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Mental Health, Reporting Bias and Economic Transitions

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Appendix

A Additional results

Table A.1: Information Criteria for Alternative Specifications - Full Sample

SPECIFICATION	MALES						FEMALES					
	1	2	3	1	2	3	1	2	3	1	2	3
	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC
GHQ1	89,286.2	90,043.9	89,280.1	90,035.7	89,271.6	90,023.3	132,759.8	133,517.5	132,761.4	133,517.1	132,757.6	133,509.3
GHQ2	87,331.4	88,089.1	87,319.8	88,075.5	87,323.1	88,074.7	136,285.4	137,043.1	136,109.1	136,864.7	136,098.8	136,850.5
GHQ3	73,627.6	74,385.3	73,626.6	74,382.3	73,619.6	74,371.3	101,332.4	102,090.1	101,332.6	102,088.3	101,317.0	102,068.7
GHQ4	54,222.4	54,980.1	54,222.8	54,978.5	54,192.8	54,944.5	89,093.2	89,850.9	89,094.8	89,850.5	89,072.2	89,823.9
GHQ5	112,564.6	113,322.3	112,553.2	113,308.9	112,553.1	113,304.7	154,313.8	155,071.5	154,280.8	155,036.5	154,206.4	154,958.1
GHQ6	74,829.8	75,587.5	74,831.1	75,586.7	74,830.0	75,582.7	113,494.8	114,252.5	113,481.0	114,236.7	113,455.0	114,206.7
GHQ7	93,838.6	94,596.1	93,840.2	94,595.9	93,838.4	94,590.3	127,767.4	128,525.1	127,765.6	128,521.3	127,729.8	12,481.5
GHQ8	58,635.8	59,387.5	58,632.1	59,387.7	58,406.4	59,164.1	98,035.4	98,793.1	97,952.8	98,704.5	97,886.0	98,641.7
GHQ9	95,725.4	96,483.1	95,726.8	96,482.5	95,708.8	96,460.5	140,568.6	141,326.3	140,561.6	141,317.3	140,545.6	141,297.3
GHQ10	68,313.8	69,071.5	68,315.8	69,071.5	68,310.4	69,062.1	11,229.6	112,987.3	112,231.2	112,986.9	112,209.0	112,960.7
GHQ11	44,240.1	44,997.7	44,241.8	44,997.5	44,184.4	44,936.1	72,676.6	73,434.3	72,677.8	73,433.5	72,670.4	73,422.1
GHQ12	73,916.4	74,674.1	73,917.8	74,673.5	73,904.2	74,655.9	109,767.4	110,525.1	109,763.4	110,519.1	109,749.8	110,501.5

Note: the following covariates are included in the vector \mathbf{x} to identify the mis-reporting equation: specification 1, the percentage of questions answered and whether there was a change in interviewer over time; specification 2, in addition incorporates whether the respondent is optimistic; and specification 3, adds in interview conditions - specifically whether the respondent was highly cooperative and whether other individuals were present during the interview. AIC and BIC refer to the Akaike Information Criterion and Bayesian Information Criterion respectively. For each alternative specification the lowest AIC/BIC is highlighted in bold. GHQ1 – concentration; GHQ2 – sleep loss; GHQ3 – usefulness; GHQ4 – capability; GHQ5 – strain; GHQ6 – overcoming difficulties; GHQ7 – enjoy activities; GHQ8 – face up to problems; GHQ9 – unhappy or depressed; GHQ10 – losing confidence; GHQ11 – worthless person; GHQ12 – feeling reasonably happy.

Table A.2: Information Criteria for Alternative Specifications - Sub Sample UKHLS

SPECIFICATION	MALES				FEMALES			
	3		4		3		4	
	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC
GHQ1	6,777.6	7,363.1	6,785.6	7,364.0	10,410.7	11,007.7	10,440.3	11,044.7
GHQ2	6,223.5	6,801.9	6,223.6	6,809.2	10,250.4	10,847.4	10,252.3	10,856.7
GHQ3	5,401.2	5,528.5	5,407.9	5,542.8	8,595.7	8,596.1	9,192.7	9,200.4
GHQ4	4,282.2	4,860.7	4,282.3	4,867.8	7,356.5	7,953.5	7,357.3	7,961.7
GHQ5	7,804.6	8,383.0	7,807.8	8,393.4	11,794.9	12,392.0	11,804.8	12,409.2
GHQ6	5,602.4	6,180.8	5,604.9	6,191.2	8,999.6	9,596.6	9,000.7	9,605.0
GHQ7	6,657.6	7,236.0	7,807.8	8,393.4	9,964.8	10,561.8	9,963.2	10,567.6
GHQ8	4,685.4	5,263.8	4,707.8	5,293.4	7,564.9	8,161.9	7,560.0	8,164.4
GHQ9	7,126.6	7,705.0	7,128.0	7,713.6	11,055.5	11,652.6	11,056.6	11,661.0
GHQ10	5,671.8	6,250.2	5,707.8	6,293.3	9,720.6	10,325.0	9,730.7	10,327.7
GHQ11	3,721.3	4,299.7	3,725.1	4,310.7	6,161.3	6,858.3	6,263.3	6,867.6
GHQ12	5,971.3	6,549.7	5,984.3	6,569.8	9,375.8	9,972.8	9,374.7	9,979.1

