

## SHORT REPORT

# Social mobility over the lifecourse and self reported mental health at age 50: prospective cohort study

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**Study objective:** To investigate the effect of socioeconomic status throughout the lifecourse on self reported mental health at age 50 years.

**Design:** Prospective cohort study

**Setting:** Community setting in Newcastle upon Tyne, north east England.

**Participants:** 503 subjects from a birth cohort assembled in 1947 who completed the 28 item version of the general health questionnaire (GHQ-28).

**Main results:** There was an association between socioeconomic group at birth and reporting a clinically significant GHQ-28 score at age 50 (OR 5.5 95% CI 1.2 to 25.4 comparing the least with the most advantaged socioeconomic group). A downward socioeconomic trajectory over the whole lifecourse was associated with poorer self reported mental health in men ( $p < 0.001$ ) but not women ( $p = 0.8$ ).

**Conclusions:** Socioeconomic position throughout the lifecourse may act differently on mental health at middle age depending on a person's sex.

It has been postulated that changes in socioeconomic status over the lifecourse and “cumulative poverty” may be more strongly associated with poor psychological wellbeing than individual circumstances.<sup>1</sup> There are opportunities for both “social causation” and “social selection” to contribute to such a finding. Social causation theory hypothesises that people who experience the stress of reduced socioeconomic circumstances are more vulnerable to mental health problems than those who experience an improvement in their socioeconomic position or consistently maintain comparatively advantaged circumstances.<sup>2</sup> Conversely, social selection theory hypothesises that those members of society predisposed to, or experiencing, mental health problems would be more likely to maintain a disadvantaged socioeconomic position in society or demonstrate a tendency to downward social mobility as a result of impaired social and occupational functioning.<sup>3</sup> This impairment could be the result of the direct impact of mental disorder on psychological functioning or a pre-existing vulnerability factor for both mental illness and poor occupational achievement.

While there is evidence to support the action of both social causation and selection mechanisms in generating socioeconomic gradients in physical health, findings regarding social mobility over the lifespan and mental health have been more mixed: for example there have been conflicting reports on the effect of social class of origin on later mental health.<sup>4–7</sup> Moreover, while at least one study has reported a positive association between upward social mobility (positive change in socioeconomic circumstances over the lifecourse) and mental wellbeing in men, another has reported no effect of change in socioeconomic circumstances on mental health status in either men or women.<sup>8</sup> Previously data from the

Newcastle thousand families birth cohort have been analysed with respect to self reported physical health at age 50 years.<sup>9</sup> This cohort, born in 1947, has lived through the general increase in living standards that occurred in Britain in the decades after the second world war. This general improvement in conditions is reflected in a rise of average life expectancy at birth of just over 8.5 years in both men and women for the period 1950–1998.<sup>10</sup> However, from the late 1970s onwards there was a large scale shift that increasingly moved the United Kingdom from a manufacturing to a service based economy. This contributed to a reduced employment rate among men (particularly during the 1980s) and, conversely, an increased employment level among women, usually occupying service industry jobs. This trend has been most pronounced in areas such as north east England, which includes the city of Newcastle upon Tyne, where the local economy has traditionally relied on skilled and semi-skilled manual occupations, predominantly performed by men, with implications for traditional sex defined social roles.<sup>11</sup> However, while this may suggest downward mobility among men in general during this time, this birth cohort displays primarily upward social mobility throughout the first 50 years of life. This paper reports on the effect of socioeconomic status over the lifecourse on self reported mental health, thus adding to the limited literature in this area.

## METHODS

The Newcastle thousand families study is a cohort study of all 1142 people born in May and June 1947 to mothers resident in Newcastle upon Tyne, UK. This cohort has been followed up prospectively at intervals up to age 50 years.<sup>12</sup> Contemporaneous information on socioeconomic status was collected on occupational social class (registrar general's classification according to the most advantaged occupational social class within the household) by health visitors at birth and by self completion questionnaire at age 50 years.<sup>12</sup> At age 50, retrospective information was also collected in the questionnaire regarding occupational social class at age 25. Social class was collapsed into three groups because of small numbers in some social classes: group 1 (the most advantaged) consisted of those with an occupational social class of I or II; group 2 consisted of subjects recorded as social class III (both manual and non-manual); group 3 consisted of those classified as social class IV or V or unemployed (the least advantaged). Socioeconomic mobility was defined as the change between these groups.

