

ORIGINAL ARTICLE

Predictors of re-employment and quality of life in NHS staff one year after early retirement because of ill health; a national prospective study

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Aims: To measure changes in health related quality of life and employment status of NHS staff one year after early retirement because of ill health, and to identify predictors of re-employment.

Methods: A national cohort of 1317 NHS staff taking early retirement because of ill health in 1998 was recruited. Postal questionnaires were used to assess their quality of life (SF-36) and employment status 12 months after retirement.

Results: A total of 1143 (87%) ill health retirees responded; 152 (13%) retirees were working at one year, mostly part-time, and 22% of them were re-employed by the NHS. Independent predictors of re-employment were: living in England rather than Wales and occupation of doctor. There was an increased likelihood of re-employment with reducing age and increasing quality of life at baseline. Retirees' quality of life improved from baseline to one year after ill health retirement, but at one year still remained lower than the general population. Improvements in physical and mental component scores were greater in those working at one year compared with those not working.

Conclusion: Reducing ill health retirement is likely to be of benefit to the individual, the NHS, and the economy. Results suggest that such a reduction may be possible and the identified predictors of re-employment may help in this process.

The National Health Service (NHS) is the largest UK employer, with over one million staff.^{1,2} Every year approximately 0.5% of the NHS workforce is retired early because of ill health.³ While the criterion for ill health retirement is illness which will prevent staff from doing their normal work until retirement age, once retired the pension scheme does allow an individual to seek alternative work. No adjustments are made to their pension unless they return to work in the NHS and their new earnings plus pension exceed their old NHS salary.⁴

In a previous paper we described a sample of two thousand NHS staff at the time of their ill health retirement in 1998.⁵ To address the lack of information on health and employment status following ill health retirement, we followed up our cohort one year later. We compared their quality of life at retirement with that of the general population, looked for predictors of re-employment at one year, and measured the change in quality of life over the year.

We aimed to identify staff for whom job modification or re-deployment could be an alternative to ill health retirement.

METHODS

Sample

We wrote to the first 2000 of 5469 NHS staff awarded ill health retirement in 1998 (April–August) in England and Wales. Of these, 1317 (66%) agreed to participate one year later in our follow up study; they received a postal questionnaire and up to two reminders.

Measures

Staff were allocated to occupational groups according to their job title at time of retirement. Social class was coded as non-manual (classes I, II, and IIInm), for example, doctors, nurses, and administrators, or manual (classes IIIm, IV, and V),⁶ for example, healthcare assistants and ambulance workers. We asked all participants about their current

employment status and, if employed, the reason for returning to work, type of employment (full-time/part-time), and job title.

At the time of retirement, and again one year later, participants were asked to complete the UK version of the Short Form (SF-36) questionnaire, an internationally recognised and validated measure of health-related quality of life.⁷ This contains 35 items which measure eight dimensions on a 0–100 scale: physical functioning, role limitation due to physical problems, bodily pain, general health perceptions, energy/vitality, social functioning, role limitation due to emotional problems and mental health. The eight scale scores are used to calculate two summary measures, the physical and mental component scores, each having a general population norm of 50 points and a standard deviation of 10.⁸ Higher scores indicate better quality of life. There is one additional question on health change over the past year.

We compared the SF-36 scores in ill health retirees with those obtained from a sub-sample of the general population interviewed in the Health Survey for England 1996.⁹ We applied our cohort's age limits (26–64 years) to the general population dataset and selected the records with complete SF-36 data.

Statistical analysis

We used chi-squared and unpaired t-tests to test differences in categorical and continuous variables between subgroups.

Multiple linear regression models provided differences in quality of life between our cohort (one year after retirement) and the general population of England, adjusted for baseline sociodemographic confounders: age group, sex, social class, type of employment, marital status and ethnicity. We also measured the change in quality of life scores from baseline to one year in the whole cohort as well as separately for retirees who were re-employed at one year and those who were not. Multiple linear regressions were used to compare the change

Main messages

- Thirteen per cent of NHS staff retired early because of ill health are back in work one year later.
- Most of these find part-time work, having been retired from full time NHS posts.
- If ill health retirement could be avoided in this group by more flexibility and redeployment options, the NHS pensions agency would save approximately £54 million in additional pension payments annually.
- Resumption of work can be predicted by country of residence, occupation, age, and mental and physical quality of life.

in quality of life between these two subgroups after controlling for baseline scores.

