

Table 2: Percentage (and 95% CI) of respondents mentioning each category in response to the open-ended question about how the person in the vignette could best be helped

Type of help mentioned	Country	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
See a doctor/GP	Australia	56.3 (52.5–60.0)	49.3 (44.4–54.1)	32.1 (27.6–37.0)	21.0 (17.2–25.4)
	Japan	20.8 (17.2–24.4)	20.0 (16.5–23.5)	13.4 (10.4–16.4)	15.8 (12.6–19.0)
See a psychiatrist	Australia	13.0 (10.7–15.6)	18.2 (14.9–22.0)	32.0 (27.8–36.4)	27.9 (23.6–32.6)
	Japan	43.8 (39.4–48.2)	49.0 (44.6–53.4)	58.6 (54.3–62.9)	60.0 (55.7–64.3)
Take medication	Australia	6.1 (4.7–7.8)	8.7 (6.5–11.5)	8.3 (6.0–11.4)	11.7 (9.0–15.1)
	Japan	3.4 (1.8–5.0)	8.0 (5.6–10.4)	7.8 (5.4–10.2)	5.8 (3.7–7.9)
See a counselor or have counseling	Australia	27.7 (24.7–30.9)	37.4 (33.2–41.8)	28.9 (24.7–33.4)	20.8 (17.3–24.7)
	Japan	62.0 (57.7–66.3)	74.8 (71.0–78.6)	76.4 (72.7–80.1)	72.2 (68.3–76.1)
Talk over with friends/family	Australia	22.9 (19.8–26.4)	24.0 (20.0–28.6)	21.9 (18.0–26.3)	14.4 (11.2–18.4)
	Japan	71.8 (67.8–75.8)	70.4 (66.4–74.4)	43.8 (39.4–48.2)	45.2 (40.8–49.6)
Person must first recognize problem	Australia	5.4 (3.8–7.6)	6.6 (4.3–9.9)	5.3 (3.3–8.4)	6.0 (4.1–8.7)
	Japan	23.4 (19.7–27.1)	24.4 (20.6–28.2)	23.4 (19.7–27.1)	21.8 (18.2–25.4)
Other	Australia	37.9 (34.0–41.8)	36.0 (31.1–41.1)	40.1 (34.9–45.4)	49.8 (44.6–55.0)
	Japan	8.4 (6.0–10.8)	2.6 (1.2–4.0)	4.4 (2.6–6.2)	7.2 (4.9–9.5)
Don't know	Australia	1.8 (1.1–3.0)	2.5 (1.4–4.6)	2.0 (1.0–3.7)	4.8 (3.1–7.5)
	Japan	0.4 (0.0–1.0)	1.0 (0.1–1.9)	1.6 (0.5–2.7)	1.2 (0.2–2.2)

Note: because multiple responses were possible, these percentages do not add up to 100%

Table 3: Percentage (95% CI) of respondents rating each type of person as "helpful" for the person described in the vignette

Person	Country	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
GP	Australia	87.3 (84.0–90.0)	84.1 (80.8–87.0)	76.7 (72.8–80.2)	76.3 (72.1–80.0)
	Japan	30.4 (26.4–34.4)	26.0 (22.1–29.9)	19.0 (15.5–22.5)	22.8 (19.1–26.5)
Pharmacist	Australia	35.4 (31.3–39.6)	33.2 (29.1–37.6)	23.6 (20.0–27.6)	28.1 (24.1–32.5)
	Japan	6.8 (4.6–9.0)	6.6 (4.4–8.8)	4.2 (2.4–6.0)	4.2 (2.4–6.0)
Counselor	Australia	82.2 (78.6–85.4)	85.5 (82.1–88.3)	85.0 (81.8–87.8)	83.1 (79.5–86.1)
	Japan	85.8 (82.7–88.9)	87.6 (84.7–90.5)	87.0 (84.0–90.0)	88.6 (85.8–91.4)
Social worker	Australia	62.8 (58.3–67.0)	67.2 (62.8–71.4)	68.4 (64.0–72.5)	79.1 (74.8–82.8)
	Japan	73.4 (69.5–77.3)	70.2 (66.2–74.2)	68.4 (64.3–72.5)	75.2 (71.4–79.0)
Phone counseling	Australia	63.5 (59.0–67.9)	66.2 (61.8–70.4)	56.6 (52.4–60.7)	47.5 (43.0–52.1)
	Japan	42.4 (38.1–46.7)	49.8 (45.4–54.2)	35.6 (31.4–39.8)	29.6 (25.6–33.6)
Psychiatrist	Australia	65.0 (60.8–69.0)	71.3 (67.1–75.1)	80.5 (76.5–84.0)	80.2 (76.4–83.5)
	Japan	69.4 (65.3–73.5)	72.4 (68.5–76.3)	73.0 (69.1–76.9)	79.0 (75.4–82.6)
Psychologist	Australia	66.9 (62.5–71.1)	69.7 (65.2–73.8)	73.6 (69.4–77.4)	74.9 (70.8–78.6)
	Japan	56.6 (52.2–61.0)	51.2 (46.8–55.6)	56.2 (51.8–60.6)	65.2 (61.0–69.4)
Close family	Australia	67.9 (63.1–72.3)	64.8 (60.1–69.2)	62.7 (58.4–66.8)	61.4 (56.2–66.3)
	Japan	85.0 (81.9–88.1)	84.2 (81.0–87.4)	76.8 (73.1–80.5)	80.4 (76.9–83.9)
Close friends	Australia	78.2 (74.1–81.7)	77.1 (73.2–80.5)	73.0 (68.9–76.7)	72.0 (67.5–76.1)
	Japan	84.8 (81.6–88.0)	83.2 (79.9–86.5)	70.4 (66.4–74.4)	70.2 (66.2–74.2)
Naturopath/herbalist	Australia	34.9 (30.8–39.3)	31.8 (27.5–36.5)	23.7 (20.2–27.7)	19.4 (16.3–22.9)
	Japan	11.2 (8.4–14.0)	14.8 (11.7–17.9)	8.4 (6.0–10.8)	9.0 (6.5–11.5)
Clergy	Australia	45.3 (41.0–49.7)	51.7 (47.3–56.0)	37.2 (33.1–41.4)	42.9 (38.3–47.7)
	Japan	13.6 (10.6–16.6)	20.0 (16.5–23.5)	11.6 (8.8–14.4)	16.2 (13.0–19.4)
Deal with it alone	Australia	13.1 (10.1–16.8)	9.7 (7.0–13.2)	11.4 (8.4–15.3)	11.8 (8.9–15.6)
	Japan	24.4 (20.6–28.2)	20.4 (16.9–23.9)	22.4 (18.7–26.1)	21.4 (17.8–25.0)

Table 4: Percentage (95% CI) of respondents rating each type of medication as "helpful" for the person described in the vignette