Mental health at age 50 was rated using the 28 item version of the general health questionnaire (GHQ-28),<sup>13</sup> with total score used as the outcome measure. This instrument is designed to detect clinically significant mental health problems in a community population. Logistic regression was used to analyse the GHQ-28 scores, dichotomised by using the recommended cut off score of 24,<sup>14</sup> in relation to the socioeconomic variables. This cut off is reported to have an

**Table 1** Odds ratios, by sex, of reporting a clinically significant total GHQ-28 score at age 50 according to cross sectional measures of socioeconomic status

SES group	Men			Women		
	N (%)	OR (95% CI)	p	N (%)	OR (95% CI)	p
<b>At birth</b>			0.46			0.04
1	28 (12)	1.00		26 (9)	1.00	
2	134 (59)	0.85 (0.29 to 2.50)		179 (65)	4.15 (0.94 to 18.2)	
3	65 (29)	1.38 (0.45 to 4.26)		71 (28)	5.39 (1.17 to 24.8)	
<b>At age 25</b>			0.30			0.82
1	78 (34)	1.00		107 (38)	1.00	
2	114 (50)	1.72 (0.77 to 3.85)		140 (51)	1.18 (0.66 to 2.11)	
3	35 (15)	2.01 (0.72 to 5.65)		29 (11)	1.25 (0.49 to 3.16)	
<b>At age 50</b>			0.001			0.09
1	110 (48)	1.00		141 (51)	1.00	
2	81 (36)	3.06 (1.34 to 7.02)		79 (29)	1.98 (1.06 to 3.70)	
3	36 (16)	5.00 (1.93 to 12.9)		56 (20)	1.61 (0.79 to 3.29)	

84% specificity for a diagnosable mental illness.<sup>13</sup> Odds ratios (OR) and corresponding 95% confidence intervals (95%CI) are reported (using either social class group 1 or upward mobility as the reference group).

Ethical approval for the study was obtained from the appropriate local research ethics committees, and all participating study members gave their written informed consent.

**RESULTS**

Of the original cohort, 832 (86% of the surviving sample of 967 children who remained in Newcastle for at least the first year of the study) were traced at age 50. A total of 49 children died before the age of 15. A further 53 study members died between the ages of 15 and the age 50 follow up.

The GHQ-28 was completed by 224 men and 283 women (52% of the cohort followed up beyond the first year). The men in this sample were representative, in terms of social class at birth, of the men in the original cohort (p = 0.5) However, the women in this sample tended to have a more advantaged social class at birth when compared with the women in the original cohort not included in this study (p = 0.02).

Forty one (18%) men and 70 (25%) women had a clinically significant GHQ-28 score (that is, one exceeding 24). In women there was a significant association between social class group at birth and a clinically significant GHQ-28 score at 50 (table 1). In men there were significant associations between socioeconomic status at age 50 (table 1) and downward social mobility in the periods from birth to 50 years and from 25 to 50 years (table 2) and clinically

**What is already known**

There have been conflicting reports regarding the influence of both socioeconomic status at birth and social mobility throughout life on mental health in adulthood.

**What this paper adds**

Socioeconomic status at birth is associated with self reported mental health at aged 50 years in the women in this cohort, but not in the men. Men who had a downward socioeconomic trajectory both over the most recent 25 years and over their first 50 years reported significantly poorer mental health. This latter effect was not seen in women. Our findings suggest that the impact of socioeconomic deprivation on mental health differs between men and women, with women being more sensitive to disadvantage in childhood and men being more sensitive to lack of socioeconomic success.

significant GHQ-28 scores at age 50 years. No other significant associations were seen in either men or women.

