

Belief and Locus of Control (LOC) in a large birth cohort study: initial observations and research priorities.

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What is Locus of Control (LOC)?

LOC of reinforcement is a construct measured on a continuum (Rotter, 1966) where the more individuals perceive connections between their behavior and outcomes the more “**internal**” they are, in contrast to “**externals**” who view their outcomes as being determined by fate/chance/powerful others. Internals are more likely to succeed in every aspect of life, adhere to clinical instructions and, on average, live for 8 years longer than Externals. The lower the LOC score – the more internal.

Previous (mainly small cross-sectional) research on Religious/Spiritual Beliefs & Behaviours (**RSBB**) and health, and LOC and health has shown both to be associated with positive physical and mental health outcomes, but much is contradictory.

Aims: To elucidate the complex mechanisms between RSBB and LOC and how these influence aspects of health and well-being over the lifespan.

ALSPAC (Avon Longitudinal Study of Parents & Children)

14541 pregnant women delivering 1991-1992 were enrolled (www.bristol.ac.uk/alspac).

To determine environmental and genetic factors associated with the development, health, and well-being of the resulting offspring. Intensive follow-up via self-completion questionnaires, hands-on assessments, record linkage and biological samples to mothers, partners and offspring. LOC scale administered to parents at 4 and to offspring at 3 time points. Data on health/ mental health/development collected throughout.

• LOC scores at each time point

Individual	Time-point	N	mean	SD
Mother	Pregnancy	12604	4.37	2.11
	+ 6 years	8633	3.83	1.99
	+ 18 years	3758	3.48	2.01
	+ 28 years	4413	3.75	1.99
Father	Pregnancy	8738	3.60	2.30
	+ 6 years	4507	3.28	2.06
	+ 20 years	1855	2.83	1.86
	+ 28 years	2071	3.10	1.90
Offspring	Age 8 years	6374	5.99	2.08
	Age 16 years	4770	3.20	2.12
	Age ~ 30 years	4321	3.25	2.15

SD = standard deviation

RSBB questions administered to both parents at various time points and to offspring at ~30yrs.

Beliefs at each time point, where data for the questions are available.

Question	Antenatal	5 years after	9 years after	2020	
	N (%)	N (%)	N (%)	N (%)	
<i>Do you believe in God/some divine power?</i>					•
MOTHERS					•
Yes	6160 (49.9%)	4141 (46.5%)	3776 (48.2%)	2016 (43.6%)	
Not sure	4353 (35.2%)	3018 (33.9%)	2682 (34.3%)	1231 (26.6%)	
No	1838 (14.9%)	1745 (19.6%)	1369 (17.5%)	1380 (29.8%)	
PARTNERS					
Yes	3621 (37.0%)	1505 (33.6%)	1275 (35.3%)	648 (30.0%)	
Not sure	3376 (34.5%)	1573 (35.1%)	1183 (32.8%)	531 (24.6%)	
No	2801 (28.6%)	1406 (31.4%)	1149 (31.9%)	978 (45.3%)	
OFFSPRING					
Yes	-	-	-	756 (16.9%)	
Not sure	-	-	-	1197 (26.8%)	
No	-	-	-	2508 (56.2%)	

Initial observations and research priorities:

Internal women (vs Internal men) were significantly higher in most indicators of RSBB (P<0.001).

- Internal women (81.5%) more likely to retain their belief between delivery & 6y later than External women (77.3%)
- Internals were more likely than externals to believe, to attend places of worship, to obtain assistance from members of their own faith and other faiths.
- Internals were more likely to be non-Christian (in this predominantly Christian population)

A further sweep of parents and offspring planned for 2021-2022 will collect data on mediators, moderators, confounders, and health outcomes. Detailed analyses are planned (over the next 5 years) to examine the complex interplay between LOC, religious (intrinsic/extrinsic) belief, spirituality, and physical/mental health outcomes over the lifespan of the offspring (now aged 30y) and their parents (female 45-77y; male 47-85y).

Refs:

Rotter JB. Psychol Monog 1966; 80:1–28;

Nowicki S, et al. Front Psychol 2018; 9;

Iles-Caven Y, et al. Front Psychol 2020. Doi. 10.3389/fpsyg.2020.01462;

Iles-Caven Y, et al. Wellcome Open Res 2019; 4: 38.