Medication	Country	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
Vitamins, minerals	Australia	50.2 (45.4–55.1)	43.7 (39.2–48.3)	31.3 (27.4–35.5)	33.2 (28.9–37.8)
	Japan	20.2 (16.7–23.7)	16.4 (13.1–19.7)	10.6 (7.9–13.3)	12.4 (9.5–15.3)
Pain relievers	Australia	14.8 (11.7–18.5)	12.3 (9.6–15.7)	7.3 (5.3–9.9)	10.2 (7.7–13.4)
	Japan	4.4 (2.6–6.2)	3.6 (2.0–5.2)	4.2 (2.4–6.0)	4.6 (2.8–6.4)
Antidepressants	Australia	46.7 (42.4–51.1)	52.5 (48.1–56.7)	49.9 (45.7–54.2)	42.6 (37.9–47.5)
	Japan	34.8 (30.6–39.0)	36.0 (31.8–40.2)	38.6 (34.3–42.9)	39.8 (35.5–44.1)
Antibiotics	Australia	10.4 (7.9–13.7)	7.9 (5.7–10.8)	4.0 (2.5–6.2)	6.4 (4.5–9.1)
	Japan	6.2 (4.1–8.3)	6.0 (3.9–8.1)	4.8 (2.9–6.7)	8.4 (6.0–10.8)
Sleeping pills	Australia	23.9 (20.1–28.1)	21.9 (18.6–25.6)	18.1 (14.7–22.1)	11.6 (8.8–15.1)
	Japan	31.6 (27.5–35.7)	26.2 (22.3–30.1)	21.4 (17.8–25.0)	24.8 (21.0–28.6)
Antipsychotics	Australia	11.2 (8.4–14.8)	16.5 (13.3–20.3)	33.1 (29.0–37.5)	38.2 (34.0–42.6)
	Japan	22.6 (18.9–26.3)	21.8 (18.2–25.4)	30.2 (26.2–34.2)	41.2 (36.9–45.5)
Tranquillizers	Australia	13.8 (11.0–17.1)	13.8 (11.0–17.1)	17.2 (14.1–20.8)	15.3 (12.6–18.4)
	Japan	38.4 (34.1–42.7)	37.0 (32.8–41.2)	38.4 (34.1–42.7)	45.4 (41.0–49.8)

lar ratings for the two depression vignettes. The interventions most commonly endorsed as likely to be helpful were seeing a GP, counselor, close friends, physical activity, reading about the problem, getting out more, learning relaxation, or getting information from a health educator. The responses were similar for the schizophrenia vignettes, except that GPs were rated somewhat lower and psychiatrists somewhat higher. Seeing a social worker was also commonly endorsed for the chronic schizophrenia vignette.

In Japan, the most commonly endorsed interventions for the depression vignettes were seeing a counselor, or help from friends and family. For the schizophrenia vignettes, seeing a counselor rated highly again, as did close family. Psychiatrists and social workers were highly endorsed for the chronic schizophrenia vignette.

In neither country was there a high level of endorsement for some standard psychiatric interventions: antidepressants for the depression vignettes, antipsychotics for the schizophrenia vignettes, admission to a psychiatric ward for the schizophrenia vignettes, or psychotherapy for the depression vignettes.

Tables 6, 7, 8 show the data on whether interventions were rated as likely to be harmful. In Australia, "harmful" ratings were most common for dealing with the problem alone, sleeping pills, tranquillizers, ECT and admission to a psychiatric ward. In Japan, such ratings were most common for dealing with the problem alone, pain relievers, admission to a psychiatric ward, ECT and going on a special diet.

Beliefs about outcomes

Table 9 gives the data on beliefs about outcomes after receiving professional help and outcomes without professional help. In Australia, the most common belief is that a person receiving professional help would have either full recovery or full recovery with later relapse. In Japan, the public most commonly believed in either full recovery with relapse or partial recovery with relapse.

Where professional help was not received, Australians were most likely to believe the person would get worse. This was also the most common response in Japan, although it was less frequently endorsed than in Australia.

Discussion

Below we discuss the results from each country separately and then compare the results from the two countries.

Public beliefs in Australia

The Australian public showed a relatively high level of recognition of depression in the vignettes and this rate was much improved on a similar Australian survey carried out in 1995 [13]. Recognition of the schizophrenia vignettes was not as good, but has also improved since the earlier survey. There was a generally low use of generic lay terms such as "stress", "psychological/mental/emotional problems" and "nervous breakdown". An exception is the generic term "mental illness" which was used by around a quarter of respondents for the early schizophrenia vignette and by around a third for the chronic schizophrenia vignette.

When asked about people who could help, the Australian public showed a high endorsement of GPs and coun-

Table 5: Percentage (95% CI) of respondents rating each type of intervention as "helpful" for the person described in the vignette

Intervention	Country	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
Physical activity	Australia	92.0 (89.3–94.1)	92.5 (89.9–94.4)	87.4 (84.2–90.1)	79.6 (75.6–83.1)
	Japan	69.4 (65.3–73.5)	73.4 (69.5–77.3)	73.4 (69.5–77.3)	70.6 (66.6–74.6)
Read about problem	Australia	79.3 (75.3–82.8)	79.8 (75.8–83.3)	79.6 (75.5–83.1)	74.7 (70.6–78.4)
	Japan	60.0 (55.7–64.3)	59.4 (55.1–63.7)	57.6 (53.3–61.9)	46.8 (42.4–51.2)
Get out more	Australia	87.0 (83.8–89.7)	90.3 (87.4–92.6)	87.1 (83.8–89.8)	76.5 (72.3–80.2)
	Japan	67.0 (62.9–71.1)	72.0 (68.1–75.9)	67.2 (63.1–71.3)	61.6 (57.3–65.9)
Learn relaxation	Australia	83.6 (80.1–86.7)	85.3 (81.8–88.2)	77.1 (73.3–80.5)	68.7 (64.4–72.8)
	Japan	38.2 (33.9–42.5)	41.2 (36.9–45.5)	26.2 (22.3–30.1)	29.4 (25.4–33.4)
Cut out alcohol	Australia	56.0 (51.7–60.3)	59.8 (55.3–64.1)	66.1 (61.7–70.2)	53.4 (48.7–58.0)
	Japan	10.0 (7.4–12.6)	14.2 (11.1–17.3)	18.6 (15.2–22.0)	17.2 (13.9–20.5)
Psychotherapy	Australia	44.1 (39.7–48.5)	50.4 (46.0–54.8)	59.1 (54.5–63.6)	62.3 (57.4–66.8)
	Japan	49.0 (44.6–53.4)	48.2 (43.8–52.6)	53.8 (49.4–58.2)	67.0 (62.9–71.1)
Hypnosis	Australia	22.4 (18.8–26.5)	23.9 (20.2–28.1)	29.9 (25.9–34.3)	30.9 (26.8–35.2)
	Japan	28.0 (24.1–31.9)	28.8 (24.8–32.8)	22.4 (18.7–26.1)	33.2 (29.1–37.3)
Psychiatric ward	Australia	16.4 (13.2–20.2)	20.2 (16.7–24.3)	31.9 (27.8–36.4)	37.8 (33.4–42.6)
	Japan	13.6 (10.6–16.6)	12.0 (9.1–14.9)	22.0 (18.4–25.6)	30.0 (26.0–34.0)
ECT	Australia	5.9 (4.0–8.6)	7.2 (4.9–10.4)	6.4 (4.5–9.1)	6.5 (4.4–9.4)
	Japan	2.2 (0.9–3.5)	1.4 (0.4–2.4)	1.4 (0.4–2.4)	1.4 (0.4–2.4)
Occasional drink	Australia	44.4 (40.1–48.9)	41.8 (37.1–46.5)	31.1 (26.9–34.7)	27.3 (23.1–31.9)
	Japan	31.4 (27.3–35.5)	25.0 (21.2–28.8)	15.2 (12.0–18.4)	20.0 (16.5–23.5)
Special diet	Australia	48.3 (43.5–53.1)	45.6 (41.0–50.3)	42.1 (37.9–46.3)	39.3 (35.0–43.9)
	Japan	5.6 (3.6–7.6)	6.0 (3.9–8.1)	4.4 (2.6–6.2)	4.4 (2.6–6.2)
Web site	Australia	57.9 (53.8–61.9)	55.1 (50.4–59.7)	57.5 (53.0–61.8)	44.1 (39.4–49.0)
	Japan	45.6 (41.2–50.0)	45.8 (41.4–50.2)	48.4 (44.0–52.8)	47.0 (42.6–51.4)
Expert via email	Australia	53.8 (49.6–58.0)	49.6 (44.9–54.3)	55.4 (51.2–59.5)	44.7 (40.1–49.5)
	Japan	54.0 (49.6–58.4)	53.6 (49.2–58.0)	56.8 (52.4–61.2)	56.6 (52.2–61.0)
Book	Australia	69.1 (65.3–72.6)	64.7 (60.0–69.1)	70.5 (66.5–74.2)	59.2 (54.3–63.9)
	Japan	54.0 (49.6–58.4)	49.8 (45.4–54.2)	57.4 (53.1–61.7)	53.6 (49.2–58.0)
Health educator	Australia	86.7 (83.6–89.3)	85.9 (82.3–88.8)	86.2 (83.1–88.8)	83.8 (79.7–87.2)
	Japan	55.2 (50.8–59.6)	51.2 (46.8–55.6)	46.6 (42.2–51.0)	50.6 (46.2–55.0)

