

# Understanding the impact of fertility history on health outcomes in later life

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# Background to the project on health in mid life

- the research draws on and extends work on reproductive histories and outcomes
- it is known that either not having children or the number of children (parity) are associated with specific health outcomes at mid and later life for women (Grundy 2009; Grundy & Kravdal 2007; Grundy & Tomassini 2005)

# Problems with civil birth registration data

Until recently civil registration data only records all previous births **within** marriage:

- question asked of married women when registering a birth is the number of previous children (alive & stillborn) by current & previous husbands
- back in 1977 - 90% within marriage (GROS 2008:64; 2010:10)
- more recently it misses a large percentage of births thus rendering the information inaccurate for generalising to all women

# Parity from ISD health data

## SMR02 maternity data

- this project uses NHS health data from the Scottish Morbidity Record (SMR) maternity dataset (SMR02) to estimate parity for all women
- SMR02 is available from 1975, meaning for unbiased complete fertility history the sample must be born after 1959 (1975-16)
- to demographers parity refers to the previous number of children a woman has
  - ie a woman having her first child was at parity zero

# SLS cohort

- SMR02 is available from 1975, meaning for complete fertility history the sample must be born **after 1959** (1975 less 16) & be able to follow after childbearing ages ~45+
- the SLS cohort for the analysis are born 1959-1965 aged ~46-52 in 2011
- using 1991 Census information to estimate living conditions at around the time of peak fertility - aged ~26-32 in 1991

# Measures of mental health

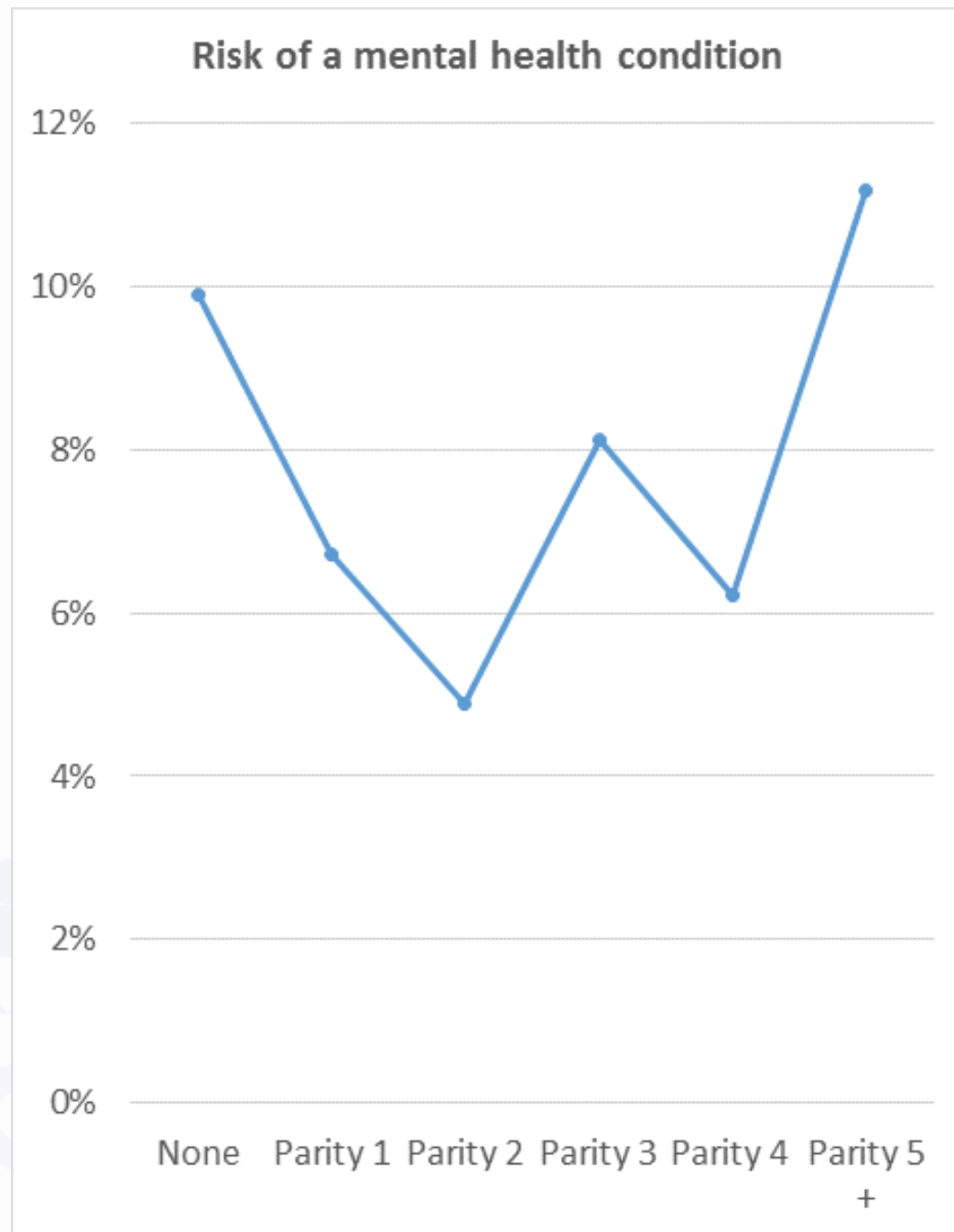
- 2011 Nature of Health Condition:  
*“Do you have any of the following conditions which have lasted, or are expected to last, at least 12 months?” “A mental health condition”*
- SMR04 admissions - Mental Health Inpatient & Day Case dataset