Note: the above diagnostics are based upon a sub-sample of individuals in the *UKHLS* from wave 7 onwards a group of respondents were invited to take part online as well as others doing the interview face-to-face or by phone. The following covariates are included in the vector \mathbf{x} to identify the mis-reporting equation: specification 3, the percentage of questions answered, whether there was a change in interviewer over time, whether the respondent is optimistic and interview conditions - specifically whether the respondent was highly cooperative and whether other individuals were present during the interview. Specification 4 in addition controls for whether the questionnaire was answered face-to-face (or by phone) with an interviewer or completed online. AIC and BIC refer to the Akaike Information Criterion and Bayesian Information Criterion respectively. For each alternative specification the lowest AIC/BIC is highlighted in bold. GHQ1 – concentration; GHQ2 – sleep loss; GHQ3 – usefulness; GHQ4 – capability; GHQ5 – strain; GHQ6 – overcoming difficulties; GHQ7 – enjoy activities; GHQ8 – face up to problems; GHQ9 – unhappy or depressed; GHQ10 – losing confidence; GHQ11 – worthless person; GHQ12 – feeling reasonably happy.

Table A.3: Males - Estimated Coefficients of the Inflated Probit Model: GHQ1 to GHQ6

	Index Function for Probit											
	GHQ1		GHQ2		GHQ3		GHQ4		GHQ5		GHQ6	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
constant	2.925	(0.257)***	1.798	(0.280)***	-1.327	(0.157)***	-2.793	(0.143)***	3.660	(0.272)***	1.624	(0.342)***
Age10 (age divided by 10)	-0.155	(0.009)***	-0.131	(0.010)***	-0.033	(0.008)***	0.052	(0.007)***	-0.186	(0.008)***	-0.129	(0.012)***
Square of Age10	0.103	(0.007)***	0.085	(0.007)***	0.030	(0.006)***	-0.035	(0.007)***	0.131	(0.006)***	0.064	(0.010)***
Married or cohabiting	-0.148	(0.041)***	-0.180	(0.032)***	-0.195	(0.041)***	-0.161	(0.033)***	-0.020	(0.029)	-0.107	(0.059)*
White	0.005	(0.056)	-0.049	(0.048)	0.053	(0.049)	-0.113	(0.041)***	-0.046	(0.042)	-0.077	(0.081)
Degree	0.240	(0.159)	0.047	(0.138)	0.635	(0.157)***	-0.002	(0.133)	0.002	(0.124)	-0.064	(0.262)
Teaching or nursing	0.151	(0.118)	0.238	(0.100)**	0.227	(0.120)*	0.043	(0.116)	0.019	(0.086)	0.007	(0.187)
A levels	0.217	(0.145)	0.320	(0.119)***	0.301	(0.140)**	-0.269	(0.122)**	0.045	(0.105)	-0.056	(0.218)
O levels	-0.002	(0.131)	0.277	(0.122)**	-0.134	(0.159)	-0.139	(0.131)	0.043	(0.104)	-0.087	(0.220)
Other qualifications	-0.013	(0.194)	0.021	(0.155)	-0.207	(0.187)	-0.228	(0.171)	0.155	(0.141)	0.108	(0.280)
Log of monthly labour income	0.006	(0.008)	-0.008	(0.007)	-0.016	(0.008)**	-0.027	(0.007)***	0.002	(0.006)	0.006	(0.012)
Log of monthly non-labour income	-0.019	(0.006)***	-0.017	(0.005)***	-0.023	(0.007)***	-0.005	(0.005)	-0.021	(0.004)***	-0.004	(0.009)
Employed	0.002	(0.064)	-0.010	(0.055)	0.917	(0.132)***	-0.237	(0.060)***	0.027	(0.047)	0.118	(0.102)
Unemployed	0.281	(0.060)***	0.265	(0.048)***	1.187	(0.095)***	0.133	(0.048)***	0.223	(0.045)***	0.462	(0.086)***
Self-employed	0.061	(0.071)	0.056	(0.057)	0.331	(0.116)***	-0.192	(0.069)***	0.046	(0.049)	0.131	(0.111)
Home owned outright	-0.051	(0.056)	-0.123	(0.047)***	-0.110	(0.052)**	0.005	(0.049)	-0.128	(0.040)***	-0.136	(0.087)
Home owned on a mortgage	0.074	(0.053)	0.002	(0.044)	0.086	(0.051)*	0.006	(0.040)	0.048	(0.038)	0.064	(0.076)
Home rented	-0.087	(0.067)	-0.039	(0.053)	-0.147	(0.053)***	-0.075	(0.054)	-0.077	(0.048)	-0.022	(0.095)
Number of kids	0.070	(0.019)***	0.032	(0.015)**	0.018	(0.018)	-0.026	(0.013)**	0.041	(0.013)***	0.146	(0.027)***
Number of adults	0.083	(0.017)***	0.031	(0.013)**	0.009	(0.016)	0.006	(0.011)	0.054	(0.011)***	0.080	(0.023)***
Health stock (linear prediction)	0.517	(0.017)***	0.385	(0.015)***	0.545	(0.017)***	0.439	(0.018)***	0.413	(0.015)***	0.564	(0.031)***