selors. Psychiatrists were also highly endorsed for the schizophrenia vignettes, more so than in the earlier Australian survey [13]. For medications, only around half endorsed antidepressants for depression, and around a third endorsed antipsychotics for schizophrenia. There were similarly low rates of endorsement of psychotherapy for depression (around half the population) and admission to a psychiatric ward for schizophrenia (around a third). While these endorsement rates are higher than in the 1995 survey [13], they are still low given that these are standard treatments endorsed by most Australian mental health professionals [22,23]. This gap between public and professional beliefs on medication may limit willingness to accept some recommended interventions.

The Australian public sees a range of lifestyle interventions as likely to be helpful, such as increased physical activity, reading about the problem, getting out and about more, and relaxation training. Some of these interven-

tions have supporting evidence for the treatment of depression [24], but not for schizophrenia. In general, the beliefs of the Australian public about treatment are more positive towards lifestyle interventions than towards medical or psychological interventions.

Dealing with the problem alone was seen as likely to be harmful by most Australians, more so than in the earlier survey [13]. A change in such beliefs may help improve the comparatively low rate of help-seeking observed in a 1997 survey of the Australian public [25]. There was also a general belief that seeking professional help would produce a much better outcome for all disorders portrayed in the vignettes, with better outcomes expected for depression than for schizophrenia.

Public beliefs in Japan

When asked what was wrong with the people portrayed in the vignettes, the Japanese public recognized that there was a mental health problem, but tended to use non-psy-

Table 6: Percentage (95% CI) of respondents rating each type of person as "harmful" for the person described in the vignette

Person	Country	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
GP	Australia	0.5 (0.2–1.6)	1.1 (0.5–2.5)	2.5 (1.5–4.3)	2.7 (1.5–4.7)
	Japan	9.4 (6.8–12.0)	9.0 (6.5–11.5)	12.6 (9.7–15.5)	12.8 (9.9–15.7)
Pharmacist	Australia	8.7 (6.3–12.1)	8.1 (5.7–11.5)	8.6 (6.4–11.4)	8.2 (5.8–11.5)
	Japan	23.6 (19.9–27.3)	22.0 (18.4–25.6)	22.4 (18.7–26.1)	23.0 (19.3–26.7)
Counselor	Australia	3.1 (1.8–5.3)	2.3 (1.3–3.8)	3.0 (1.8–5.0)	2.4 (1.3–4.4)
	Japan	1.0 (0.1–1.9)	1.0 (0.1–1.9)	1.4 (0.4–2.4)	1.6 (0.5–2.7)
Social worker	Australia	4.5 (3.0–6.7)	5.5 (3.6–8.2)	4.4 (3.0–6.5)	3.0 (1.8–5.0)
	Japan	1.4 (0.4–2.4)	3.0 (1.5–4.5)	4.8 (2.9–6.7)	3.0 (1.5–4.5)
Phone counseling	Australia	5.9 (4.1–8.6)	6.3 (4.2–9.2)	7.6 (5.3–10.9)	11.1 (8.4–14.6)
	Japan	8.6 (6.1–11.1)	6.6 (4.4–8.8)	11.0 (8.2–13.8)	12.0 (9.1–14.9)
Psychiatrist	Australia	7.1 (5.0–10.1)	8.1 (5.9–11.0)	5.2 (3.5–7.7)	4.6 (3.1–6.8)
	Japan	5.4 (3.4–7.4)	4.8 (2.9–6.7)	6.0 (3.9–8.1)	2.8 (1.3–4.3)
Psychologist	Australia	5.1 (3.3–7.9)	5.2 (3.5–7.7)	3.2 (2.0–5.0)	3.6 (2.3–5.6)
	Japan	6.0 (3.9–8.1)	8.0 (5.6–10.4)	6.0 (3.9–8.1)	5.0 (3.1–6.9)
Close family	Australia	4.9 (3.3–7.1)	4.1 (2.7–6.1)	5.6 (3.9–8.0)	5.3 (3.7–7.7)
	Japan	1.6 (0.5–2.7)	1.6 (0.5–2.7)	4.6 (2.8–6.4)	4.4 (2.6–6.2)
Close friends	Australia	2.1 (1.1–3.7)	2.6 (1.5–4.5)	3.0 (1.8–4.8)	3.3 (2.0–5.3)
	Japan	1.8 (0.6–3.0)	1.4 (0.4–2.4)	4.0 (2.3–5.7)	4.2 (2.4–6.0)
Naturopath/herbalist	Australia	11.1 (8.5–14.5)	13.3 (10.5–16.7)	15.1 (12.1–18.7)	15.0 (11.8–18.9)
	Japan	18.8 (15.4–22.2)	17.2 (13.9–20.5)	18.2 (14.8–21.6)	21.4 (17.8–25.0)
Clergy	Australia	8.1 (5.8–11.1)	9.3 (7.2–11.9)	11.6 (8.9–15.0)	10.3 (7.7–13.6)
	Japan	24.2 (20.4–28.0)	14.6 (11.5–17.7)	26.0 (22.1–29.9)	24.4 (20.6–28.2)
Deal with it alone	Australia	64.0 (59.6–68.3)	74.8 (70.4–78.7)	70.4 (65.9–74.5)	67.7 (62.9–72.2)
	Japan	41.4 (37.1–45.7)	42.6 (38.3–46.9)	38.8 (34.5–43.1)	40.8 (36.5–45.1)

Table 7: Percentage (95% CI) of respondents rating each type of medication as "harmful" for the person described in the vignette

