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Appendix S1. Schizophrenia vignette.

XX is 44 years old. He/she is staying in a 1-room HDB rental flat. He/she has not worked for years. He/she wears the same clothes every day and has left his/her hair to grow long and untidy. He/she is always on his/her own and is often seen sitting in the park talking to himself/herself. Sometimes, he/she stands and moves his/her hands as if to communicate to someone in nearby trees. He/she rarely drinks alcohol. At times, he/she accuses shopkeepers of giving information about him/her to other people. He/she has put extra locks on his/her door. He/she says spies are watching him/her all the time. His/her neighbours complain that he/she does not clean his/her room, which is becoming increasingly dirty and is filled with glass objects. XX says he/she is using these "to receive messages from space".

Vignette-related questionnaires

2.1 Recognition of schizophrenia

Statement: What do you think [XX] is suffering from?

Response: Open text

2.2 Personal Stigma Scale of Depression Stigma Scale

The next question contains statements about [XX]'s problem. Please indicate how strongly you agree or disagree with each statement.

Statement:

a. People with a problem like [XX]'s could get better if they wanted to.
b. A problem like [XX]'s is a sign of personal weakness.
c. [XX]'s problem is not a real medical illness.
d. People with a problem like [XX]'s are dangerous to others.
e. It is best to avoid people with a problem like [XX]'s so that you don't also get this problem.
f. People with a problem like [XX]'s are unpredictable.
g. If I had a problem like [XX]'s I would not tell anyone.
h. I would not employ someone if I knew they had a problem like [XX]'s.

Response:

1. Strongly agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree
6. Not applicable (if volunteered or not old enough to employ someone) - for statement h only
7. Don't know
8. Refused

2.3 Social Distance Scale

How willing would you have contact with someone like [XX]?

Statement

a. How willing would you be to move next door to [XX]?

b. How willing would you be to spend an evening with [XX]?

c. How willing would you be to make friends with [XX]?

d. How willing would you be to have [XX] start working closely with you on a job?

e. How willing would you be to have [XX] marry into your family?

Response

1. Definitely willing
2. Probably willing
3. Probably unwilling
4. Definitely unwilling
5. Don't know
6. Refused

Table S1. Pooled survey-weighted logistic regression on changes of correct schizophrenia recognition over time with survey year as the key predictor and all sociodemographic variables as covariates.

	OR	95% CI	t	*P*
Survey year (ref: 2015)				
2023	0.97	0.54–1.74	−0.11	0.911
Age group (ref: 18–34 years)				
35–49 years	0.37	0.16–0.85	−2.35	0.019
50–65 years	0.31	0.09–1.04	−1.90	0.058
Sex (ref: Female)				
Male	0.57	0.27–1.22	−1.45	0.148
Ethnicity (ref: Chinese)				
Malay	0.87	0.39–1.97	−0.33	0.741
Indian	0.85	0.43–1.69	−0.46	0.645
Others	0.40	0.10–1.53	−1.34	0.180
Marital status (ref: Married)				
Never married	1.31	0.57–2.98	0.64	0.525
Sep/Divorced/Widowed	3.94	0.73–21.31	1.59	0.112
Education (ref: University)				
Primary & below	0.04	0.002–0.72	−2.18	0.030
Secondary	0.49	0.10–2.36	−0.88	0.377
Pre-U/Diploma/Poly	0.89	0.28–2.82	−0.19	0.848
Employment (ref: Employed)				
Unemployed	7.83	1.54–39.84	2.48	0.013
Economically inactive	1.59	0.39–6.54	0.64	0.520
Income (ref: >SGD10,000)				
<SGD2000	0.27	0.05–1.53	−1.48	0.139
SGD2000–3999	0.11	0.02–0.45	−3.06	0.002
SGD4000–5999	0.14	0.03–0.56	−2.78	0.006
SGD6000–9999	0.34	0.09–1.23	−1.65	0.100
Contact experience (ref: No)				
Personal experience: Yes	0.03	0.003–0.42	−2.64	0.009
Family/friends exp: Yes	3.54	1.32–9.50	2.51	0.012

CI: confidence interval; OR: odds ratio; SGD: Singapore dollars

Reference categories: 2015 (time); 18–34 years (age); female (sex); Chinese (ethnicity); married (marital); university (education); employed (employment); >SGD10,000 (income); no (contact experience).