	Index Function for Accurate Reporting											
	GHQ1		GHQ2		GHQ3		GHQ4		GHQ5		GHQ6	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
constant	-2.581	(0.245)***	-1.351	(0.287)***	5.250	(8.730)***	18.792	(2.061)***	-1.006	(0.188)***	-1.853	(0.330)***
Age10 (age divided by 10)	0.123	(0.011)***	0.110	(0.017)***	0.104	(0.015)***	-0.598	(0.066)***	0.042	(0.013)***	0.115	(0.012)***
Square of Age10	-0.030	(0.013)**	0.016	(0.024)***	-0.118	(0.016)**	0.430	(0.050)***	0.075	(0.019)***	-0.036	(0.013)***
Married or cohabiting	0.044	(0.054)	0.057	(0.057)	0.059	(0.063)	-0.026	(0.144)***	0.026	(0.036)	-0.142	(0.068)**
White	-0.046	(0.065)	-0.030	(0.070)	-0.110	(0.069)	0.328	(0.186)***	0.043	(0.042)***	-0.022	(0.087)
Degree	-0.381	(0.192)**	-0.040	(0.232)	-0.850	(0.274)**	-0.549	(0.724)	0.135	(0.136)	0.005	(0.271)*
Teaching or nursing	-0.149	(0.164)	-0.179	(0.202)	-0.157	(0.188)***	-0.017	(0.502)	0.149	(0.117)	0.015	(0.205)**
A levels	-0.305	(0.177)*	-0.337	(0.214)	-0.336	(0.216)***	1.035	(0.606)	-0.002	(0.123)	-0.091	(0.227)
O levels	0.019	(0.176)	-0.187	(0.225)	0.081	(0.226)***	0.334	(0.626)	0.081	(0.128)	0.092	(0.232)
Other qualifications	-0.029	(0.244)	0.243	(0.278)	0.176	(0.296)	0.873	(0.761)	0.123	(0.158)	0.142	(0.291)***
Log of monthly Labour income	-0.030	(0.012)**	-0.018	(0.012)	-0.059	(0.016)**	0.048	(0.026)	-0.014	(0.007)	-0.032	(0.015)***
Log of monthly non-labour income	0.019	(0.009)**	0.015	(0.009)	0.011	(0.010)	-0.052	(0.023)	0.017	(0.006)	-0.012	(0.010)
Employed	-0.187	(0.086)**	-0.216	(0.091)	-5.553	(8.720)	0.449	(0.215)	-0.237	(0.057)*	-0.283	(0.114)
Unemployed	-0.180	(0.074)**	-0.147	(0.086)	-4.953	(8.719)	0.516	(0.206)	-0.171	(0.054)	-0.194	(0.089)*
Self-employed	-0.290	(0.104)***	-0.235	(0.110)	-4.860	(8.715)	0.489	(0.228)	-0.223	(0.069)	-0.236	(0.137)
Home owned outright	0.027	(0.077)	0.125	(0.084)*	0.138	(0.089)***	-0.295	(0.193)	0.094	(0.055)	0.077	(0.099)
Home owned on a mortgage	-0.055	(0.064)	-0.037	(0.067)	-0.059	(0.077)***	-0.168	(0.177)	-0.048	(0.042)	-0.032	(0.080)
Home rented	0.051	(0.089)	0.049	(0.093)	0.121	(0.091)	0.011	(0.199)	0.029	(0.060)	-0.076	(0.104)
Number of kids	-0.085	(0.024)***	-0.083	(0.025)	-0.043	(0.024)	0.078	(0.079)	-0.039	(0.016)	-0.148	(0.027)
Number of adults	-0.083	(0.020)***	-0.081	(0.021)	-0.007	(0.022)***	0.104	(0.060)	-0.051	(0.013)***	-0.065	(0.025)***
Change in interviewer t-1 to t	0.000	(0.018)	0.033	(0.002)***	0.015	(0.024)	0.019	(0.053)	0.021	(0.016)	-0.014	(0.019)
% questionnaire not answered	0.005	(0.003)	0.007	(0.003)**	0.022	(0.005)***	0.018	(0.008)**	0.001	(0.003)	0.013	(0.003)***
Highly cooperative in interview	-0.076	(0.027)***	-0.025	(0.033)	-0.063	(0.031)**	-0.429	(0.083)***	0.005	(0.024)	-0.042	(0.018)**
Others present in interview	-0.043	(0.020)**	-0.016	(0.025)	-0.074	(0.027)***	-0.037	(0.064)	-0.036	(0.017)**	-0.028	(0.021)
Optimistic	-0.053	(0.019)***	0.087	(0.024)***	-0.043	(0.025)*	-0.099	(0.081)	-0.061	(0.016)***	-0.018	(0.020)
ρ	-0.752	(0.045)***	-0.722	(0.066)***	-0.358	(0.098)***	-0.788	(0.077)***	-0.809	(0.038)**	-0.549	(0.089)***

Note: GHQ1 – concentration; GHQ2 – sleep loss; GHQ3 – usefulness; GHQ4 – capability; GHQ5 – strain; GHQ6 – overcoming difficulties. Standard errors are given in parentheses. * significant at 10%

level; ** significant at 5% level; *** significant at 1% level. Coefficients for regional and time controls are not shown for brevity.