Medication	Country	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
Vitamins, minerals	Australia	4.4 (2.9–6.7)	5.4 (3.7–7.9)	5.8 (4.1–8.4)	6.4 (4.5–9.0)
	Japan	14.6 (11.5–17.7)	13.8 (10.8–16.8)	14.6 (11.5–17.7)	14.8 (11.7–17.9)
Pain relievers	Australia	37.7 (33.0–42.6)	37.3 (33.1–41.7)	38.9 (34.6–43.4)	34.5 (30.0–39.3)
	Japan	43.4 (39.0–47.8)	42.6 (38.3–46.9)	36.6 (32.4–40.8)	35.6 (31.4–39.8)
Antidepressants	Australia	27.5 (23.5–31.8)	23.4 (19.8–27.4)	22.6 (19.2–26.5)	29.3 (25.2–33.8)
	Japan	18.2 (14.8–21.6)	21.2 (17.6–24.8)	15.2 (12.0–18.4)	10.6 (7.9–13.3)
Antibiotics	Australia	38.3 (33.4–43.4)	37.8 (33.0–42.8)	35.9 (31.5–40.4)	36.9 (32.4–41.7)
	Japan	29.8 (25.8–33.8)	37.6 (33.3–41.9)	29.0 (25.0–33.0)	22.8 (19.1–26.5)
Sleeping pills	Australia	49.6 (44.9–54.3)	50.3 (45.9–54.7)	53.1 (48.2–57.9)	58.8 (54.3–63.1)
	Japan	27.0 (23.1–30.9)	27.8 (23.9–31.7)	30.0 (26.0–34.0)	27.0 (23.1–30.9)
Antipsychotics	Australia	48.3 (43.5–53.1)	40.4 (35.9–45.0)	24.5 (20.6–28.8)	24.5 (20.9–28.5)
	Japan	19.0 (15.5–22.5)	23.8 (20.1–27.5)	17.4 (14.1–20.7)	8.4 (6.0–10.8)
Tranquillizers	Australia	60.4 (55.8–64.8)	60.1 (55.5–64.5)	47.5 (42.9–52.2)	55.7 (50.9–60.4)
	Japan	15.8 (12.6–19.0)	17.6 (14.3–20.9)	13.4 (10.4–16.4)	9.4 (6.8–12.0)

chiatric labels. Fewer than a fifth used the term "schizophrenia" for the early schizophrenia vignette, but this increased to a third for the chronic schizophrenia vignette. Previous research with Japanese teachers has also shown a low rate of using the term "schizophrenia" in relation to a

vignette [26]. This term has very negative connotations in Japan [27], leading psychiatrists to be reluctant to give a diagnosis of schizophrenia to their patients [28]. There have also been proposals to replace the term with a more socially acceptable one [27].

Table 8: Percentage (95% CI) of respondents rating each type of intervention as "harmful" for the person described in the vignette

Intervention	Country	Depression Vignette	Depression/ Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
Physical activity	Australia	0.8 (0.2–2.3)	0.3 (0.1–2.2)	0.4 (0.1–1.3)	0.6 (0.2–1.6)
	Japan	3.6 (2.0–5.2)	4.0 (2.3–5.7)	3.8 (2.1–5.5)	3.6 (2.0–5.2)
Read about problem	Australia	4.1 (2.7–6.2)	5.2 (3.6–7.5)	4.6 (3.1–6.8)	3.6 (2.4–5.4)
	Japan	7.6 (5.3–9.9)	7.8 (5.4–10.2)	8.0 (5.6–10.4)	10.4 (7.7–13.1)
Get out more	Australia	0.4 (0.1–1.7)	0.3 (0.1–1.5)	1.7 (0.9–3.2)	2.2 (1.2–4.1)
	Japan	3.0 (1.5–4.5)	4.8 (2.9–6.7)	7.4 (5.1–9.7)	4.6 (2.8–6.4)
Learn relaxation	Australia	1.5 (0.7–3.2)	0.8 (0.3–2.0)	1.0 (0.5–2.3)	3.6 (2.0–6.1)
	Japan	7.6 (5.3–9.9)	8.2 (5.8–10.6)	16.4 (13.1–19.7)	13.6 (10.6–16.6)
Cut out alcohol	Australia	4.7 (3.1–7.0)	5.3 (3.4–8.0)	3.1 (1.9–5.1)	2.7 (1.6–4.7)
	Japan	17.2 (13.9–20.5)	15.0 (11.9–18.1)	11.4 (8.6–14.2)	12.2 (9.3–15.1)
Psychotherapy	Australia	10.0 (7.5–13.1)	10.6 (8.0–13.9)	5.7 (3.9–8.2)	7.2 (5.2–10.0)
	Japan	7.4 (5.1–9.7)	4.2 (2.4–6.0)	5.2 (3.2–7.2)	2.6 (1.2–4.0)
Hypnosis	Australia	17.0 (13.9–20.7)	20.4 (16.5–24.9)	12.8 (10.1–16.2)	16.7 (13.4–20.5)
	Japan	14.2 (11.1–17.3)	14.0 (10.9–17.1)	17.4 (14.1–20.7)	10.4 (7.7–13.1)
Psychiatric ward	Australia	53.3 (48.4–58.1)	49.2 (44.4–54.1)	38.9 (34.4–43.5)	33.2 (28.9–37.7)
	Japan	43.0 (38.6–47.4)	43.6 (39.2–48.0)	38.0 (33.7–42.3)	24.6 (20.8–28.4)
ECT	Australia	69.4 (64.4–74.0)	65.9 (61.1–70.5)	63.4 (58.5–68.0)	65.4 (60.5–69.9)
	Japan	50.2 (45.8–54.6)	54.4 (50.0–58.8)	50.6 (46.2–55.0)	44.0 (39.6–48.4)
Occasional drink	Australia	15.4 (12.6–18.7)	19.1 (15.6–23.2)	29.8 (25.9–34.1)	25.2 (21.3–29.7)
	Japan	17.4 (14.1–20.7)	20.2 (16.7–23.7)	31.4 (27.3–35.5)	26.8 (22.9–30.7)
Special diet	Australia	7.7 (5.7–10.3)	9.2 (6.9–12.2)	7.7 (5.6–10.6)	7.1 (5.0–9.9)
	Japan	55.2 (50.8–59.6)	55.6 (51.2–60.0)	53.2 (48.8–57.6)	50.4 (46.0–54.8)
Web site	Australia	14.8 (12.0–18.0)	15.3 (12.3–18.8)	12.7 (10.3–15.6)	19.3 (16.2–22.8)
	Japan	8.0 (5.6–10.4)	6.2 (4.1–8.3)	7.2 (4.9–9.5)	9.6 (7.0–12.2)
Expert via email	Australia	14.3 (11.6–17.4)	16.4 (13.1–20.3)	13.8 (11.3–16.8)	17.3 (14.2–20.8)
	Japan	5.0 (3.1–6.9)	5.6 (3.6–7.6)	5.2 (3.2–7.2)	5.8 (3.7–7.9)
Book	Australia	7.7 (5.8–10.1)	9.0 (6.9–11.6)	7.1 (5.1–9.7)	9.4 (7.0–12.4)
	Japan	3.0 (1.5–4.5)	4.4 (2.6–6.2)	4.2 (2.4–6.0)	5.0 (3.1–6.9)
Health educator	Australia	1.4 (0.7–2.8)	2.0 (1.1–3.5)	1.4 (0.7–2.8)	1.6 (0.8–3.2)
	Japan	4.4 (2.6–6.2)	3.8 (2.1–5.5)	5.2 (3.2–7.2)	4.6 (2.8–6.4)

When asked about methods of help, the Japanese public most frequently endorsed counselors, close family and friends. The belief in the helpfulness of counselors has been reported previously in a study of Japanese teachers [26]. Psychiatrists and social workers also received a high level of endorsement for the chronic schizophrenia vignette. Dealing with the problem alone was seen to be harmful by more people than helpful, but still around a fifth of the population saw it as helpful. Previous research has shown that there is considerable stigma on seeking help in Japan and a strong desire for confidentiality, leading some people to seek services far away from their place of residence and to pay cash rather than use health insurance (which would lead to their possible identification) [29]. More people saw psychiatric drugs such as antidepressants and antipsychotics as helpful than harmful, but endorsement of these treatments was not high, consistent with results in other developed countries. Admission to a psychiatric ward was in general not viewed favorably, but was more accepted for chronic schizophre-

nia. This finding is interesting given the high rate of psychiatric hospitalization in Japan compared to other countries. Dietary changes were also seen very negatively; the reason for this is not clear.

