend too long on each.

132. If I get ill it's my own behaviour which determines how soon I get well again

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

133. No matter what I do, if I am going to get ill I will get ill

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

134. Having regular contact with my Doctor is the best way for me to avoid illness

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

135. Most things that affect my health happen to me by accident

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

136. Whenever I don't feel well I should consult a doctor

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

143..The main thing that affects my health is what I myself do.

137...I am in control of my health

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

138..My family has a lot to do with my becoming ill or staying healthy

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

139...When I get ill I'm to blame

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

140..Luck plays a big part in determining how soon I will recover from an illness.

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

141.Doctors control my health

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

142.My good health is largely a matter of good luck

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

143..The main thing that affects my health is what I myself do.

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

144 ..If I take care of myself,I can avoid illness

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

145.When I recover from an illness it's usually because other people (for example doctors nurses family and friends) have been taking good care of me.

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

146..No matter what I do I'm likely to take ill.

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

147..If it's meant to be ,I will stay healthy

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

148..If I take the right actions I can stay healthy

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

149.Regarding my health I can only do what my doctor tells me to do

Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>

Appendix E

Approvals

The West Of Scotland General practice Ethical Committee and Glasgow Local Area Medical Committee gave approval to the project before it started.

The permission of the Kennishead Tenant Management Co-operative committee was given before starting.

Glasgow City Council Housing Department were informed of the project and gave it their support.

married
single never married

Marrn-Whitney test

Marital Status vs Anxiety (mean)

married
single never married

Marrn-Whitney test

Employment vs Health (mean)

Employment vs MOS (mean)

	GHP	PH	PH	PH	PH	PH
Working	75	75	75	75	75	75
Not working	65	65	65	65	65	65
p<	0.01	0.01	0.01	0.01	0.01	0.01

Results Section

Female unemployment

Kennishead 10% PH 10% PH 10% PH 10% PH 10% PH

Table of Statistical tests applied in results chapter with levels of probability

Results Section page 41

Age vs Area

Median Age Kennishead=31 years
 Median Age Pollokshaws=45 years
 Mann-Whitney test $p < 0.01$

Marital Status vs Mental health(MOSI).

	Mental health (medians)
married	72
single never married	76

Mann-Whitney test $p < 0.05$

Marital Status vs Anxiety and Depression(HAD)

	Anxiety (means)	Depression(means)
married	7.7	4.9
single never married	5.9	3.2

Mann-Whitney test $p < 0.05$

Employment vs Health Status(Combined Areas)

Employment vs MOSI(medians)Mann-Whitney

	GHP	Mental	Role	Social	Physical	Pain
Working	75	76	100	100	100	75
Not working	63	68	100	100	83	75
p <	0.01	0.05	0.05	0.05	0.05	0.05

Results Section page 42

Female unemployment vs Area

Kennishead 10% Pollokshaws 3% $\chi^2 p < 0.05$

Employment Status vs General Health Perceptions

	GHP(medians)
Working	73
Home full- time	65
Unemployed	63
Student	59
Retired	57
Temp sick	45
Caring forsick	45
Perm sick	20

Kruskall-Wallis test $p < 0.05$

Results Section page 43Loss of Job due to health vs Area

Kennishead 12% Polloshaws 8% $x^2 p < 0.05$

Left a job due to health vs MOSI (medians)(Combined Areas) Mann-Whitney

	N	GHP	MH	role	social	physical	pain
Yes	39	33	60	50	80	67	25
No	332	73	72	100	100	100	75
p<		0.001	0.005	0.05	0.05	0.05	0.01

Smoking versus self-reported health(Combined)Kruskall-Wallis

cigs / day	N	ghp	mh
none	174	70	76
0-5	19	63	64
6-10	28	70	76
11-15	49	73	68
16-20	70	73	64
21-25	15	48	60
26+	17	48	56
K/W		N/S	$p < 0.02$

Results Section page 44Health status between areas

(Medians of MOSI)	Kennishead	Pollokshaws
General Health Perceptions	67.9	70.1
Mental Health	72.0	72.0
Role Function	100.0	100.0
Social Fuction	100.0	100.0
Physical Function	100.0	100.0
Pain	75.0	75.0
Anxiety	7.0	6.0
Depression	4.0	4.2

Mann -Whitney test.All not signifigant.