Table A.4: Males - Estimated Coefficients of the Inflated Probit Model: GHQ7 to GHQ12

	Index Function for Probit											
	GHQ7		GHQ8		GHQ9		GHQ10		GHQ11		GHQ12	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
constant	2.324	(0.284)***	-1.740	(0.151)***	-1.841	(0.132)***	2.380	(0.335)***	-2.011	(0.194)***	-2.301	(0.147)***
Age10 (age divided by 10)	-0.182	(0.011)***	-0.025	(0.007)***	0.036	(0.006)***	-0.146	(0.011)***	-0.062	(0.008)***	0.059	(0.008)***
Square of Age10	0.160	(0.009)***	0.016	(0.005)***	0.001	(0.007)	0.064	(0.009)***	0.027	(0.007)***	-0.022	(0.009)**
Married or cohabiting	-0.072	(0.056)	-0.178	(0.035)***	-0.129	(0.029)***	-0.190	(0.055)***	-0.040	(0.045)	-0.162	(0.033)***
White	0.002	(0.069)	0.007	(0.048)	-0.050	(0.037)	-0.089	(0.081)	0.077	(0.058)	-0.028	(0.036)
Degree	0.511	(0.225)**	0.273	(0.133)**	0.251	(0.114)**	-0.148	(0.230)	0.412	(0.196)**	0.374	(0.133)***
Teaching or nursing	0.919	(0.187)***	0.197	(0.100)*	0.256	(0.099)***	0.304	(0.189)	-0.441	(0.169)***	0.353	(0.116)***
A levels	1.058	(0.205)***	0.058	(0.121)	0.199	(0.103)*	0.305	(0.212)	-0.388	(0.179)**	0.210	(0.123)*
O levels	0.813	(0.211)***	-0.278	(0.121)**	0.207	(0.108)*	0.202	(0.214)	-0.218	(0.186)	0.200	(0.128)
Other qualifications	0.987	(0.263)***	0.158	(0.171)	0.330	(0.149)**	0.376	(0.294)	-0.032	(0.232)	0.295	(0.163)*
Log of monthly Labour income	-0.015	(0.012)	-0.023	(0.007)***	-0.024	(0.006)***	-0.006	(0.011)	-0.032	(0.009)***	-0.030	(0.007)***
Log of monthly non-labour income	-0.045	(0.008)***	-0.012	(0.006)**	0.001	(0.004)	-0.019	(0.008)**	-0.022	(0.006)***	0.003	(0.005)
Employed	0.269	(0.091)***	0.214	(0.064)***	-0.027	(0.049)	0.002	(0.088)	0.168	(0.072)**	-0.115	(0.055)**
Unemployed	0.397	(0.077)***	0.464	(0.056)***	0.287	(0.042)***	0.549	(0.073)***	0.611	(0.057)***	0.214	(0.047)***
Self-employed	0.271	(0.098)***	0.235	(0.070)***	0.016	(0.057)	0.010	(0.097)	0.252	(0.083)***	-0.063	(0.063)
Home owned outright	-0.364	(0.080)***	-0.104	(0.050)**	-0.056	(0.043)	-0.159	(0.076)**	-0.118	(0.058)**	-0.040	(0.049)
Home owned on a mortgage	-0.112	(0.069)	-0.003	(0.045)	0.051	(0.033)	0.016	(0.067)	0.034	(0.053)	-0.001	(0.037)
Home rented	-0.172	(0.092)*	-0.126	(0.052)**	-0.039	(0.046)	-0.130	(0.084)	-0.064	(0.066)	-0.026	(0.053)
Number of kids	0.189	(0.023)***	0.051	(0.014)***	-0.031	(0.011)***	0.153	(0.025)***	0.138	(0.018)***	-0.038	(0.012)***
Number of adults	0.009	(0.020)	-0.003	(0.013)	-0.005	(0.010)	0.081	(0.022)***	0.007	(0.016)	-0.009	(0.011)
Health stock (linear prediction)	0.781	(0.031)***	0.539	(0.018)***	0.498	(0.017)***	0.555	(0.027)***	0.589	(0.024)***	0.469	(0.019)***
	Index Function for Accurate Reporting											
	GHQ7		GHQ8		GHQ9		GHQ10		GHQ11		GHQ12	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
constant	-2.169	(0.267)***	6.790	(2.962)***	6.980	(0.583)***	-2.839	(0.356)***	1.322	(0.557)***	7.995	(0.600)***
Age10 (age divided by 10)	0.165	(0.011)***	0.437	(0.057)***	-0.259	(0.020)***	0.127	(0.012)***	0.199	(0.022)***	-0.299	(0.022)***
Square of Age10	-0.148	(0.011)***	-0.429	(0.062)***	0.130	(0.016)	-0.022	(0.012)***	-0.107	(0.021)***	0.187	(0.018)***
Married or cohabiting	0.014	(0.060)***	0.048	(0.201)	-0.321	(0.078)**	-0.067	(0.070)***	-0.421	(0.126)*	-0.246	(0.074)***
White	-0.020	(0.069)	-0.341	(0.229)	0.194	(0.111)***	0.071	(0.098)**	-0.208	(0.144)***	0.144	(0.098)**
Degree	-0.423	(0.236)	-1.097	(0.858)	-0.760	(0.417)	0.361	(0.255)	-1.255	(0.503)***	-1.094	(0.416)
Teaching or nursing	-0.872	(0.203)	-0.495	(0.590)	-0.304	(0.299)	-0.260	(0.222)**	1.015	(0.366)	-0.467	(0.310)
A levels	-1.058	(0.214)	-0.046	(0.713)***	-0.002	(0.330)	-0.301	(0.240)	1.351	(0.416)**	-0.062	(0.367)**
O levels	-0.859	(0.224)	1.965	(0.659)***	0.084	(0.353)	-0.118	(0.244)***	0.645	(0.378)***	0.227	(0.392)**
Other qualifications	-0.932	(0.276)	1.019	(0.894)	-0.133	(0.487)	-0.438	(0.338)	0.603	(0.504)***	0.156	(0.456)
Log of monthly Labour income	-0.012	(0.013)	-0.038	(0.037)	0.030	(0.016)	-0.022	(0.014)	-0.032	(0.024)***	0.021	(0.016)*
Log of monthly non-labour income	0.040	(0.009)	-0.005	(0.026)	-0.024	(0.011)	0.018	(0.010)**	0.038	(0.017)***	-0.029	(0.012)
Employed	-0.408	(0.097)**	-7.991	(2.897)	-0.079	(0.127)	-0.236	(0.109)	-1.490	(0.215)***	0.130	(0.127)***
Unemployed	-0.173	(0.080)	-7.444	(2.880)	0.126	(0.115)	-0.072	(0.085)	-0.602	(0.158)	0.248	(0.115)
Self-employed	-0.487	(0.114)	-8.043	(2.895)	-0.164	(0.143)	-0.265	(0.132)	-1.571	(0.234)***	-0.069	(0.138)**
Home owned outright	0.296	(0.087)	0.875	(0.298)	-0.118	(0.110)	0.113	(0.097)***	-0.152	(0.179)	-0.029	(0.100)
Home owned on a mortgage	0.037	(0.067)	0.332	(0.224)***	-0.098	(0.100)	0.058	(0.081)**	-0.153	(0.146)	0.072	(0.098)***
Home rented	0.060	(0.094)	0.140	(0.306)	-0.003	(0.114)	0.165	(0.108)	0.058	(0.186)	-0.116	(0.108)
Number of kids	-0.167	(0.023)**	-0.257	(0.064)	0.141	(0.038)*	-0.173	(0.027)	-0.235	(0.042)	0.197	(0.041)
Number of adults	-0.006	(0.021)***	-0.041	(0.068)**	0.035	(0.032)	-0.090	(0.025)	-0.010	(0.042)	0.075	(0.031)***
Change in interviewer t-1 to t	0.022	(0.017)	0.087	(0.010)***	-0.018	(0.028)	0.003	(0.022)	0.081	(0.028)***	0.017	(0.004)***
% questionnaire not answered	0.007	(0.003)***	0.022	(0.015)	0.003	(0.004)	0.017	(0.004)***	0.036	(0.010)***	0.014	(0.004)***
Highly cooperative in interview	-0.046	(0.023)**	-0.099	(0.118)	-0.184	(0.042)***	-0.067	(0.032)**	-0.216	(0.082)***	-0.153	(0.038)***
Others present in interview	-0.032	(0.018)*	0.007	(0.093)	-0.039	(0.033)	-0.056	(0.024)***	0.059	(0.062)	-0.021	(0.031)
Optimistic	-0.007	(0.018)	-0.118	(0.091)	-0.028	(0.037)	0.003	(0.024)	0.007	(0.063)	-0.026	(0.037)
ρ	-0.523	(0.081)***	0.254	(0.254)***	-0.745	(0.050)***	-0.553	(0.082)***	1.000	(0.006)***	-0.773	(0.043)***