When asked about outcomes, the Japanese public was most likely to believe in partial recovery if the person received professional help, but that the person would get worse if there was no help. There is therefore a general belief that professional help would be beneficial, with better outcomes expected for depression than for schizophrenia.

Comparison of Australia and Japan

When asked what was wrong with the people portrayed in the vignettes, the Australian public was generally more likely than the Japanese public to use the term "depression" and less likely to use non-psychiatric terms. However, for the schizophrenia vignettes, Australians used the term "schizophrenia" more often for the early schizophre-

Table 9: Percentage (95% CI) of respondents giving each outcome as likely for the person described in the vignette

Likely outcome	Country	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
With professional help					
Full recovery	Australia	37.3 (32.8–42.1)	29.6 (25.5–34.1)	24.8 (21.1–29.0)	15.8 (12.4–19.9)
	Japan	7.4 (5.1–9.7)	5.8 (3.7–7.9)	4.4 (2.6–6.2)	2.8 (1.3–4.3)
Full recovery with relapse	Australia	43.6 (39.2–48.1)	48.2 (43.6–52.8)	47.3 (43.0–51.5)	38.9 (34.3–43.7)
	Japan	37.2 (32.9–41.5)	33.8 (29.6–38.0)	34.6 (30.4–38.8)	27.8 (23.9–31.7)
Partial recovery	Australia	9.9 (7.6–12.8)	9.0 (6.9–11.7)	12.8 (10.0–16.2)	19.1 (15.9–22.7)
	Japan	14.8 (11.7–17.9)	15.4 (12.2–18.6)	13.2 (10.2–16.2)	13.6 (10.6–16.6)
Partial recovery with relapse	Australia	5.8 (4.0–8.2)	9.5 (7.1–12.6)	11.9 (9.5–14.9)	21.4 (17.9–25.5)
	Japan	37.4 (33.1–41.7)	40.6 (36.3–44.9)	42.2 (37.9–46.5)	52.8 (48.4–57.2)
No improvement	Australia	0.1 (0.0–0.8)	0.3 (0.1–1.6)	0.3 (0.0–2.3)	0.8 (0.3–2.0)
	Japan	2.4 (1.1–3.7)	1.2 (0.2–2.2)	2.4 (1.1–3.7)	1.6 (0.5–2.7)
Get worse	Australia	0.5 (0.1–1.9)	0.2 (0.0–1.3)	0.2 (0.0–2.4)	0.3 (0.1–1.3)
	Japan	0.0 (0.0–0.0)	0.2 (0.0–0.6)	0.2 (0.0–0.6)	0.0 (0.0–0.0)
Don't know	Australia	2.8 (1.7–4.7)	3.1 (1.9–4.9)	2.8 (1.5–4.9)	3.6 (2.3–5.7)
	Japan	0.8 (0.0–1.6)	3.0 (1.5–4.5)	3.0 (1.5–4.5)	1.4 (0.4–2.4)
Without professional help					
Full recovery	Australia	0.6 (0.2–1.9)	0.4 (0.1–1.7)	0.6 (0.2–1.6)	0.1 (0.0–1.2)
	Japan	0.6 (0.0–1.3)	0.8 (0.0–1.6)	0.0 (0.0–0.0)	0.4 (0.0–1.0)
Full recovery with relapse	Australia	2.2 (1.2–4.2)	1.5 (0.8–2.8)	0.7 (0.2–2.3)	0.5 (0.1–1.7)
	Japan	4.2 (2.4–6.0)	2.6 (1.2–4.0)	2.6 (1.2–4.0)	1.2 (0.2–2.2)
Partial recovery	Australia	2.8 (1.6–4.8)	2.5 (1.4–4.6)	0.9 (0.4–2.1)	1.2 (0.5–2.7)
	Japan	3.8 (2.1–5.5)	3.8 (2.1–5.5)	2.6 (1.2–4.0)	1.2 (0.2–2.2)
Partial recovery with relapse	Australia	9.9 (7.4–13.0)	6.7 (4.7–9.3)	3.7 (2.5–5.6)	1.2 (0.5–3.0)
	Japan	12.4 (9.5–15.3)	11.2 (8.4–14.0)	8.6 (6.1–11.1)	4.4 (2.6–6.2)
No improvement	Australia	19.3 (16.2–22.9)	14.2 (11.4–17.5)	14.7 (11.7–18.3)	19.4 (15.9–23.4)
	Japan	29.8 (25.8–33.8)	26.4 (22.5–30.3)	33.6 (29.4–37.8)	39.4 (35.1–43.7)
Get worse	Australia	63.9 (59.4–68.1)	72.0 (67.9–75.9)	78.0 (74.2–81.4)	76.8 (72.2–80.8)
	Japan	47.6 (43.2–52.0)	50.8 (46.4–55.2)	49.0 (44.6–53.4)	53.2 (48.8–57.6)
Don't know	Australia	1.3 (0.6–2.7)	2.7 (1.4–5.0)	1.3 (0.6–2.9)	0.9 (0.3–2.5)
	Japan	1.6 (0.5–2.7)	4.4 (2.6–6.2)	3.6 (2.0–5.2)	0.2 (0.0–0.6)

nia vignette than for the chronic vignette, whereas the Japanese applied it more to the chronic vignette. The Japanese public may be reserving psychiatric labels only for the more severe cases of mental disorder.

When asked about sources of help, the most striking difference between the two countries was in attitudes to GPs, who were seen by the Australians as likely to be helpful much more often than by the Japanese. This difference may be related to the nature of the health systems in the two countries. In Australia, GPs are seen as the first point of contact for any health problem and the gateway to other services. There have been efforts in Australia to improve the training of GPs in mental health and to encourage the public to seek help from GPs for mental disorders. In Japan, the role of the GP is an extremely important issue as well, but their interest in psychiatric treatment at the moment is not necessarily great, and it is difficult to say that their ability to diagnose psychiatric

patients correctly is sufficient. Currently, calls are growing regarding the importance of re-educating GPs in psychiatric medicine, and in future, if this is realized, GPs should be able to play a suitable role.

Compared to Australians, the Japanese more often endorse the helpfulness of close family and dealing with the problem on one's own, perhaps reflecting a cultural difference in the extent to which mental health issues should be a private matter or perhaps a lack of knowledge. Similarly, the Japanese were much less positive about receiving information from a health educator, but had similar beliefs to Australians about the helpfulness of more private information sources, such as books and the internet.

Australians were much more positive than the Japanese about lifestyle interventions such as diet, physical activity, getting out more, relaxation, and cutting out alcohol. The

Australians were also more likely than the Japanese to see psychiatric medications as harmful, particularly tranquilizers and sleeping pills.