**DISCUSSION**

We found evidence that socioeconomic status at birth is associated with self reported mental health at aged 50 years

**Table 2** Odds ratios, by sex, of reporting a clinically significant total GHQ-28 score at age 50 according to lifecourse measures of trajectories in socioeconomic status

SES group	Men			Women		
	N (%)	OR (95% CI)	p	N (%)	OR (95% CI)	p
<b>Birth to 25 years</b>			0.31			0.51
Upward	100 (44)	1.00		130 (47)	1.00	
Stable	95 (42)	0.92 (0.43 to 1.96)		122 (44)	0.71 (0.40 to 1.27)	
Downward	32 (14)	1.91 (0.75 to 4.85)		24 (9)	0.84 (0.31 to 2.28)	
<b>25 to 50 years</b>			0.05			0.21
Upward	120 (53)	1.00		145 (53)	1.00	
Stable	78 (34)	2.55 (0.93 to 6.99)		100 (36)	0.93 (0.48 to 1.86)	
Downward	29 (13)	4.16 (1.22 to 14.2)		31 (11)	1.68 (0.76 to 3.72)	
<b>Birth to 50 years</b>			0.001			0.74
Upward	57 (25)	1.00		63 (23)	1.00	
Stable	142 (63)	0.69 (0.30 to 1.62)		155 (56)	1.22 (0.69 to 2.18)	
Downward	28 (12)	4.32 (1.79 to 10.4)		58 (21)	0.92 (0.36 to 2.31)	

### Policy implications

- Poverty has long term impacts on the mental health of men and women and this should be taken into account of in estimating the benefits of economic support and regeneration.
- There is some evidence that the effects of deprivation throughout the lifecourse have differential effects on men and women.

in women, but not in men for whom socioeconomic status at age 50 was a significant factor. However, men who had a downward socioeconomic trajectory both over their last 25 years and over the first 50 years reported significantly poorer mental health. This latter effect was not seen in women.

The results for women must be regarded more cautiously than those for the men as the women who completed the GHQ-28 at age 50 years were significantly more likely to be from a higher social class group at birth. There are also difficulties in interpreting results using occupational social class in women, particularly for the many women for whom using the highest occupational social class in the household would result in them being assigned the socioeconomic status of a male partner (57% of women at age 25 and 41% at age 50 were assigned the occupational social class of their partner). For these women, while their assigned socioeconomic status may represent how advantaged or disadvantaged they are, it is possible that a difference in mental health may be seen between those women who have achieved an advantaged socioeconomic position in their own right and those who have achieved it through marriage.

According to our findings around twice as many women compared with men reported a reduction in their socioeconomic status between birth and age 50. Interestingly, this higher proportion of downwardly mobile participants did not result in the association with poorer mental health that was seen in men. The higher proportion of women reporting reduced socioeconomic status could partly have been attributable to the larger number of female participants included in the 50 year follow up who originated from more advantaged socioeconomic groups compared with the original birth cohort (reduced socioeconomic status would be more likely if you started in a higher group compared with the lowest group where, in effect, downward mobility would be impossible). In addition, it must be acknowledged that complex social phenomena may also be behind the sex differences seen in our results. For example, it has been reported that unemployment has a less profound effect on the health of women in middle age than men.<sup>15</sup> There is also evidence that marital status (never married/married/divorced/widowed) has associations with mental wellbeing that are sex specific.<sup>16</sup> Thus it may be that a complex interaction between social factors (such as marriage trends), the current definition of social class, and self reported mental health may be contributing to the sex differences we have reported. It could also be hypothesised, from our findings, that women are more sensitive than men to the early deficits in care associated with poorer socioeconomic status in very early childhood. It is also possible that some of the significant findings, particularly those of borderline statistical significance, in this investigation could be attributable to multiple significance testing.

Most of the data included in this study were collected prospectively. The only retrospective data included were the occupational social class data for age 25. While it is unlikely

that differential recall would influence our findings, this remains a possibility. It is also possible that study members of differing socioeconomic trajectories may have different response rates. It was not possible to assess this potential bias in this investigation.

It is probable that both "social drift" and "social causation" mechanisms are at work to produce the association between downward social class trajectory and poor reported mental health. It is also possible that male rather than female occupational functioning is more sensitive to their mental health status. Alternatively, men who experience reduced economic circumstances, perhaps through the loss of skilled and semi-skilled jobs that occurred in north east England during the 1980s and 1990s, may have suffered from loss of role identity and self esteem that could have had an impact on their perceived mental health.

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