Note: GHQ7 – enjoy activities; GHQ8 – face up to problems; GHQ9 – unhappy or depressed; GHQ10 – losing confidence; GHQ11 – worthless person;

GHQ12 – feeling reasonably happy. Standard errors are given in parentheses. * significant at 10% level; ** significant at 5% level; *** significant at 1% level. Coefficients for regional and time controls

are not shown for brevity.

Table A.5: Females - Estimated Coefficients of the Inflated Probit Model: GHQ1 to GHQ6

	Index Function for Probit											
	GHQ1		GHQ2		GHQ3		GHQ4		GHQ5		GHQ6	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
constant	1.813	(0.204)***	-1.130	(0.122)***	2.374	(0.308)***	-1.868	(0.108)***	-1.175	(0.155)***	-1.134	(0.083)***
Age10 (age divided by 10)	-0.115	(0.007)***	0.030	(0.005)***	-0.082	(0.009)***	0.064	(0.005)***	0.049	(0.006)***	0.041	(0.004)***
Square of Age10	0.066	(0.005)***	-0.001	(0.005)	0.019	(0.007)**	-0.047	(0.005)***	-0.007	(0.006)	-0.043	(0.004)***
Married or cohabiting	-0.179	(0.029)***	-0.150	(0.024)***	-0.176	(0.051)***	-0.047	(0.025)*	-0.038	(0.027)	-0.091	(0.018)***
White	0.055	(0.043)	-0.070	(0.037)*	0.064	(0.076)	-0.096	(0.036)***	-0.035	(0.048)	-0.067	(0.027)**
Degree	0.338	(0.133)**	0.097	(0.098)	0.197	(0.223)	0.222	(0.107)**	-0.196	(0.116)*	0.042	(0.073)
Teaching or nursing	0.159	(0.103)	0.091	(0.083)	0.052	(0.186)	-0.021	(0.090)	-0.250	(0.101)**	0.021	(0.063)
A levels	0.378	(0.118)***	-0.026	(0.089)	0.469	(0.211)**	-0.007	(0.096)	-0.367	(0.108)***	-0.013	(0.068)
O levels	0.215	(0.110)**	0.061	(0.086)	0.355	(0.199)*	-0.065	(0.094)	-0.432	(0.106)***	0.089	(0.067)
Other qualifications	0.028	(0.143)	-0.013	(0.113)	-0.216	(0.265)	-0.042	(0.132)	-0.222	(0.134)*	0.143	(0.085)*
Log of monthly Labour income	0.016	(0.007)**	-0.013	(0.006)**	-0.011	(0.012)	-0.006	(0.006)	-0.007	(0.007)	-0.017	(0.004)***
Log of monthly non-labour income	-0.009	(0.005)**	0.000	(0.004)	-0.024	(0.008)***	-0.004	(0.004)	0.001	(0.005)	-0.001	(0.003)
Employed	-0.127	(0.047)***	-0.043	(0.038)	-0.012	(0.081)	-0.228	(0.037)***	-0.109	(0.042)**	-0.078	(0.029)***
Unemployed	0.153	(0.057)***	0.132	(0.040)***	0.413	(0.080)***	0.213	(0.042)***	0.059	(0.049)	0.163	(0.033)***
Self-employed	-0.116	(0.065)*	0.012	(0.056)	-0.094	(0.111)	-0.231	(0.062)***	-0.213	(0.061)***	-0.080	(0.042)*
Home owned outright	0.008	(0.043)	-0.074	(0.038)*	-0.102	(0.075)	0.088	(0.041)**	-0.163	(0.045)***	-0.017	(0.030)
Home owned on a mortgage	0.042	(0.041)	-0.038	(0.031)	-0.095	(0.072)	0.011	(0.032)	-0.150	(0.036)***	-0.024	(0.024)
Home rented	-0.024	(0.046)	0.008	(0.040)	-0.108	(0.078)	-0.016	(0.040)	-0.048	(0.045)	-0.034	(0.031)
Number of kids	-0.050	(0.014)***	-0.041	(0.010)***	0.004	(0.024)	-0.034	(0.010)***	0.001	(0.012)	-0.010	(0.008)
Number of adults	0.062	(0.012)***	-0.021	(0.009)**	-0.012	(0.021)	-0.023	(0.009)**	-0.001	(0.011)	-0.010	(0.007)
Health stock (linear prediction)	0.463	(0.013)***	0.319	(0.013)***	0.587	(0.022)***	0.416	(0.014)***	0.384	(0.014)***	0.381	(0.011)***