We investigated the likelihood of taking up employment within the first year following ill health retirement in relation to nine baseline factors. The possible predictors were: country of residence, ethnicity, sex, age, medical condition, occupation, financial dependants, and SF-36 summary scores of physical and mental quality of life. Age and quality of life summary scores were recoded into ordinal categorical variables (25–44, 45–54, 55–64 years, and less than 30, 30–49, 50 points or more, respectively).

The relative chance of re-employment was initially estimated by unadjusted odds ratios calculated for each predictive variable. Multiple logistic regression models including all possible predictors provided adjusted odds ratios and their confidence intervals. Tests for trend were used to identify significant linear changes in odds ratios across levels of ordinal categorical variables.

Confidence intervals were calculated with 95% probability. All tests were two sided and used a 0.05 level of significance. We used SPSS 10 for Windows for all statistical analyses.

Ethics approval was given by the Royal Free Hampstead NHS Trust Ethics Committee.

RESULTS

Response rate and bias

Of the 1317 retirees recruited at baseline, 1143 (87%) responded to our questionnaire survey one year after retirement. Quality of life analyses were performed for the 986 (75%) retirees who returned complete SF-36 questionnaires both at baseline and one year follow up. In all bias analyses of participants versus non-participants we found only small differences which, given the high response rate, are unlikely to affect the representativeness of our cohort. Table 1 shows that those who returned complete SF-36 questionnaires were similar to participants.

Sociodemographic and employment characteristics

Of the 1143 participants in our follow up study, 89% lived in England. Seventy three per cent were female and 27% were aged less than 50. While the mean number of years worked in the NHS was 21.5, retirees had a wide range of experience, from 2 to 43 years. Sixty eight per cent had worked as nurses, midwives, healthcare assistants, or support staff. Fifty two per cent were retired because of musculoskeletal problems (table 1).

Quality of life

Table 2 shows the SF-36 scores found in our cohort at baseline and one year follow up, and those calculated for the 10 582 participants in the Health Survey for England who

Policy implications

- A proportion of ill health retirements may be avoidable by waiting longer for recovery, offering redeployment, and flexibility in working hours.
- Reducing ill health retirement is likely to benefit the individual, the NHS, and the economy.

were aged 26–64 years. The retirees reported lower health related quality of life at baseline than the general population on all eight dimensions, in particular the scale measuring role limitations due to physical problems.

One year after retirement, our cohort had significantly better quality of life on all dimensions, compared with baseline. The scores for social functioning, role limitation due to physical problems, and role limitation due to emotional problems improved most, by 11, 12, and 15 points, respectively. On summary measures we found a small change in the physical component score (mean difference, 1.4 points; 95% CI 0.9 to 1.8) and a greater improvement in the mental component score (mean difference, 5.0; 95% CI 4.2 to 5.7).

Despite the improvement over the first year after retirement, our cohort still reported significantly poorer quality of life at follow up than the general population sample. After taking into account possible confounding sociodemographic factors, the adjusted differences between the general population and ill health retirees were 16.0 points (95% CI 15.3 to 16.6) and 7.7 points (95% CI 7.1 to 8.4) for the physical and mental component scores, respectively.

Table 1 Sociodemographic characteristics at time of ill health retirement for participants in the one year follow up and completers of SF-36 questionnaires at both times

Variable	Participated in follow up study (n = 1143)*	Answered all SF-36 questions (n = 986)*
Residing in England	1,017 (89)	876 (89)
Ethnicity, white	1,037 (91)	898 (92)
Female sex	829 (73)	712 (72)
Mean age, years (SD; range)	52.1 (7.3; 26–64)	51.8 (7.4; 26–64)
Age group		
25–34	42 (4)	39 (4)
35–44	118 (10)	108 (11)
45–49	151 (13)	140 (14)
50–54	321 (28)	279 (28)
55–59	393 (35)	329 (34)
60–64	118 (10)	91 (9)
Non-manual social class	748 (66)	666 (69)
Married/cohabiting	880 (77)	769 (78)
Financial dependants	322 (28)	286 (29)
Mean number of years worked in the NHS (SD; range)	21.5 (9.1; 2–43)	21.6 (9.1; 2–43)
Full-time employment	761 (68)	656 (68)
Occupational group		
Healthcare assistants/support staff	311 (28)	244 (26)
Nurses/midwives	443 (40)	391 (41)
Ambulance workers	51 (5)	44 (5)
Administrative/estates	183 (16)	163 (17)
Technical/professional	54 (5)	50 (5)
Doctors/surgeons	68 (6)	62 (6)
Diagnostic category		
Musculoskeletal	593 (52)	516 (52)
Psychiatric	194 (17)	173 (17)
Cardiovascular	130 (11)	104 (11)
Other	226 (20)	193 (20)

Values in brackets are percentages unless otherwise stated.