The Japanese had a lower rate of endorsing clergy as likely to be helpful, although this was not a highly endorsed form of help in Australia either. In Australia, it is an accepted role of the clergy to support members of their church at times of crisis. In Japan, it has been extremely rare for a conventional clergyman to play any sort of active role in the medical field. However, traditional local shamans, and groups that have been viewed as the so-called "new religions", often offer incantations and prayers for patients, and in many cases mental illness has been described as some sort of "curse", which can be "swept away" by performing suitable rites.

There were also some similarities between the two countries. Both gave a high rate of endorsement of the helpfulness of counselors. In Australia, counselors are not a registered profession and vary greatly in their training. They are seen as providing a supportive role – someone who will listen to problems and give advice. In Japan, counselors are seen to be associated with "mind care", but are not a common profession. The term "counseling" is also used broadly to cover supportive talking relationships that might be provided by people who are not counselors.

Another similarity between the two countries was the predominantly negative view of psychiatric wards and ECT. The negative view of psychiatric wards in both countries is interesting given the much greater use of this intervention in Japan than Australia.

When asked about long-term outcomes, the Japanese were more likely to believe in partial recovery following treatment, while the Australians were more optimistic about full recovery. On the other hand, the Australians were more negative about outcomes without treatment. In both countries, outcomes for depression were seen more positively than outcomes for schizophrenia. A factor that might produce these differences between the two countries is exposure to people with mental disorders. The more hospital-based system in Japan might mean that the public have less contact with people in various stages of recovery.

Limitations

Both the Australian and Japanese surveys had some methodological limitations. In the Australian survey, the sample was a national one, but there was a considerable amount of non-contact and refusal. In the Japanese survey, the sample was not truly national, but nevertheless covered the country broadly. The representativeness of the

sample for the country as a whole is unknown, but is likely to be adequate for investigation of major cross-national differences. Information on refusal was not collected.

Another limitation concerns the problems of making cross-national comparisons between two very different cultures. Because the interview was designed to suit the Australian public, it may not have been optimal for the Japanese. Although we tried to make the survey interviews as close as possible, there will inevitably be subtleties of meaning and cultural factors operating within a structured household survey that could affect the results in unknown ways. For example, there could be differences in the willingness to use various response categories, the acceptability of expressing certain views to an interviewer, or the comparability of interventions or services that may be translated as equivalent. To avoid this limitation as far as possible, we have focused on the broad pattern of responses between countries, rather than small statistically significant differences in percent frequencies.

Some of the interventions listed in the interview are not widely available and respondents would not have had either direct or indirect experience on which to base their beliefs. For example, in Australia, receiving information from a health educator or consulting an expert via email would be rare interventions. Similarly, in Japan, help from priests and naturopaths is rare, while telephone counseling is uncommon but increasing.

The conclusions reached here are limited to the quantitative data collected in community surveys. Future work on cross-cultural comparisons of mental health literacy would benefit from associated qualitative research to document the cultural differences that underpin any quantitative differences found.

Conclusion

Comparing the two countries, some broad themes are apparent. The Japanese public could be described as more reluctant to use psychiatric labels, particularly with milder disorders, and to be less likely to discuss mental disorders with others outside the family. They generally believe in the benefits of treatment, but are not optimistic about full recovery. By contrast, the Australian public has adopted psychiatric labels, particularly "depression", more than the Japanese. They are more positive about the benefits of seeking professional help, but show a strong preference for lifestyle interventions and tend to be negative about some psychiatric medications. Belief in psychological interventions such as counseling and psychotherapy is similar in the two countries.

In subsequent reports from these surveys we intend to examine differences between the countries in beliefs about causes of mental disorders and in stigmatizing attitudes. These data will allow us to see whether the greater reluctance in Japan to label mental disorders and to expose them outside the family is associated with more negative attitudes or with stigmatizing causal explanations.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

AFJ co-designed the Australian survey, analyzed the Australian data, and co-wrote the manuscript.

YN provided overall supervision of the research and provided comments on the manuscript.

HC co-designed the Australian survey and provided comments on the manuscript.

YK provided specific guidance on the Japanese survey, including participation in survey interviewer training, and co-wrote the manuscript.

KMG co-designed the Australian survey and provided comments on the manuscript.

YW was involved in coordination between the Japanese and Australian surveys and co-wrote the manuscript.

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References

- Andrews G: **Meeting the unmet need with disease management.** In *Unmet Need in Psychiatry* Edited by: Andrews G, Henderson S. Cambridge: Cambridge University Press; 2000:11-36.
- Jorm AF: **Mental health literacy: public knowledge and beliefs about mental disorders.** *Br J Psychiatry* 2000, **177**:396-401.
- Jorm AF, Angermeyer M, Katschnig H: **Public knowledge of and attitudes to mental disorders: a limiting factor in the optimal use of treatment services.** In *Unmet Need in Psychiatry* Edited by: Andrews G, Henderson S. Cambridge: Cambridge University Press; 2000:399-413.
- Lauber C, Nordt C, Falcatò L, Rössler W: **Do people recognise mental illness? Factors influencing mental health literacy.** *Eur Arch Psychiatry Clin Neurosci* 2003, **253**:248-251.
- Magliano L, Fiorillo A, De Rosa C, Malangone C, Maj M: **Beliefs about schizophrenia in Italy: a comparative nationwide survey of the general public, mental health professionals, and patients' relatives.** *Can J Psychiatry* 2004, **49**:322-30.
- Brandli H: **The image of mental illness in Switzerland.** In *The Image of Madness: The Public Facing Mental Illness and Psychiatric Treatment* Edited by: Guimon J, Fischer W, Sartorius N. Basel: Karger; 1999:29-37.
- Hillert A, Sandmann J, Ehmgig SC, Weisbecker H, Kepplinger HM, Benkert O: **The general public's cognitive and emotional perception of mental illness: an alternative to attitude-research.** In *The Image of Madness: The Public Facing Mental Illness and Psychiatric Treatment* Edited by: Guimon J, Fischer W, Sartorius N. Basel: Karger; 1999:56-71.
- Angermeyer MC, Matschinger H: **Social representations of mental illness among the public.** In *The Image of Madness: The Public Facing Mental Illness and Psychiatric Treatment* Edited by: Guimon J, Fischer W, Sartorius N. Basel: Karger; 1999:20-28.
- Herran A, Vazquez-Barquero JL, Dunn G: **Patients' attributional style is important factor.** *BMJ* 1999, **318**:1558.
- Kessler D, Lloyd K, Lewis G, Gray DP: **Cross sectional study of symptom attribution and recognition of depression and anxiety in primary care.** *BMJ* 1999, **318**:436-439.
- Bowers J, Jorm AF, Henderson S, Harris P: **General practitioners' detection of depression and dementia in elderly patients.** *Med J Aust* 1990, **153**:192-196.
- Jacob KS, Bhugra D, Lloyd KR, Mann AH: **Common mental disorders, explanatory models and consultation behaviour among Indian women living in the UK.** *J R Soc Med* 1998, **91**:66-71.
- Jorm AF, Korten AE, Jacomb PA, Christensen H, Rodgers B, Pollitt P: **"Mental health literacy": a survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment.** *Med J Aust* 1997, **166**:182-186.
- Croghan TW, Tomlin M, Pescosolido BA, Schnittker J, Martin J, Lubell K, Swindle R: **American attitudes toward and willingness to use psychiatric medications.** *J Nerv Ment Dis* 2003, **191**:166-174.
- Angermeyer MC, Däumer R, Matschinger H: **Benefits and risks of psychotropic medication in the eyes of the general public: results of a survey in the Federal Republic of Germany.** *Pharmacopsychiatry* 1993, **26**:114-120.
- Priest RG, Vize C, Roberts A, Roberts M, Tylee A: **Lay people's attitudes to treatment for depression: results of opinion poll for Defeat Depression Campaign just before its launch.** *BMJ* 1996, **313**:858-859.
- Fischer W, Goerg D, Zbinden E, Guimon J: **Determining factors and the effects of attitudes towards psychotropic medication.** In *The Image of Madness: The Public Facing Mental Illness and Psychiatric Treatment* Edited by: Guimon J, Fischer W, Sartorius N. Basel: Karger; 1999:162-186.
- Hugo CJ, Boshoff DEL, Traut A, Zungu-Dirwayi N, Stein DJ: **Community attitude toward and knowledge of mental illness in South Africa.** *Soc Psychiatry Psychiatr Epidemiol* 2003, **38**:715-719.
- McKeon P, Carrick S: **Public attitudes to depression: a national survey.** *Ir J Psychol Med* 1991, **8**:116-121.
- Angermeyer MC, Matschinger H: **Public attitude towards psychiatric treatment.** *Acta Psychiatr Scand* 1996, **94**:326-336.
- Mizuno M, Murakami M: **Differences in strategies for implementing community-based psychiatry in Japan.** In *Family Interventions in Mental Illness* Edited by: Lefley HP, Johnson DL. Westport Connecticut: Praeger; 2001:185-192.
- Jorm AF, Korten AE, Jacomb PA, Rodgers B, Pollitt P, Christensen H, Henderson S: **Helpfulness of interventions for mental disorders: beliefs of health professionals compared to the general public.** *Br J Psychiatry* 1997, **171**:233-237.
- Caldwell TM, Jorm AF: **Mental health nurses' beliefs about interventions for schizophrenia and depression: a comparison with psychiatrists and the public.** *Aust N Z J Psychiatry* 2000, **34**:602-611.
- Jorm AF, Christensen H, Griffiths KM, Rodgers B: **Effectiveness of complementary and self-help treatments for depression.** *Med J Aust* 2002, **176**:S84-S96.
- Andrews G, Henderson S, Hall W: **Prevalence, comorbidity, disability and service utilisation. Overview of the Australian National Mental Health Survey.** *Br J Psychiatry* 2001, **178**:145-153.
- Kurumatani T, Ukawa K, Kawaguchi Y, Miyata S, Suzuki M, Ide H, Seki W, Chikamori E, Hwu HG, Liao SC, Edwards GD, Shinfuku N, Uemoto M: **Teachers' knowledge, beliefs and attitudes con-**

