# Partnership history and health and mortality in later life in England & Wales


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# Marital status and health

- Extensive literature shows marriage positively associated with health, especially among men.
- Married people generally have the best health, followed by the never-married and then the widowed; divorced generally the worst health (some variations by gender, age and place).
- Cohabitees and remarried seem to have worse health than those in first marriage, but better than unmarried; again some gender and place variations.

# Hypothesised mechanisms for links between marriage and health: selection, protection and devastation.

**Selection**

- Those in poor health or with unhealthy lifestyles less likely to marry, stay married or remarry. (N.B. those marrying unusually early may be 'selected' for lower SES).
- Concordance of risks 'assortive mating' may account for some of higher health risks of widowed.

**Devastation**

- Stress of bereavement and divorce –additional to loss of protection.

**Protection**

- Nagging, nurture and nutrition: control of unhealthy lifestyles; nursing when ill; provision of meals and other domestic services – probably especially important for men.
- Love and money: Socio-economic advantages (especially for women); emotional support; sexual expression.

# Marriage and health in later life

- Protection and devastation effects may potentially be stronger because of increased needs for support and care.
- Effects of widowhood seem worse for men possibly because for women widowhood may be an anticipated transition; alternative support networks may be available and in some cases death of a spouse may remove stresses of caregiving.-

# Objectives

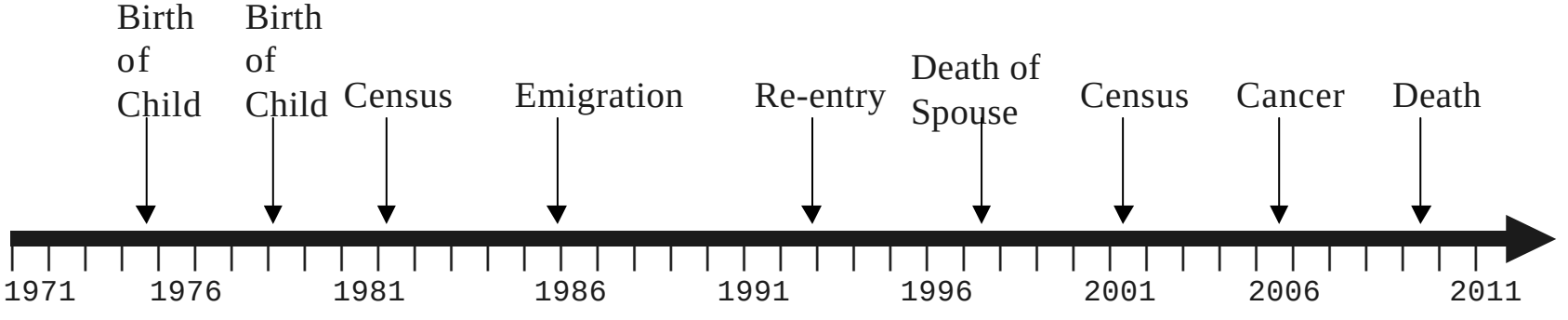
- Examine effects of long term ‘exposure’ to marriage on health and mortality in later life
- Examine effects of more recent change in marital status on health and mortality in later life
- Evaluate differences in order to see which appears more important
- Examine gender effects and effects of co-variation with SES.

# Marital history and health

- Many studies based on cross sectional data, but hypothesised effects are largely life course ones.
- Some longitudinal studies e.g. Willitts et al 2004 using British Household Panel Study found multiple transitions had adverse effects on mental health; Lund et al 2003 found cumulated periods of being divorced or widowed predicted mortality in Danish men; Ben-Shlomo et al 1993 in a 18 year follow up of British male civil servants found higher risks of cancer among divorced men and of IHD among widowers; Lee et al 2004 found behavioural changes associated with marital status changes in the US NHEFS.