# Exploratory data analysis

## Mental Health

Parity measure from ISD (cleaned)	Nature Health Cond: Mental Health		
	No	Yes	Total
parity of 2 (reference for modelling)	3,250	159	3,409
	95.34	4.66	100
None (no kids)	2,628	260	2,888
	91.00	9.00	100
parity of 1	1,206	81	1,287
	93.71	6.29	100
parity of 3	1,393	113	1,506
	92.50	7.50	100
parity of 4	386	24	410
	94.15	5.85	100
parity of 5 & over	161	18	179
	89.94	10.06	100
<b>Total</b>	<b>9,024</b>	<b>655</b>	<b>9,679</b>
	<b>93.23</b>	<b>6.77</b>	<b>100</b>

Pearson chi2(5) = 52.1360 Pr = 0.000





# Exploratory data analysis using SMR04 admissions

(Mental Health Inpatient & Day Case dataset)

Ever had a SMR04 admission (ISD)	Nature Health Cond: Mental Health		
	No	Yes	Total
No	8,878	497	9,375
	<i>94.70</i>	<i>5.30</i>	<i>100</i>
Yes	146	158	304
	<i>48.03</i>	<i>51.97</i>	<i>100</i>
Total	9,024	655	9,679
	<i>93.23</i>	<i>6.77</i>	<i>100</i>

Pearson  $\chi^2(1) = 1.0e+03$  Pr = 0.000

# Preliminary results

- 2011 Nature of Health Condition: mental health condition

*Do you have any of the following conditions which have lasted, or are expected to last, at least 12 months? mental health condition*

- All women – by relationship status (single, cohabiting or married)

# Mental health condition using relationship status married, single (including single parent) & cohabiting

ALL WOMEN 0/1 Mental Health 2011	OR N=9679	SE	OR N=9679	SE	OR N=9679	SE	OR N=9679	SE	OR N=9679	SE	OR N=9679	SE
<b>Parity measure from SMR02 (cleaned)</b>												
<i>parity of 2 (Ref Cat)</i>												
None	2.022***	[0.210]	1.576***	[0.182]	1.564***	[0.181]	1.585***	[0.183]	1.579***	[0.183]	1.575***	[0.183]
parity of 1	1.373*	[0.193]	1.258	[0.187]	1.236	[0.184]	1.271	[0.190]	1.284	[0.192]	1.269	[0.191]
parity of 3	1.658***	[0.211]	1.626***	[0.218]	1.613***	[0.216]	1.514**	[0.205]	1.426**	[0.194]	1.418*	[0.193]
parity of 4	1.271	[0.287]	1.084	[0.260]	1.062	[0.256]	0.924	[0.224]	0.803	[0.197]	0.789	[0.194]
parity of 5 & over	2.285**	[0.598]	1.813*	[0.515]	1.718	[0.490]	1.519	[0.433]	1.282	[0.370]	1.249	[0.361]
<b>SMR04 Admission</b>			18.26***	[2.298]	17.61***	[2.225]	16.52***	[2.109]	16.05***	[2.066]	16.20***	[2.093]
<b>Living arrangements in 1991 (ie around time of peak childbearing ages 26-32)</b>												
<i>Married (Ref Cat)</i>												
Single (including single parent)			1.719***	[0.167]	1.704***	[0.165]	1.414***	[0.142]	1.374**	[0.138]	1.320**	[0.134]
Cohabiting			1.283	[0.202]	1.279	[0.202]	1.179	[0.189]	1.157	[0.186]	1.123	[0.182]
<b>Year of Birth</b>			0.977	[0.0248]	0.98	[0.0249]	0.98	[0.0250]	0.989	[0.0254]	0.987	[0.0254]
<b>Highest Level of highest qualification (if missing in 1991 take from 2001)</b>												
<i>Low or None (Ref Cat)</i>												
Other Higher Qualifications (non-degree)					0.579**	[0.0967]	0.738	[0.126]	0.8	[0.154]	0.818	[0.158]
First Degree and Higher Degree					0.529**	[0.103]	0.72	[0.144]	0.768	[0.167]	0.802	[0.175]
<b>HH tenure Based on 1991</b>												
<i>Owner occupier (Ref Cat)</i>												
Social rented LA HA New Town etc (Council)							1.983***	[0.194]	1.708***	[0.178]	1.465**	[0.173]
Private renting							1.096	[0.265]	1.039	[0.252]	1.023	[0.249]
Other -with job or Lives rent free etc							1.328	[0.428]	1.245	[0.403]	1.234	[0.401]
<b>Social Class 3 cats Based on 1991</b>												
<i>social class I &amp; II (Ref Cat)</i>												
class IIIN & IIIM+forces									0.941	[0.137]	0.946	[0.138]
social class IV & V									1.185	[0.189]	1.166	[0.187]
missing (any reason)									1.845***	[0.307]	1.794***	[0.299]
<b>Dep Quintile (Carstairs Pop Weighted)</b>												
<i>1 least (Ref Cat)</i>												
2											1.490*	[0.259]
3											1.38	[0.247]
4											1.490*	[0.269]
5 most											1.826**	[0.340]