- cerning schizophrenia: a cross-cultural approach in Japan and Taiwan. *Soc Psychiatry Psychiatr Epidemiology* 2004, **39**:402-409.
27. Kim Y, Berrios GE: **Impact of the term schizophrenia on the culture of ideograph: the Japanese experience.** *Schizophr Bull* 2001, **27**:181-185.
 28. McDonald-Scott P, Machizawa S, Satoh H: **Diagnostic disclosure: a tale of two cultures.** *Psychol Med* 1992, **22**:147-157.
 29. Sugiura T, Sakamoto S, Kijima N, Kitamura F, Kitamura T: **Stigmatizing perception of mental illness by Japanese students: comparison of different psychiatric disorders.** *J Nerv Ment Dis* 2000, **188**:239-242.

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Public beliefs about causes and risk factors for mental disorders: a comparison of Japan and Australia

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Abstract

Background: Surveys of the public in a range of Western countries have shown a predominant belief in social stressors as causes of mental disorders. However, there has been little direct cross-cultural comparison. Here we report a comparison of public beliefs about the causes of mental disorders in Japan and Australia.

Methods: Surveys of the public were carried out in each country using as similar a methodology as feasible. In both countries, household interviews were carried out concerning beliefs about causes and risk factors in relation to one of four case vignettes, describing either depression, depression with suicidal thoughts, early schizophrenia or chronic schizophrenia. In Japan, the survey involved 2000 adults aged between 20 and 69 from 25 regional sites spread across the country. In Australia, the survey involved a national sample of 3998 adults aged 18 years or over.

Results: In both countries, both social and personal vulnerability causes were commonly endorsed across all vignettes. The major differences in causal beliefs were that Australians were more likely to believe in infection, allergy and genetics, while Japanese were more likely to endorse "nervous person" and "weakness of character". For risk factors, Australians tended to believe that women, the young and the poor were more at risk of depression, but these were not seen as higher risk groups by Japanese.

Conclusion: In both Japan and Australia, the public has a predominant belief in social causes and risk factors, with personal vulnerability factors also seen as important. However, there are also some major differences between the countries. The belief in weakness of character as a cause, which was stronger in Japan, is of particular concern because it may reduce the likelihood of seeking professional help and support from others.

Background

Mental health researchers view mental disorders as having complex causes involving an interplay of biological, psychological and social factors. However, the public's beliefs about causes are generally less sophisticated. Surveys of the public in a range of Western countries have shown a predominant belief in social stressors as causes of mental disorders. Studies from Australia, Ireland, Germany, Switzerland, UK and USA have found that social factors were most often seen as the causes of depression [1-6], whereas genetic factors were much less frequently endorsed [1-4,6]. Social factors are also seen by the public of Western countries as an important cause of schizophrenia [3,6-8]. While genetic factors are more often seen as a cause for schizophrenia than depression, they are still endorsed much less frequently than social factors [3,6]. Social factors covered in these surveys included stressful life events, traumatic experiences, family problems, and social disadvantage.

Of greater concern is the stigmatizing belief that mental disorders are caused by personal weakness or a character flaw. While this is not a predominant belief, it is fairly common. In the USA, around one-third saw "own bad character" as a cause for both schizophrenia and depression [6], implying a moral judgment of mental disorders. In Australia, around half the population believed "weakness of character" is a cause of both depression and schizophrenia [1], while in Turkey over 60% believed that this is a cause of schizophrenia [8].

While there has been considerable research on public beliefs in Western countries, there has been little research in other parts of the world and little cross-cultural comparison. The beliefs that predominate in Western countries cannot be assumed to apply elsewhere. A comparison of teachers' beliefs about schizophrenia in Japan and Taiwan found that "stress from personal relations" was commonly seen as a cause in both countries, which is similar to the belief in social factors in Western countries [9]. However, the Taiwanese were more likely than the Japanese to believe in "weakness of character", "heredity" and "stress from a disaster" as a cause. A comparison of mainly young adults from Hong Kong and England found that the Hong Kong Chinese were more likely to believe in social factors as the cause of schizophrenia, while the English were more likely to endorse genetic factors [10]. This difference was attributed to the more collectivist nature of Chinese culture. There has also been a comparison of public beliefs in Germany, Russia and Mongolia [11]. In all three countries, psychosocial factors such as stressful life events were predominantly seen as the cause of both depression and schizophrenia, whereas biological causes such as heredity and brain disease were less frequently endorsed. Taken together, these cross-cultural compari-

sons indicate that a belief in social causes is common in East Asian countries as well as in Western countries.