# The ONS Longitudinal Study of England & Wales

- Census data for individuals with one of four birthdates enumerated at the 1971 Census (c. 1% of population)
- Maintained through addition of immigrants and new births with LS birth date
- Information from later censuses (1981, 91 & 2001) added
- Linked event data including death of the spouse of sample members and deaths of sample members.



# Marital status/history information in the ONS LS

- Marital status at census. In 1981, 1991 & 2001 question distinguished re-married from those in first marriage.
- In 1971 marital & fertility history data collected from ever-married women aged 16-59 so for women, but not men, we can distinguish re-married in 1971.
- Cohabitees here classed with married
- Event data on widow(er)hoods from linked vital registration records on deaths of spouses
- Event data on births to female LS members allowing calculation of parity (from 1971 census & linked births); excludes pre 1971 non marital births (c.4%).
- No registration data on marriage or divorce

# Study population

Male LS members aged **30-64** and female LS members aged **30-59** in 1971 traced in National Health Services Central Register (different age group for women because complete parity data not available for those aged 60+ in 1971).

- **1)Analysis of mortality 1981-91**

Sample members aged 30-59/64 in 1971 and still in study in 1981 (when aged 40-69/74).

- **2) Analysis of mortality 1991-2001**

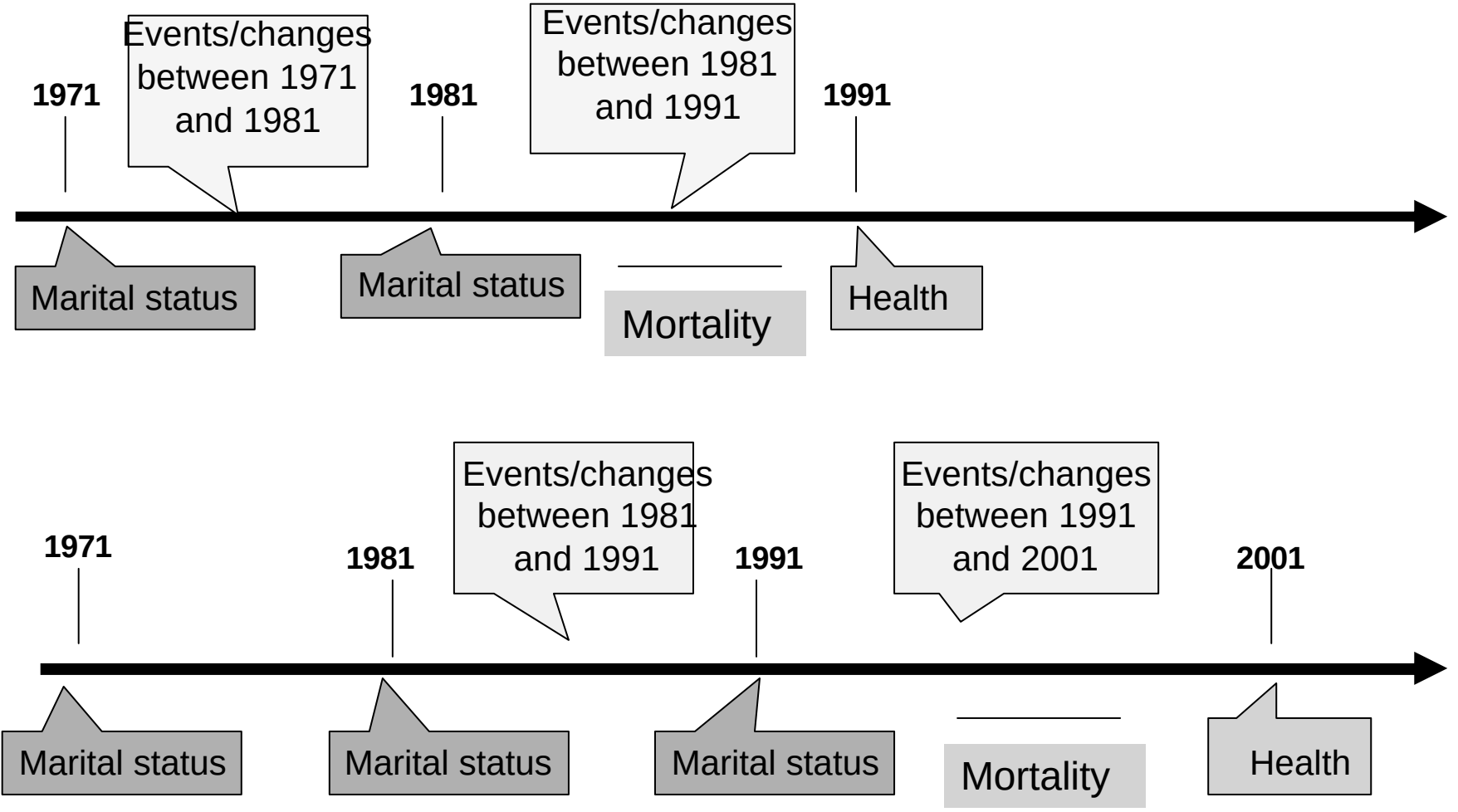
Sample members aged 30-59/64 in 1971 and still in study in 1981 and 1991 (when aged 50-79/84).