# Mental health condition using relationship status married, single (including single parent) & cohabiting

SMR04 admission

Single (including single parent)\*

Social rented

Missing

Area deprivation

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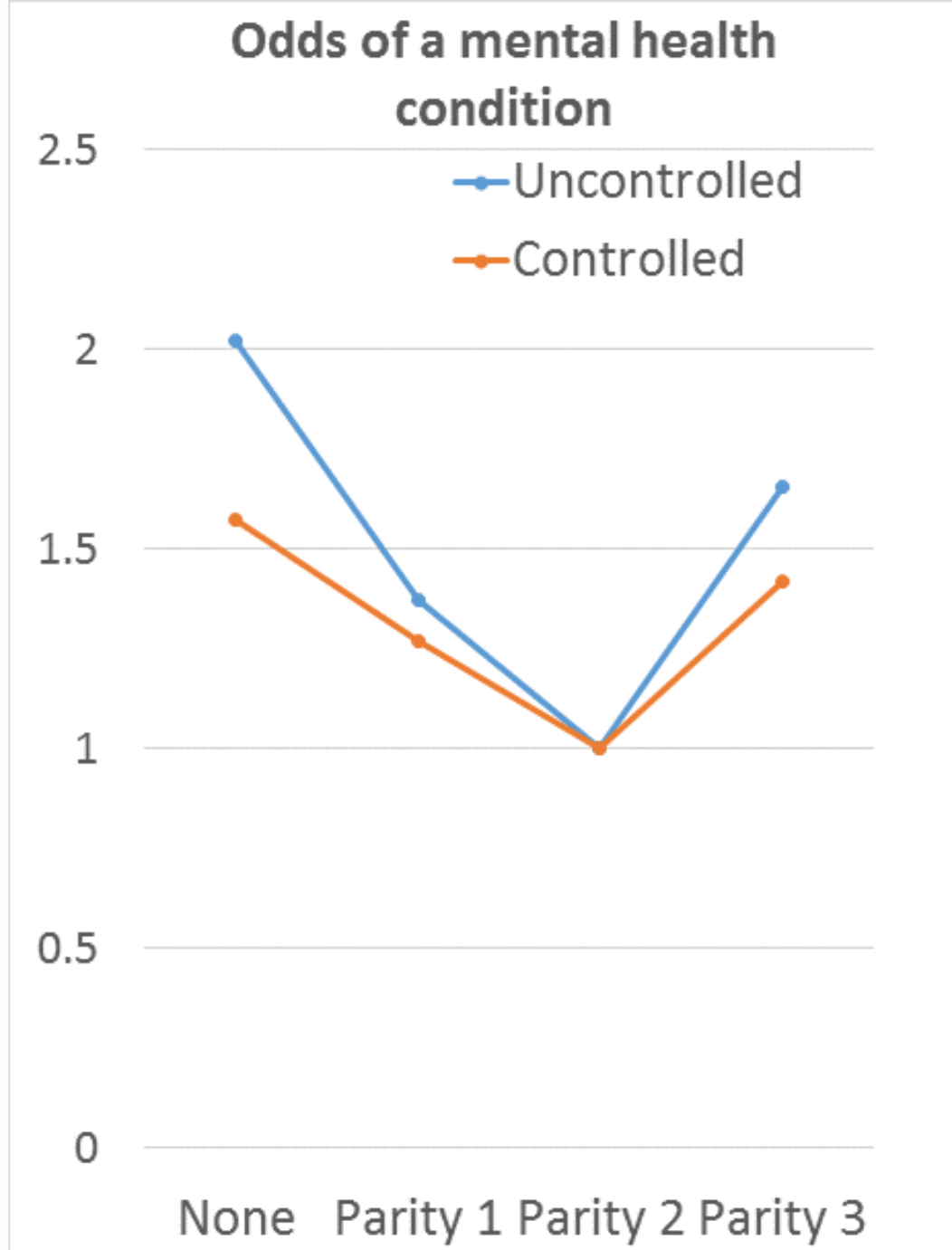
16.20\*\*\*

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1.465\*\*

1.794\*\*

1.826\*\*



# Conclusions

- Does not seem to be confounded by:
  - socio-economic risk factors
  - a serious long-term mental health condition
- Unmeasured selection effect?
- Biological – evolutionary explanation?
- Gendered social – structural explanation?

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