Table S2. Pooled survey-weighted linear regression on "weak-not-sick" stigma with survey year as the key predictor and all sociodemographic variables as covariates.

	β	95% CI	t	*P*
Survey year (ref: 2015)				
2023	−0.65	−0.99 to −0.31	−3.78	<0.001
Age group (ref: 18–34 years)				
35–49 years	0.74	0.12–1.36	2.35	0.019
50–65 years	1.42	0.74–2.10	4.09	<0.001
Sex (ref: Female)				
Male	0.31	−0.15 to 0.77	1.33	0.184
Ethnicity (ref: Chinese)				
Malay	0.37	−0.08 to 0.83	1.61	0.107
Indian	0.35	−0.09 to 0.78	1.57	0.116
Others	−0.67	−1.38 to 0.03	−1.88	0.061
Marital status (ref: Married)				
Never married	−0.31	−0.94 to 0.32	−0.96	0.335
Sep/Divorced/Widowed	−0.12	−0.93 to 0.68	−0.30	0.766
Education (ref: University)				
Primary & below	0.90	−0.12 to 1.92	1.73	0.083
Secondary	0.66	0.04–1.28	2.08	0.038
Pre-U/Diploma/Poly	0.19	−0.42 to 0.79	0.61	0.539
Employment (ref: Employed)				
Unemployed	−1.35	−2.60 to −0.11	−2.13	0.034
Economically inactive	0.01	−0.73 to 0.74	0.01	0.989
Income (ref: >SGD10,000)				
<SGD2000	1.35	0.33–2.37	2.59	0.010
SGD2000–3999	1.47	0.41–2.54	2.71	0.007
SGD4000–5999	1.22	0.24–2.21	2.44	0.015
SGD6000–9999	0.80	−0.17 to 1.77	1.62	0.106
Contact experience (ref: No)				
Personal experience: Yes	0.95	0.12–1.78	2.25	0.024
Family/friends exp: Yes	−0.36	−0.86 to 0.15	−1.39	0.164

CI: confidence interval; SGD: Singapore dollars

β = unstandardised regression coefficient

Table S3. Pooled survey-weighted linear regression on "dangerous-unpredictable" stigma with survey year as the key predictor and all sociodemographic variables as covariates.

	β	95% CI	t	*P*
Survey year (ref: 2015)				
2023	−0.35	−0.77, 0.06	−1.67	0.096
Age group (ref: 18–34 years)				
35–49 years	0.02	−0.73, 0.78	0.06	0.951
50–65 years	0.10	−0.75, 0.95	0.23	0.817
Sex (ref: Female)				
Male	0.48	−0.01, 0.97	1.92	0.055
Ethnicity (ref: Chinese)				
Malay	−0.13	−0.69, 0.42	−0.46	0.642
Indian	−0.39	−0.87, 0.09	−1.59	0.111
Others	−0.40	−1.19, 0.39	−0.98	0.326
Marital status (ref: Married)				
Never married	−0.38	−1.07, 0.31	−1.08	0.279
Sep/Divorced/Widowed	−0.77	−1.80, 0.25	−1.48	0.139
Education (ref: University)				
Primary & below	0.53	−0.86, 1.92	0.75	0.451
Secondary	0.04	−0.80, 0.87	0.09	0.930
Pre-U/Diploma/Poly	−0.44	−1.09, 0.22	−1.31	0.191
Employment (ref: Employed)				
Unemployed	−0.79	−1.88, 0.30	−1.43	0.154
Economically inactive	−0.67	−1.50, 0.16	−1.60	0.111
Income (ref: >SGD10,000)				
<SGD2000	2.29	1.09, 3.48	3.75	<0.001
SGD2000–3999	1.27	0.13, 2.41	2.19	0.029
SGD4000–5999	2.09	1.02, 3.17	3.81	<0.001
SGD6000–9999	1.28	0.09, 2.47	2.11	0.035
Contact experience (ref: No)				
Personal experience: Yes	1.27	−0.04, 2.57	1.91	0.057
Family/friends exp: Yes	−0.35	−0.95, 0.25	−1.14	0.255

CI: confidence interval; SGD: Singapore dollars

β = unstandardised regression coefficient

Table S4. Pooled survey-weighted linear regression on social distance stigma with survey year as the key predictor and all sociodemographic variables as covariates.