*For some variables the denominator was less than 1143 or 986 due to missing data (maximum 2%).

Table 2 SF-36 quality of life in ill health retirees at baseline and one year follow up versus the general population of England

Variable	Ill Health Retirement study* (n = 986)		Health Survey for England† (n = 10 582)
	Baseline	One year follow up	
Physical functioning	44.1 (27.0)	47.5 (27.5)	85.8 (22.5)
Role—physical	11.4 (27.6)	23.4 (35.9)	83.8 (32.9)
Bodily pain	37.3 (24.9)	43.3 (24.8)	78.1 (25.5)
General health	39.8 (19.7)	43.0 (21.7)	71.0 (21.4)
Vitality	32.7 (19.8)	38.7 (21.1)	63.5 (20.0)
Social functioning	41.7 (24.5)	53.0 (27.4)	86.2 (22.5)
Role—emotional	34.2 (42.2)	49.0 (45.1)	85.8 (30.9)
Mental health	54.9 (21.9)	62.3 (21.1)	75.4 (17.0)
Physical component score	31.0 (10.8)	32.4 (11.4)	50.4 (9.9)
Mental component score	38.6 (13.5)	43.6 (13.2)	51.0 (9.5)

Results expressed as mean score (SD).

*Sub-sample of retirees who answered all SF-36 questions at baseline and one year follow up.

†Sub-sample of respondents aged 25–64 years who answered all SF-36 questions of the Health Survey for England 1996.

Employment one year after ill health retirement

A total of 152 (13%) respondents were back in work one year after being retired from NHS employment. Twenty four were working full-time and 128 part-time. Seventy six per cent of those in part-time work had retired from full-time NHS jobs. The main reasons given for returning to work were: “I needed the money” (n = 65, 43%), “This job was more suitable” (n = 46, 30%), “My health improved” (n = 13, 9%), “I was bored at home” (n = 10, 7%), and “Other” (n = 13, 9%). Four respondents in the latter category gave reasons related to wanting to reintegrate into society. There were five (3%) non-respondents.

Of the 152 retirees who were working at one year, 66 (43%) gave a job title that was the same or similar to the one from which they had been retired. Thirty four (22%) respondents had been re-employed by the NHS with 16 in similar posts to those from which they had been retired.

Baseline predictors of re-employment at one year

On unadjusted analyses, re-employment at one year was significantly associated with country of residence, sex, age group, medical condition, occupation, financial dependants, and physical quality of life (table 3).

Multiple logistic regression analyses showed five variables as independent predictors of re-employment at one year. Those living in England were nearly three times as likely to return to work compared with those from Wales. There was a significant trend of increased likelihood of re-employment with reducing age and rising physical and mental quality of life scores. Compared with healthcare assistants/support staff, doctors were nearly four times as likely to regain employment. We found no evidence of independent associations between ethnicity, sex, medical condition, or financial dependants and employment status at one year.

One year change in quality of life by employment status

We compared the increase in quality of life from baseline to one year between those who returned to work and those who did not (fig 1). On unadjusted analyses, the difference did not appear to be significant for the mental health scale and the mental component score. However, once we adjusted for baseline scores, return to work was associated with greater

improvement in quality of life on all eight scales as well as the two summary scores. The improvements in physical and mental component scores were 3.4 points (95% CI; 2.1 to 4.7) and 3.2 points (95% CI; 1.3 to 5.1) greater in those who went back to work, respectively.

We also analysed the single SF-36 question on health change over the year since ill health retirement (table 4). Fifty seven per cent of retirees who were back in work perceived their health to be better at one year, compared with only 32% of those who were not working.

DISCUSSION

This is the first published study in the UK of re-employment patterns and quality of life in NHS staff retired early because of ill health. Given the potentially sensitive nature of the information that we were seeking, we did not ask detailed employment questions of those back in work. This has limited our ability to compare their new job with that from which they were retired; however, we achieved a high response rate (87%).