	Index Function for Accurate Reporting											
	GHQ1		GHQ2		GHQ3		GHQ4		GHQ5		GHQ6	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
constant	-1.837	(0.228)***	3.819	(0.507)***	-1.929	(0.294)***	13.029	(1.412)***	3.176	(0.343)***	7.045	(1.020)***
Age10 (age divided by 10)	0.100	(0.010)***	-0.147	(0.016)***	0.069	(0.009)***	-0.562	(0.053)***	-0.113	(0.009)***	-0.628	(0.061)***
Square of Age10	-0.002	(0.013)	0.029	(0.013)***	0.020	(0.008)**	0.411	(0.040)***	0.034	(0.008)***	0.571	(0.055)***
Married or cohabiting	0.036	(0.046)	-0.053	(0.071)	-0.035	(0.055)	-0.868	(0.147)***	-0.052	(0.047)	-0.883	(0.192)**
White	-0.031	(0.060)	0.141	(0.111)	-0.082	(0.083)	0.611	(0.185)***	0.021	(0.083)***	0.339	(0.224)
Degree	-0.376	(0.208)*	-0.167	(0.338)	0.211	(0.251)**	-1.815	(0.779)	0.257	(0.220)	-0.185	(0.712)*
Teaching or nursing	-0.239	(0.181)	-0.099	(0.262)	0.047	(0.210)***	-0.221	(0.497)	0.342	(0.186)	-1.314	(0.529)**
A levels	-0.521	(0.194)***	0.348	(0.310)	-0.404	(0.233)***	0.485	(0.632)	0.606	(0.208)	0.268	(0.734)
O levels	-0.318	(0.189)*	0.082	(0.296)	-0.298	(0.218)***	0.220	(0.578)	0.734	(0.198)	-1.312	(0.639)
Other qualifications	0.062	(0.247)	0.398	(0.380)	0.184	(0.293)	1.205	(0.849)	0.393	(0.244)	-4.063	(0.964)***
Log of monthly Labour income	0.013	(0.011)	0.021	(0.017)	-0.020	(0.014)**	0.058	(0.032)	0.042	(0.011)	0.226	(0.050)***
Log of monthly non-labour income	0.011	(0.008)	0.001	(0.012)	0.018	(0.010)	-0.039	(0.022)	-0.002	(0.008)	0.003	(0.028)
Employed	-0.290	(0.070)***	0.018	(0.122)	-0.185	(0.091)	0.103	(0.224)	-0.006	(0.076)*	-0.117	(0.318)
Unemployed	-0.080	(0.080)	0.214	(0.147)	0.078	(0.083)	-0.195	(0.279)	0.228	(0.099)	0.606	(0.368)*
Self-employed	-0.329	(0.121)***	-0.100	(0.157)	-0.121	(0.141)	0.282	(0.286)	0.142	(0.096)	-0.113	(0.477)
Home owned outright	-0.013	(0.075)	0.091	(0.103)*	0.147	(0.086)***	-0.220	(0.188)	0.097	(0.072)	-0.095	(0.271)
Home owned on a mortgage	-0.051	(0.059)	-0.001	(0.097)	0.191	(0.077)***	0.042	(0.184)	0.148	(0.064)	0.338	(0.236)
Home rented	0.070	(0.071)	-0.166	(0.110)	0.112	(0.082)	-0.156	(0.205)	0.003	(0.073)	0.182	(0.246)
Number of kids	0.070	(0.021)***	0.027	(0.039)	-0.041	(0.025)	0.126	(0.075)	0.013	(0.023)	0.166	(0.076)
Number of adults	-0.064	(0.017)***	0.079	(0.031)	-0.014	(0.022)***	0.134	(0.057)	0.071	(0.021)***	0.490	(0.083)***
Change in interviewer t-1 to t	-0.019	(0.019)	-0.018	(0.026)	0.013	(0.016)	0.050	(0.012)***	-0.015	(0.015)	-0.080	(0.074)
% questionnaire not answered	0.006	(0.003)*	0.000	(0.004)	0.013	(0.003)***	0.010	(0.008)	-0.009	(0.002)***	0.017	(0.013)
Highly cooperative in interview	-0.077	(0.029)***	-0.147	(0.039)***	-0.102	(0.023)***	-0.575	(0.091)***	-0.115	(0.023)***	-0.906	(0.143)***
Others present in interview	0.019	(0.020)	0.004	(0.032)	0.018	(0.017)	0.016	(0.062)	0.037	(0.018)**	-0.087	(0.087)
Optimistic	-0.014	(0.019)	0.148	(0.039)***	0.027	(0.019)	-0.007	(0.082)	0.127	(0.022)***	0.469	(0.117)***
ρ	-0.675	(0.056)***	-0.588	(0.082)***	-0.601	(0.054)***	-0.666	(0.099)***	-0.791	(0.035)***	-1.000	(0.014)***