	β	95% CI	t	*P*
Survey year (ref: 2015)				
2023	+0.03	−0.56 to 0.61	0.08	0.933
Age group (ref: 18–34 years)				
35–49 years	0.69	−0.18 to 1.56	1.56	0.119
50–65 years	0.02	−0.96 to 1.01	0.05	0.961
Sex (ref: Female)				
Male	0.23	−0.42 to 0.88	0.70	0.485
Ethnicity (ref: Chinese)				
Malay	−1.55	−2.27 to −0.83	−4.22	<0.001
Indian	−1.30	−1.92 to −0.68	−4.11	<0.001
Others	−1.08	−1.94 to −0.21	−2.44	0.015
Marital status (ref: Married)				
Never married	−0.03	−0.85 to 0.80	−0.06	0.952
Sep/Divorced/Widowed	−1.02	−2.52 to 0.47	−1.34	0.179
Education (ref: University)				
Primary & below	0.58	−1.67 to 2.83	0.51	0.613
Secondary	−1.00	−2.14 to 0.15	−1.71	0.088
Pre-U/Diploma/Poly	−0.63	−1.45 to 0.19	−1.50	0.133
Employment (ref: Employed)				
Unemployed	0.61	−1.62 to 2.84	0.54	0.589
Economically inactive	−0.91	−2.38 to 0.55	−1.22	0.222
Income (ref: >SGD10,000)				
<SGD2000	1.04	−0.69–2.77	1.18	0.237
SGD2000–3999	0.28	−1.21 to 1.76	0.37	0.715
SGD4000–5999	0.17	−1.18 to 1.52	0.25	0.803
SGD6000–9999	0.15	−1.33 to 1.63	0.20	0.845
Contact experience (ref: No)				
Personal experience: Yes	0.02	−1.68 to 1.73	0.03	0.978
Family/friends exp: Yes	−1.39	−2.11 to −0.68	−3.82	<0.001

CI: confidence interval; SGD: Singapore dollars

β = unstandardised regression coefficient

Table S5. Doubly robust IPW logistic regression on correct schizophrenia recognition.

	OR	95% CI	t	*P*
Survey year (ref: 2015)				
2023	1.24	0.65–2.37	0.66	0.512
Age group (ref: 18–34 years)				
35–49 years	0.37	0.16–0.85	−2.35	0.019
50–65 years	0.31	0.09–1.04	−1.90	0.058
Sex (ref: Female)				
Male	0.57	0.27–1.22	−1.45	0.148
Ethnicity (ref: Chinese)				
Malay	0.87	0.39–1.97	−0.33	0.743
Indian	0.85	0.43–1.69	−0.46	0.645
Others	0.40	0.10–1.54	−1.34	0.180
Marital status (ref: Married)				
Never married	1.31	0.57–2.98	0.64	0.524
Sep/Divorced/Widowed	3.94	0.73–21.29	1.59	0.112
Education (ref: University)				
Primary & below	0.04	0.002–0.72	−2.18	0.030
Secondary	0.49	0.10–2.36	−0.89	0.376
Pre-U/Diploma/Poly	0.89	0.28–2.81	−0.19	0.847
Employment (ref: Employed)				
Unemployed	7.81	1.54–39.70	2.48	0.013
Economically inactive	1.59	0.39–6.54	0.64	0.521
Income (ref: >SGD10,000)				
<SGD2000	0.27	0.05–1.53	−1.48	0.140
SGD2000–3999	0.11	0.02–0.45	−3.06	0.002
SGD4000–5999	0.14	0.03–0.56	−2.78	0.006
SGD6000–9999	0.34	0.09–1.23	−1.64	0.101
Contact experience (ref: No)				
Personal experience: Yes	0.03	0.003–0.42	−2.63	0.009
Family/friends exp: Yes	3.54	1.32–9.49	2.51	0.012

CI: confidence interval; IPW: inverse probability weighting; OR: odds ratio; SGD: Singapore dollars

Table S6. Doubly robust IPW linear regression on "weak-not-sick" stigma.