Thirteen per cent of the 1143 study participants were working one year after retirement. Based on the current NHS ill health retirement rates for England and Wales,³ this represents approximately 700 people annually. Most of our cohort returning to work were part-time, having been retired from full-time NHS posts.

Predictors of re-employment at one year

Baseline predictive factors of re-employment after ill health retirement were quality of life, age, occupational group, and country of residence. Not surprisingly, higher quality of life and younger age were independent predictors of re-employment. Fitter, younger retirees may be more motivated to look for work and are likely to be more attractive to potential employers. Doctors were nearly four times as likely to return to work as health care assistants and support staff. This may reflect more flexible working opportunities for highly skilled staff. The fact that living in England rather than Wales predicted return to work may be due to differences in national unemployment rates¹⁰ and geographical accessibility of jobs.

Quality of life

As expected, our cohort reported significantly impaired quality of life at the time of retirement, especially the dimension associated with role limitations due to physical problems. This suggests that the SF-36 is a sensitive measure of health related quality of life in our cohort. However, with no SF-36 data available on populations of NHS staff, we compared our cohort with the general population of England, adjusting for the usual sociodemographic confounders. NHS staff have high levels of psychological disturbance compared with many other industries.¹¹ This potential confounder may exaggerate the magnitude of the difference in SF-36 scores between our cohort and the comparison population.

The changes in SF-36 scores from baseline to one year were greatest for social functioning and the two scales measuring role limitations. This may reflect a better attitude towards early retirement, adaptability to long term ill health, or both.

Despite this improvement, quality of life remained considerably lower than in the general population, especially the physical aspect of it. This may reflect the large proportion of our cohort retired for musculoskeletal problems. The quality of life was poorer in our cohort even after accounting for differences in age, sex, social class, ethnicity, marital status, and type of employment.

Those working at one year after ill health retirement showed greater improvement in quality of life (physical and mental) than those not working. Our study cannot establish

Table 3 Baseline predictors of return to paid employment at one year after ill health retirement (n = 1095)

Variable	No. retired	No. back to work (%)	Unadjusted OR* (95% CI)	Adjusted OR† (95% CI)
Country				
Wales	120	6 (5)	1.0	1.0
England	975	140 (14)	3.2 (1.4 to 7.4)	2.7 (1.1 to 6.5)
Ethnicity				
Non-white	99	10 (10)	1.0	1.0
White	996	136 (14)	1.4 (0.7 to 2.8)	1.0 (0.5 to 2.2)
Sex				
Female	799	93 (12)	1.0	1.0
Male	296	53 (18)	1.7 (1.1 to 2.4)	1.1 (0.7 to 1.7)
Age group				
55–64 years	496	41 (8)	1.0	1.0
45–54 years	446	72 (16)	2.1 (1.4 to 3.2)	2.2 (1.4 to 3.4)
25–44 years	153	33 (22)	3.0 (1.8 to 5.0)	2.9 (1.6 to 5.2)
Medical condition				
Musculoskeletal	566	72 (13)	1.0	1.0
Psychiatric	184	36 (20)	1.7 (1.1 to 2.6)	1.1 (0.6 to 2.0)
Cardiovascular	124	15 (12)	0.9 (0.5 to 1.7)	0.8 (0.4 to 1.6)
Other	221	23 (10)	0.8 (0.5 to 1.3)	0.6 (0.4 to 1.1)
Occupational group				
Healthcare assistants/ support staff	307	23 (8)	1.0	1.0
Nurses/midwives	433	48 (11)	1.5 (0.9 to 2.6)	1.2 (0.7 to 2.1)
Ambulance workers	51	13 (26)	4.2 (2.0 to 9.0)	2.3 (1.0 to 5.4)
Administrative/estates	182	28 (15)	2.2 (1.2 to 4.0)	1.7 (0.9 to 3.2)
Technical/professional	54	11 (20)	3.2 (1.4 to 6.9)	2.0 (0.9 to 4.7)
Doctors/surgeons	68	23 (34)	6.3 (3.3 to 12.2)	3.7 (1.8 to 7.9)
Financial dependants				
No	789	90 (11)	1.0	1.0
Yes	306	56 (18)	1.7 (1.2 to 2.5)	1.0 (0.7 to 1.6)
Physical QoL: PCS score				
Less than 30	632	49 (8)	1.0	1.0
30–49	384	79 (21)	3.1 (2.1 to 4.6)	3.1 (2.0 to 4.8)
50 or more	79	18 (23)	3.5 (1.9 to 6.4)	3.2 (1.5 to 6.9)
Mental QoL: MCS score				
Less than 30	273	34 (13)	1.0	1.0
30–49	579	72 (12)	1.0 (0.6 to 1.5)	1.8 (1.1 to 3.0)
50 or more	243	40 (17)	1.4 (0.9 to 2.3)	2.8 (1.5 to 5.2)