Results Section page 45Attendders vs Social and Physical health (MOSI)Medians and Means

	N	Social mean	Social median
attender	52	90.8	100
non- attender	137	83.9	100
	N	Physical mean	Physical median
attender	52	86.2	100
non- attender	137	79.6	100

Mann-Whitney Analysis : Both non-signifigant

Multiple regression using factors:

Age,marital status,employment,chronic disease,loss of job due to illhealth,children,dampness in the flat

$p < 0.05$ for both physical and social health

Attendders vs Anxiety and Depression

	N	anxiety mean	anxiety median
attender	52	5.5	6.0
non-attender	137	7.9	8.0

Mann-Whitney $p < 0.001$ (diff2, 95% c.i.diff 1-3)

	N	depression mean	depression median
attender	52	3.6	3.0
non-attender	137	5.0	4.0

Mann-Whitney $p < 0.02$ (diff1, 95% c.i.diff 0-2)

Multiple regression using factors:

Age,marital status,employment,chronic disease,loss of job due to illhealth,children,dampness in the flat $p < 0.05$

Mental health (MOSI) by attendance

Attenders those who attend regularly or occasionally and non-attenders those who attend rarely or never.

	N	MH mean	MH median
attender	52	71.8	76.0
non-attender	137	65.5	68.0

Mann-Whitney $p < 0.05$ (Diff 4, 95% c.i. diff 0-12)

Multiple regression using factors:

Age, marital status, employment, chronic disease, loss of job due to illhealth, children, dampness in the flat Not significant

Attenders vs Age

	N	Age Mean	Age Median	Minimum	Maximum
attenders	52	44.3	47.0	19	81
non-attenders	137	37.9	30.0	17	81

Mann-Whitney $p < 0.05$

Attenders vs Marital Status

	attenders(%)	non-attenders
single	9 (19%)	36 (26%)
married	25 (52%)	73 (52%)
divorced	10 (21%)	17 (12%)
widowed	8 (17%)	11 (10%)

χ^2 $p < 0.05$

Attenders vs Employment Status

Are you working?

	Attenders	Non-attenders
Yes	23 (48%)	52 (40%)
No	29 (52%)	85 (60%)

χ^2 $p < 0.05$

Time in Flats

Time in Flat	n	Mean	Median
Attenders	52	8.6	5.0
Non-attenders	137	7.5	4.0

Mann-Whitney $p < 0.05$

Results Section page 47Overall how satisfied? vs Attendance

	Attenders	Non-attenders
Very Happy	42%	16%
Quite Happy	42%	53%
Not sure	6%	8%
Quite unhappy	8%	10%
Very unhappy	2%	12%

x^2 $p < 0.05$

Are you waiting for transfer ? vs attendance

	Attenders	Non-attenders
Yes	21%	33%

x^2 $p < 0.05$

Results Section page 48Chance of changing councils mind

	attenders	non-attenders
Good	24%	7%
Fair	46%	49%
No-chance	27%	42%

x^2 $p < 0.05$

Results Section page 49Membership vs Anxiety and Depression (HAD)

	N	anxiety mean	anxiety median
member	48	5.6	5.0
non-member	141	7.8	8.0

Mann-Whitney $p = 0.09$ (diff 4, 95% c.i.diff 0-12)

	N	depression mean	depression median
member	48	3.6	3.0
non-member	141	4.9	4.0

Mann-Whitney $p < 0.02$ (diff 1, 95% c.i.diff 0-2)

Multiple regression using factors:

Age, marital status, employment, chronic disease, loss of job due to illhealth, children, dampness in the flat Not significant

Results Section page 50Time in Flats vs Area

Median Kennishead 4.5 yrs Median Pollokshaws 17 years

Mann-Whitney $p < 0.001$

Waiting Time for Flats vs Area

Median Kennishead 2 months Median Pollokshaws 9 months

Mann-Whitney $p < 0.01$

Floor vs MOSI

Floor	GHP	MH(Medians)
1-5	63	72
6+	70	72
	n/s	n/s(Mann-Whitney)

Perceived problems vs Area

Perceived problems in area (% saying yes to each problem) χ^2 test

	All	Kenn	Poll	p(sig only)
Vandalism	70%	57%	84%	<0.05
Litter and rubbish	68%	67%	69%	
Bad smells	43%	48%	37%	<0.05
Muggings / Assaults	34%	31%	38%	
Burgularies	72%	71%	73%	
Lack of safe	66%	58%	75%	<0.05

playspaces for
children

Results Section page 51Actual Crime vs Area

	All	Kenn	Poll
Vandalism	7%	6%	8%
Muggings / Assaults	10%	12%	9%
Burgularies	22%	24%	19%

Actual Crime vs Health Status

	GHP	MH	Anxiety
Victim	48	64	10
not	70	72	6
Mann-Whitney $p <$	0.001	0.01	0.02

Satisfaction vs Area

Overall how satisfied?