	β	95% CI	t	*P*
Survey year (ref: 2015)				
2023	−0.74	−1.10 to −0.38	−4.05	<0.001
Age group (ref: 18–34 years)				
35–49 years	0.74	0.12–1.36	2.35	0.019
50–65 years	1.42	0.74–2.10	4.09	<0.001
Sex (ref: Female)				
Male	0.31	−0.15 to 0.77	1.33	0.184
Ethnicity (ref: Chinese)				
Malay	0.37	−0.08 to 0.83	1.61	0.108
Indian	0.35	−0.09 to 0.78	1.57	0.117
Others	−0.68	−1.38 to 0.03	−1.88	0.060
Marital status (ref: Married)				
Never married	−0.31	−0.94 to 0.32	−0.96	0.335
Sep/Divorced/Widowed	−0.12	−0.93 to 0.68	−0.30	0.765
Education (ref: University)				
Primary & below	0.90	−0.12 to 1.93	1.73	0.084
Secondary	0.66	0.04 to 1.28	2.08	0.038
Pre-U/Diploma/Poly	0.19	−0.42 to 0.79	0.61	0.540
Employment (ref: Employed)				
Unemployed	−1.35	−2.60 to −0.11	−2.13	0.034
Economically inactive	0.01	−0.73 to 0.74	0.01	0.988
Income (ref: >SGD10,000)				
<SGD2000	1.34	0.33–2.36	2.59	0.010
SGD2000–3999	1.47	0.41–2.54	2.71	0.007
SGD4000–5999	1.22	0.24–2.20	2.44	0.015
SGD6000–9999	0.80	−0.17 to 1.76	1.62	0.106
Contact experience (ref: No)				
Personal experience: Yes	0.95	0.12–1.78	2.25	0.024
Family/friends exp: Yes	−0.36	−0.86 to 0.15	−1.39	0.164

CI: confidence interval; IPW: inverse probability weighting; SGD: Singapore dollars
β = unstandardised regression coefficient

Table S7. Doubly robust IPW linear regression on "dangerous-unpredictable" stigma.

	β	95% CI	t	*P*
Survey year (ref: 2015)				
2023	−0.54	−0.98 to −0.10	−2.40	0.017
Age group (ref: 18–34 years)				
35–49 years	0.02	−0.73 to 0.78	0.06	0.951
50–65 years	0.10	−0.75 to 0.95	0.23	0.816
Sex (ref: Female)				
Male	0.48	−0.01 to 0.97	1.92	0.055
Ethnicity (ref: Chinese)				
Malay	−0.13	−0.69 to 0.42	−0.47	0.640
Indian	−0.39	−0.87 to 0.09	−1.60	0.111
Others	−0.40	−1.19 to 0.39	−0.99	0.324
Marital status (ref: Married)				
Never married	−0.38	−1.07 to 0.31	−1.08	0.279
Sep/Divorced/Widowed	−0.77	−1.80 to 0.25	−1.48	0.139
Education (ref: University)				
Primary & below	0.53	−0.86 to 1.92	0.75	0.455
Secondary	0.04	−0.80 to 0.87	0.09	0.929
Pre-U/Diploma/Poly	−0.43	−1.09 to 0.22	−1.31	0.192
Employment (ref: Employed)				
Unemployed	−0.79	−1.89 to 0.30	−1.43	0.153
Economically inactive	−0.68	−1.51 to 0.15	−1.60	0.110
Income (ref: >SGD10,000)				
<SGD2000	2.29	1.09–3.48	3.75	<0.001
SGD2000–3999	1.27	0.13–2.41	2.19	0.029
SGD4000–5999	2.09	1.02–3.17	3.81	<0.001
SGD6000–9999	1.28	0.09–2.46	2.11	0.035
Contact experience (ref: No)				
Personal experience: Yes	1.27	−0.04 to 2.57	1.91	0.057
Family/friends exp: Yes	−0.35	−0.95 to 0.25	−1.14	0.254

CI: confidence interval; IPW: inverse probability weighting; SGD: Singapore dollars
β = unstandardised regression coefficient

Table S8. Doubly robust IPW linear regression on social distance stigma.