Note: GHQ1 – concentration; GHQ2 – sleep loss; GHQ3 – usefulness; GHQ4 – capability; GHQ5 – strain; GHQ6 – overcoming difficulties. Standard errors are given in parentheses. * significant at 10%

level; ** significant at 5% level; *** significant at 1% level. Coefficients for regional and time controls are not shown for brevity.

Table A.6: Females - Estimated Coefficients of the Inflated Probit Model: GHQ7 to GHQ12

	Index Function for Probit											
	GHQ7		GHQ8		GHQ9		GHQ10		GHQ11		GHQ12	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
constant	1.018	(0.249)***	-1.513	(0.141)***	-0.627	(0.173)***	-0.888	(0.105)***	-2.206	(0.121)***	-1.526	(0.118)***
Age10 (age divided by 10)	-0.171	(0.009)***	0.092	(0.006)***	0.024	(0.006)***	0.064	(0.005)***	-0.005	(0.006)	0.092	(0.005)***
Square of Age10	0.158	(0.008)***	-0.076	(0.006)***	0.020	(0.005)***	-0.064	(0.004)***	0.027	(0.006)***	-0.095	(0.005)***
Married or cohabiting	-0.297	(0.045)***	-0.056	(0.028)**	-0.175	(0.029)***	-0.077	(0.021)***	-0.146	(0.025)***	-0.031	(0.023)
White	0.022	(0.065)	-0.133	(0.042)***	-0.169	(0.051)***	0.011	(0.035)	-0.012	(0.041)	-0.046	(0.035)
Degree	0.089	(0.199)	-0.027	(0.118)	-0.139	(0.121)	0.180	(0.076)**	0.116	(0.100)	-0.099	(0.095)
Teaching or nursing	0.034	(0.165)	-0.066	(0.098)	-0.171	(0.097)*	0.013	(0.066)	-0.166	(0.083)**	-0.087	(0.084)
A levels	0.107	(0.177)	-0.118	(0.107)	-0.251	(0.109)**	0.021	(0.068)	-0.120	(0.087)	-0.136	(0.089)
O levels	-0.040	(0.176)	-0.200	(0.105)*	-0.253	(0.103)**	0.083	(0.069)	-0.087	(0.088)	0.016	(0.087)
Other qualifications	-0.189	(0.243)	0.026	(0.142)	-0.022	(0.142)	-0.032	(0.095)	-0.009	(0.112)	-0.178	(0.112)
Log of monthly Labour income	0.035	(0.011)***	-0.019	(0.007)***	-0.018	(0.007)**	-0.018	(0.005)***	-0.030	(0.006)***	-0.017	(0.005)***
Log of monthly non-labour income	-0.006	(0.008)	0.001	(0.005)	0.000	(0.005)	0.002	(0.004)	-0.005	(0.004)	0.001	(0.004)
Employed	-0.194	(0.071)***	-0.075	(0.045)*	0.035	(0.048)	-0.168	(0.034)***	-0.012	(0.040)	0.046	(0.036)
Unemployed	0.153	(0.080)*	0.144	(0.046)***	0.238	(0.051)***	0.227	(0.035)***	0.264	(0.043)***	0.230	(0.038)***
Self-employed	0.019	(0.104)	-0.096	(0.067)	-0.084	(0.070)	-0.230	(0.052)***	-0.085	(0.063)	-0.079	(0.052)
Home owned outright	-0.123	(0.068)*	0.129	(0.046)***	-0.026	(0.047)	0.019	(0.034)	-0.074	(0.043)*	0.001	(0.036)
Home owned on a mortgage	0.077	(0.063)	-0.035	(0.037)	0.028	(0.039)	-0.035	(0.027)	-0.010	(0.034)	0.055	(0.030)*
Home rented	-0.076	(0.077)	-0.060	(0.045)	0.013	(0.049)	-0.005	(0.033)	-0.021	(0.039)	0.043	(0.038)
Number of kids	0.001	(0.020)	-0.043	(0.012)***	-0.006	(0.013)	-0.025	(0.009)***	0.000	(0.011)	-0.015	(0.010)
Number of adults	0.074	(0.018)***	-0.003	(0.011)	-0.003	(0.012)	-0.013	(0.008)	-0.011	(0.010)	0.020	(0.009)**
Health stock (linear prediction)	0.759	(0.027)***	0.452	(0.014)***	0.459	(0.015)***	0.417	(0.011)***	0.442	(0.015)***	0.416	(0.013)***