- **3) Analysis of longstanding illness and self-rated health in 2001 (logistic regression)**

Sample members aged 30-59/64 in 1971 and still in study in 1981, 1991 & 2001(when aged 60-89/94).

- **Exclusions**
  - those in communal establishments in 1971 (around 1%)
  - those not at usual residence at Census (around 2%)
  - Those known to have 'embarked' (emigrated) (< 1%) or lost to follow-up (mostly undocumented emigrants), c. 6-7% per decade.

# Analysis framework



# Outcome variables

- Mortality 1981-91 (by circumstances 1971 & 81)
- Mortality 1991-2001 (by circumstances 1971, 1981 & 1991)
- Longstanding illness and self rated health in 2001 (by circumstances 1971, 1981, 1991 & 2001).

# Co-variates used in the analysis:

## Men

- age
- score from housing tenure and access to car at census
- presence/absence "A'level" or equivalent/higher educational qualification (exam at c. 18)
- score from occupational social class at census

## Women

- age
- score from housing tenure and access to car at census
- presence/absence "A'level" or equivalent/higher educational qualification (exam at c. 18)
- parity

# Social class score derived from 1971 & 1981 information on occupational social class

- 1991 information not included because by then many men were retired
- Not derived for women because many out of the labour market

Assigned scores at each census:

- 0: Unemployed or otherwise not working
- 1: Employed in unskilled or semi skilled manual occupation (Registrar General's Social Class IV or V, e.g. labourer, bus driver)
- 2: Employed in skilled manual or skilled non-manual occupation, e.g. plumber, secretary)
- 3: Employed in Professional or Intermediate occupation (e.g. doctor, school teacher).
- Aggregated score derived from combining scores from each census; 0-1 grouped together giving final score of 0-1, 2,3,4,5 and 6.

# Tenure & car access score derived from 1971, 1981 (& 1991) census information

- Housing tenure and household car access well correlated with other SES indicators; indicator of wealth as well as income
- Useful SES discriminator for groups not in labour market

Assigned scores at each census:

- 0: non home owner; 1: home owner.
- 0: household has no car; 1 household has at least one car.

Scores summed to give range 0-4 (1971-81) or 0-6 (1971-91).

# Methods

- Discrete-time event history models of the risk of dying (time constant variables at start of observation and widowhood as time dependent variable) applied to:
  - Two time periods (1981-91 and 1991-01)

- Logistic regression of the probability of having limiting long term illness / poor fair self-rated health in [1991] and 2001

# Modelling strategy:

- Model 1 : age, marital status/marital score
- Model 2: age, marital status/marital score, control variables (SES & for women, parity).
- Model 3: age, marital status/marital score, control variables (SES & for women, parity) and marital change in past decade.
- Model 4: age, control variables and marital change in past decade.
- Model 5: age and marital change in past decade.