	β	95% CI	t	*P*
Survey year (ref: 2015)				
2023	−0.19	−0.74 to 0.36	−0.69	0.492
Age group (ref: 18–34 years)				
35–49 years	0.69	−0.18 to 1.56	1.56	0.119
50–65 years	0.02	−0.96 to 1.01	0.05	0.962
Sex (ref: Female)				
Male	0.23	−0.42 to 0.88	0.70	0.485
Ethnicity (ref: Chinese)				
Malay	−1.55	−2.28 to −0.83	−4.22	<0.001
Indian	−1.30	−1.92 to −0.68	−4.11	<0.001
Others	−1.08	−1.94 to −0.21	−2.45	0.015
Marital status (ref: Married)				
Never married	−0.03	−0.85 to 0.80	−0.06	0.952
Sep/Divorced/Widowed	−1.02	−2.52 to 0.47	−1.34	0.179
Education (ref: University)				
Primary & below	0.58	−1.67 to 2.83	0.50	0.614
Secondary	−1.00	−2.14 to 0.15	−1.71	0.087
Pre-U/Diploma/Poly	−0.63	−1.45 to 0.19	−1.50	0.133
Employment (ref: Employed)				
Unemployed	0.61	−1.62 to 2.84	0.54	0.590
Economically inactive	−0.91	−2.38 to 0.55	−1.23	0.221
Income (ref: >SGD10,000)				
<SGD2000	1.04	−0.68 to 2.77	1.19	0.235
SGD2000–3999	0.28	−1.20 to 1.76	0.37	0.713
SGD4000–5999	0.17	−1.17 to 1.52	0.25	0.802
SGD6000–9999	0.15	−1.33 to 1.63	0.20	0.842
Contact experience (ref: No)				
Personal experience: Yes	0.03	−1.68 to 1.74	0.03	0.976
Family/friends exp: Yes	−1.39	−2.11 to −0.68	−3.83	<0.001

CI: confidence interval; IPW: inverse probability weighting; SGD: Singapore dollars

β = unstandardised regression coefficient

Table S9. Covariate balance before and after IPW.

Covariate	MM2015 %	MM2023 %	SMD before IPW	SMD after IPW
Sex				
Female	46.4	48.5	0.04	0.07
Age group				
18–34 years	35.1	32.0	−0.07	−0.03
35–49 years	31.3	31.1	0.00	0.01
Ethnicity				
Malay	12.9	13.0	0.00	−0.03
Indian	9.2	9.3	0.00	−0.08
Others	3.2	3.4	0.01	0.03
Marital status				
Married	64.2	63.5	−0.02	−0.03
Separated/Divorced/ Widowed	6.1	6.6	0.02	0.02
Education				
Primary & below	15.0	4.0	−0.38†	−0.11
Secondary	25.9	20.3	−0.13	0.00
Pre-U/Diploma/Poly	29.7	28.8	−0.02	−0.03
Employment				
Unemployed	4.0	3.6	−0.02	−0.05
Economically inactive	15.9	11.2	−0.14	−0.21‡
Personal income (SGD)				
2000–3999	33.0	24.5	−0.19	0.03
4000–5999	15.9	22.4	0.17	−0.05
6000–9999	8.5	14.7	0.20	−0.09
>10,000	3.1	9.1	0.26†	−0.07
Contact experience				
Personal experience: Yes	6.2	4.4	−0.08	0.06
Family/friends exp: Yes	14.2	18.8	0.12	0.06

IPW: inverse probability weighting; SMD: standardised mean difference; SGD: Singapore dollars

† SMD≥0.10 before IPW (substantial imbalance). ‡ Residual SMD≥0.10 after IPW (see text). Threshold for adequate balance: |SMD|<0.10.