	All	Kenn	Poll
Very Happy	21%	23%	20%
Quite Happy	49%	50%	48%
Not sure	9%	8%	9%
Quite unhappy	11%	10%	13%
Very unhappy	10%	10%	10%

 x^2 Trend only $p < 0.1$ Transfer request vs Area

Waiting list for transfer

	Yes	No
All	39%	61%
Kenn	30%	70%
Poll	49%	51%

 x^2 $p < 0.01$ Results Section page 52Damp Unusable rooms vs MOSI/HAD

	GHP	Phys funct	Anxiety
Yes	53	75	9
No	70	100	6
Mann-Whitney $p <$	0.01	0.05	0.05

Damp Affected room vs MOSI/HAD

(Means of MOSI)	Damp	not
General Health Perceptions	58	65
Mental Health	60	70
Role Function	79	80
Social Function	82	85
Physical Function	75	81
Pain	50	63

Anxiety	10	6
Depression	5	3
All Mann-Whitney $p <$	0.05	

Results Section page 53Damp Affected rooms vs GP consultations

	Damp	None
None	51 %	57%
1	23 %	28%
2	16%	9%
3+	10 %	7%

(p<0.05 ,x²)Perceived Waiting time for repairs vs Area

For how long:

-excl. not waiting	Medians	Means
Kennishead (n=30)	7.5 months	17 months
Pollokshaws(n=65)	12 months	24 months

Mann-Whitney test p>0.05(difference not statistically significant but trend-95% ci of diff -1 to9)

Results Section page 55Political Efficacy vs Area

What chance do you think you would have of making the council change it's mind?

	Kenn	Poll	
Good	12%	7%	
Fair	48%	39%	
No chance	40%	54%	(p=0.01 x ²)

Results Section page 57Number of Friends vs General health perceptions MOSI

	GHP
One or none	50
Two or more	73

Mann -Whitney test p<0.01

Frequency of Friends vs Mental health

	Median MH
Several times a week	76
About once a week	72
About once a month	68
About once every three months	60
Once in a while(once or twice a year)	60
Never or rarely	56
Kruskall-Wallis p<0.05	

Results Section page 58Chronic illness vs MOSI (medians)

	N	GHP	Mental	Role	Social	Physical	Pain
Chronic illness	177	50	64	100	100	83	50
None	195	80	76	100	100	100	100

Mann-Whitney p< 0.01 0.01 0.05 0.05 0.02 0.01

Hospital attendance vs MOSI (medians)

	N	GHP	Mental	Role	Social	Physical	Pain
Hospital	93	58	64	100	100	83	50
None	278	73	72	100	100	100	75

Mann-Whitney p< 0.02 0.05 0.05 0.05 0.03 0.05

Casualty attendance vs MOSI (medians)

	N	GHP	Mental	Role	Social	Physical	Pain
Casualty	46	53	64	100	100	83	50
None	325	73	72	100	100	100	75
Mann-Whitney p<	0.05	n/s	n/s	n/s	n/s	0.05	n/s

On medication vs MOSI (medians)

	N	GHP	Mental	Role	Social	Physical	Pain
Medicine	198	58	68	100	100	83	50
None	174	78	76	100	100	100	100
Mann-Whitney p<	0.01	0.04		0.05	0.05	0.05	0.01

Any consultations in last 4 weeks vs median MOSI scores

	n	GHP	Mental	Role	Social	Physical	Pain
No	208	74	76	100	100	100	75
Yes	164	58	68	100	100	83	50
MW p<		0.01	0.05	0.05	0.05	0.05	0.05

Results Section page 59Number of consultations in last 4 weeks vs median GHP (MOSI) scores

consultations	N	GHP
0	208	74
1	102	61
2	35	53
3	16	46
4	5	83
5	2	40
6	4	44

K-w $p < 0.05$ Results Section page 60Likelihood to visit a GP vs MOSI

Behaviour vs MOSI (median)

	N	GHP	Mental	Role	Social	Physical	Pain
less likely	115	65	68	100	100	100	50
more likely	173	63	72	100	100	100	75
Mann-Whitney $p <$		0.05	0.05				0.05