	Index Function for Accurate Reporting											
	GHQ7		GHQ8		GHQ9		GHQ10		GHQ11		GHQ12	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
constant	-0.822	(0.251)***	4.987	(0.619)***	2.733	(0.400)***	7.724	(0.744)***	12.492	(1.186)***	6.212	(0.891)***
Age10 (age divided by 10)	0.184	(0.009)***	-0.357	(0.022)***	-0.102	(0.010)***	-0.566	(0.036)***	-0.375	(0.042)***	-0.442	(0.035)***
Square of Age10	-0.169	(0.009)***	0.286	(0.019)***	0.011	(0.009)	0.458	(0.029)***	0.159	(0.030)***	0.408	(0.030)***
Married or cohabiting	0.234	(0.049)***	-0.460	(0.094)	0.008	(0.056)**	-0.612	(0.102)***	-0.214	(0.129)*	-1.044	(0.145)***
White	0.002	(0.070)	0.527	(0.129)	0.350	(0.095)***	0.203	(0.157)**	0.666	(0.192)***	0.543	(0.183)**
Degree	0.143	(0.222)	0.441	(0.450)	0.314	(0.250)	-0.469	(0.468)	-0.409	(0.693)***	1.235	(0.614)
Teaching or nursing	0.001	(0.199)	0.292	(0.312)	0.107	(0.189)	-0.025	(0.318)**	0.228	(0.408)	0.429	(0.405)
A levels	-0.040	(0.205)	0.629	(0.377)***	0.314	(0.219)	-0.105	(0.371)	0.036	(0.513)**	1.018	(0.521)**
O levels	0.076	(0.208)	0.801	(0.356)***	0.420	(0.210)	-0.070	(0.355)***	0.324	(0.492)***	-0.109	(0.452)**
Other qualifications	0.274	(0.287)	-0.029	(0.435)	-0.302	(0.273)	-0.126	(0.462)	-0.160	(0.617)***	1.245	(0.642)
Log of monthly Labour income	-0.015	(0.012)	0.061	(0.025)	0.024	(0.014)	0.081	(0.027)	0.110	(0.033)***	0.033	(0.032)*
Log of monthly non-labour income	-0.003	(0.009)	-0.016	(0.017)	0.000	(0.009)	-0.043	(0.016)**	-0.020	(0.021)***	-0.030	(0.021)
Employed	-0.151	(0.076)**	-0.057	(0.168)	-0.125	(0.101)	0.132	(0.180)	-0.566	(0.236)***	-0.448	(0.218)***
Unemployed	0.086	(0.089)	0.227	(0.178)	0.022	(0.111)	0.290	(0.197)	0.098	(0.226)	0.471	(0.225)
Self-employed	-0.410	(0.122)	-0.036	(0.215)	0.014	(0.129)	0.345	(0.243)	0.024	(0.293)***	-0.030	(0.298)**
Home owned outright	0.210	(0.078)	-0.410	(0.132)	0.010	(0.084)	0.105	(0.143)***	0.044	(0.187)	0.267	(0.173)
Home owned on a mortgage	-0.007	(0.068)	0.213	(0.124)***	0.031	(0.078)	0.301	(0.134)**	-0.074	(0.179)	-0.069	(0.161)***
Home rented	0.027	(0.082)	0.087	(0.131)	-0.103	(0.089)	-0.017	(0.145)	-0.092	(0.164)	-0.084	(0.167)
Number of kids	-0.023	(0.022)**	0.175	(0.048)	-0.004	(0.028)*	0.104	(0.050)	-0.078	(0.069)	-0.076	(0.064)
Number of adults	-0.060	(0.019)***	0.036	(0.037)**	0.014	(0.024)	0.057	(0.043)	0.053	(0.053)	-0.037	(0.051)***
Change in interviewer t-1 to t	0.025	(0.015)*	-0.036	(0.032)	0.016	(0.004)***	-0.022	(0.037)	-0.033	(0.050)	0.063	(0.028)***
% questionnaire not answered	0.005	(0.002)*	0.014	(0.005)***	-0.007	(0.003)***	0.014	(0.006)***	0.036	(0.008)***	0.027	(0.009)***
Highly cooperative in interview	-0.132	(0.023)***	-0.322	(0.050)***	-0.119	(0.027)***	-0.284	(0.059)***	-0.242	(0.070)***	-0.371	(0.080)***
Others present in interview	0.002	(0.016)	-0.004	(0.038)	-0.017	(0.021)	0.074	(0.045)*	0.074	(0.062)	-0.033	(0.056)
Optimistic	0.031	(0.018)*	0.127	(0.046)***	0.078	(0.025)***	-0.041	(0.058)	0.036	(0.078)	0.033	(0.072)
ρ	-0.523	(0.076)***	-0.769	(0.054)***	-0.710	(0.047)***	-0.930	(0.031)***	-0.797	(0.070)***	-0.540	(0.122)***

Note: GHQ7 – enjoy activities; GHQ8 – face up to problems; GHQ9 – unhappy or depressed; GHQ10 – losing confidence; GHQ11 – worthless person;

GHQ12 – feeling reasonably happy. Standard errors are given in parentheses. * significant at 10% level; ** significant at 5% level; *** significant at 1% level. Coefficients for regional and time controls

are not shown for brevity.