*Unadjusted odds ratio (relative chance of being re-employed at 12 months) obtained from cross-tabulations.
 †Adjusted odds ratio obtained from a multiple logistic regression model including all variables.

a causal relation between this improvement and re-employment, as we do not know whether quality of life improved before or after returning to work. However, published literature on unemployment and poor health supports the latter.¹² In keeping with this hypothesis, only 9% of those who returned to work said that their main reason for returning was better health. More frequently, money and availability of a more suitable job were cited as the main reason. This is consistent with research showing that factors other than health status influence work attendance.^{13 14}

Implications

The finding that many ill health retirees regain employment within one year after retirement (one in five of these within the NHS) suggests that the NHS should find ways to offer such staff alternative work within their own organisation before recommending retirement on the grounds of ill health. This is especially important in the current climate of acute staff shortages in the NHS. At present, there are no formal arrangements to redeploy staff whose ill health prevents them continuing in their current posts. Such arrangements,

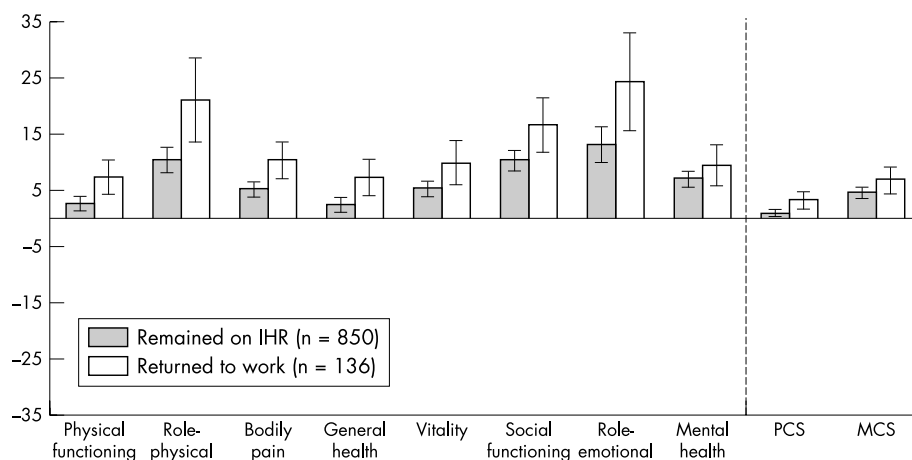


Figure 1 One year change in quality of life by employment status at follow up.

Table 4 Health change over the year following ill health retirement by employment status

Reported health change	Employed at one year		
	No (n = 982)	Yes (n = 150)	All* (n = 1132)
Much better now	80 (8)	32 (21)	112 (10)
Somewhat better now	234 (24)	53 (36)	287 (26)
About the same	351 (36)	47 (31)	398 (35)
Somewhat worse now	258 (26)	18 (12)	276 (24)
Much worse now	59 (6)	0 (0)	59 (5)

*This SF-36 question was answered by 99% of participants.

and an active programme of rehabilitation, have been advocated recently by the UK government.¹⁵ If the 700 retirees who regain employment at one year were instead retained within the NHS, we estimate a saving of £54 million in additional pension payments for each annual cohort of ill health retirees.³

A financial deterrent to accepting part-time working in the NHS is a fall in final pension entitlement. The finding that most of those re-employed are in part-time work suggests that successful re-deployment within the NHS will require more flexible working and pension arrangements. Re-deployment policies should first target individuals who, in this study, were found to be more likely to return to work. The SF-36 may be a useful tool in this process.

Reducing ill health retirement is likely to benefit the individual, the NHS, and the economy. Employment is associated with better individual material circumstances and health, and less demands on national welfare provision. Retaining staff within the NHS will help to reduce staff shortages and consequent problems in service delivery.

An important finding of this study is that for the majority, quality of life improved at one year. This may be encouraging news for staff facing ill health retirement in the future.

Further research could look at such cohorts several years following ill health retirement, to gain more information about their new jobs and functioning. Such work could help inform future interventions and policy.

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