# Marital status & marital status change variables used in analysis of 1981-91 mortality

1971 marital status (married (ref.); never-married; divorced; widowed).

1971-81 change:

- Continuously married: married 1971 & 81, same spouse (ref.)
- Widowed between 1971 & 81
- Divorced between 1971 & 1981- i.e. those who were married in 1971 & divorced or re-married in 1981 with no widowhood event
- Residual –largely comprising the never-married.

# Marital score variables used in analysis of 1991-2001 mortality and 2001 health status

**Analysis of mortality 1991-2001**

Marital score indicating number of censuses (1971, 1981) at which the sample member was married:

- 2: married 1971 and 1981 (ref.)
- 1: married either in 1971 or 1981
- 0: unmarried in both 1971 and 1981.

**Analysis of health status 2001**

Marital score indicating number of censuses (1971, 1981, 1991) at which the sample member was married:

- 3: married 1971, 1981 & 1991(ref.)
- 2: married at two censuses
- 1: married at one census
- 0: unmarried in 1971, 1981 & 1991.

# Marital change variables used in analysis of 1991-2001 mortality and 2001 health status

1981-91 change:

- Continuously married: married 1981 & 91, same spouse (ref.)
- Widowed between 1981 & 91
- Divorced between 1981 & 1991- i.e. those who were married in 1981 & divorced or re-married in 1991 with no widowhood event
- Residual –largely comprising the never-married.

1991-2001 change:

- Continuously married: married 1991 & 2001, same spouse (ref.)
- Widowed between 1991 & 2001
- Divorced between 1991 & 2001 i.e. those who were married in 1991 & divorced or re-married in 2001 with no widowhood event
- Residual –largely comprising the never-married.

# Summary of associations of marital status/score & marital change with mortality

| *1981-91 mortality* | | Significant on own | Significant when SES controlled | Significant when marital status/marital change also controlled |
|---|---|---|---|---|
| Men | Marital status | Yes | Yes | No |
| | Marital change | Yes | Yes | Yes |
| Women | Marital status | Yes | No | No |
| | Marital change | Yes | Yes (wid+) | Yes (wid+) |
| *1991-2001 mortality* Men | Marital score | Yes | Yes | No |
| | Marital change | Yes | Yes | Yes |
| Women | Marital score | Yes | No | No |
| | Marital change | Yes | Yes | Yes |

# Summary of associations of marital score & marital change with health indicators in 2001

| ***2001 limiting longstanding illness*** | | **Significant on own** | **Significant when SES controlled** | **Significant when marital status/marital change also controlled** |
|---|---|---|---|---|
| **Men** | **Marital score** | **Yes** | **Yes (M2+)** | **No** |
| | **Marital change** | **Yes** | **No** | **No** |
| **Women** | **Marital score** | **Yes** | **Yes Married 1 census worst** | **No** |
| | **Marital change** | **Yes** | **No** | **No** |
| ***2001 self-rated health*** **Men** | **Marital score** | **Yes** | **Unmarried 3 censuses worse** | **No** |
| | **Marital change** | **Yes** | **No** | **Recent div. worse** |
| **Women** | **Marital score** | **Yes (unmarried 3 censuses best health)** | **Yes (unmarried 3 censuses best health)** | **Yes (unmarried 3 censuses best health)** |

# Conclusions

- The effects of marital status/score are confounded by socio-economic status, while the effects of changes in marital status are less affected i.e. one pathway from marital status to health is via SES
- Marital disruptions have a greater effect for men than for women (especially widowhood)
- Strong effect of marital duration for women on self-perceived health status
- SES changes marginally effects of MS for men
- SES changes substantially effects of MS for women