Here we report a further cross-cultural comparison involving Japan and Australia. This comparison involved surveys in both countries using the same questions about causes and risk factors for four case vignettes: depression, depression with suicidal thoughts, early schizophrenia, and chronic schizophrenia. On the basis of previous research, it might be expected that a belief in social causes would predominate in both countries. However, there are a number of cultural and health system differences between the two countries that might influence responses. Japan places a greater emphasis on hospital care compared to the emphasis on community care in Australia. The Japanese mental health care system has been described as based on the values of minimizing state financial involvement, retaining family responsibility for family members, and social control of individuals who might contribute to social disorder [12]. By contrast, Western systems are more influenced by the values of individual rights, social reintegration and government responsibility [12]. While these differences exist, it is difficult to predict what effect they might have on causal beliefs, so the study was essentially exploratory.

Methods

Survey interview

Interview questionnaires comprised a common core of questions that would allow comparisons between countries, and a country-specific component to allow investigation of issues particular to each country [13]. Copies of the Japanese questionnaire are available from YN and of the Australian questionnaire from AFJ. The interview was based on a vignette of a person with a mental disorder. On a random basis, respondents were shown one of four vignettes: a person with major depression, one with major depression together with suicidal thoughts, a person with early schizophrenia, and one with chronic schizophrenia. All vignettes were written to satisfy the diagnostic criteria for either major depression or schizophrenia according to DSM-IV and ICD-10. The vignette with depression and the one with early schizophrenia were written to satisfy at a minimal level these diagnostic criteria, so that we could ascertain the public's reaction to cases of developing disorder that had reached the point where intervention was needed. The vignette of the person with depression together with suicidal thoughts was identical to the depression vignette in all respects except the suicidal thoughts and was designed to assess how this symptom affected the public's response. The chronic schizophrenia vignette was designed to assess the response to someone with a severe long-standing disorder, where acceptance seemed less likely. Respondents were also randomly assigned to receive either male ("John") or female

("Mary") versions of the vignette. The vignettes have been given in an earlier publication [13]. After being presented with the vignette, respondents were questioned about what was wrong with the person, how they could be helped, the likely helpfulness of a range of interventions, the likelihood of recovery, knowledge of causes and risk factors, beliefs associated with stigma and discrimination, contact with people like those in the vignette, and the health of the respondent.

The only questions of relevance here are those concerned with causes and risk factors [1]. These questions were: "There are many people in the community who suffer from problems like John's. The next few questions are about possible causes of this sort of problem developing in anybody. How likely do you think each of the following is to be a reason for such problems? Could a virus or other infection, be a reason for these sorts of problems? How likely is an allergy or reaction to be the cause? Day-to-day problems such as stress, family arguments, difficulties at work or financial difficulties? The recent death of a close friend or relative? Some recent traumatic event such as bushfires threatening your home, a severe traffic accident or being mugged? Problems from childhood such as being badly treated or abused, losing one or both parents when young or coming from a broken home? How likely is it that these sorts of problems are inherited or genetic? Is being a nervous person likely to be a reason? Having weakness of character?" Response options to these questions were: very likely, likely, not likely, depends, don't know.

Then followed questions about risk factors: "The next few questions seek your opinion about whether there are some people in the community who are more likely to have these problems and others who are perhaps less likely. Do you think that women would be more likely or less likely than men to suffer these sorts of problems? Would young people, under 25 years of age, be more likely or less likely? Would older people, those aged over 65, be more likely or less likely? Would poor people be more likely or less likely to suffer these sorts of problems? Unemployed people? Divorced or separated people? Would single people, who have never been married or in a long-term relationship be more likely or less likely?". The response options were: More likely, less likely, no difference, depends, don't know.

The Japanese survey

A survey manual supplied from Australia was translated into Japanese and entrusted to Yamate Information Processing Center Ltd. for use with the target population aged 20–69 years, as a rule using the same procedures as Australia. The survey questionnaire, which was developed by the Australian researchers (AFJ, IIC, KMC), was tenta-

tively translated into Japanese. Then a native English translator, who had not seen the original English text, translated the Japanese version back into English. By comparing the two English versions, it was possible to confirm the accuracy of the original translation. There were no significant differences between the original text and the reverse translation. Finally, a Japanese version of the questionnaire was produced, which involved formatting the text into Japanese style and making slight wording adjustments. The names of the characters in the vignettes were translated into the Japanese style, viz. "A-o" (putting an o sound at the end is often used for a man's name) or "B-ko" (putting ko at the end is often used for a woman's name), instead of "John" or "Mary" which were used in the English text.

As well as the questions taken from the Australian survey, the Japanese survey asked questions concerning such issues as psychiatric health and welfare policy, the bodies implementing related services, the existence of action groups, and the change in the Japanese name for schizophrenia by the Japanese Society of Psychiatry and Neurology. These additions were made to clarify the current Japanese situation and issues in related fields. Further, an original Japanese manual was also created and adopted for use concerning points of interest in the implementation of home visits.

The survey method used was home visit interviews. It was not feasible to do a national survey of randomly selected households in Japan because of constraints of human resources, funding and time. It was therefore decided to sample a range of areas that differed in whether they were large or small cities, whether the area had many psychiatric patients or not, and whether the area had a high suicide rate or not. Using this approach, Japan was divided into 5 areas and 5 research sites were selected in each of these areas, giving a total of 25 geographic sites. As the survey was conducted during the winter, and because it was difficult to ensure that there would be enough survey interviewers, implementation in Hokkaido and Shikoku prefectures proved troublesome. Additional reasons for selection of the 25 regional sites were that they were places of comparatively high population within the relevant regions, the survey interviewers could use public transport, and the urban areas involved no particular inconveniences for the researchers to visit within a certain range using public transportation. 80 households were selected from each site, giving a total of 2000. At each site there were 4 interviewers who took responsibility for 20 households each. The survey was conducted over the period from 19 November to 12 December 2003. Each of the four vignettes was received by 250 people. Half received a male version of a vignette and half the female version.

At the start of the survey, an explanatory meeting was held for the survey interviewers in each region. As many members of the research team as possible attended these explanatory meetings. Eighty-five survey interviewers were recruited for this research with an average age of 50 and an average of 17 years' experience of survey interviewing in various types of surveys. The areas for the survey interviewers to canvass were allocated on the basis of where they lived. The question of where the individual survey interviewers should go was determined mutually among the survey interviewers themselves, and by the head survey interviewer (supervisor). As a rule, one survey interviewer conducted 20 interviews, but this was considerably flexible, given the number of years of individual experience and what the individual survey interviewer could handle. The interviews were conducted according to the following procedure: visit the target's home and present the written greetings and request (a draft had been prepared by certain survey bodies, which was put into final form after checks by the research team members), then explain the details of the survey using the documents, ask the target for their participation in the research, start the interview and follow through to completion, check that nothing had been omitted from the survey responses, and hand over the remuneration (1000 yen cash voucher). Data were not collected on the refusal rate for this survey because the emphasis was on achieving the quotas of respondents to fit the required age and gender distribution.

The Australian survey

A household survey was carried out on Australian adults aged 18 years or over by the company AC Nielsen. Households were sampled from 250 census districts covering all states and territories and metropolitan and rural areas. Up to 5 call backs were made to metropolitan selections and 3 to non-metropolitan selections. Interviewers attempted to interview the person in each household with the most recent birthday. To achieve a target sample of 4,000 interviews with adults aged 18 years or over, visits were made to 28,947 households. The outcome of these visits was: no contact after repeated visits 14,630; vacant house or lot 306; refused 7,815; person sampled within household temporarily unavailable 1,132; no suitable respondent in household 287; did not speak English 383; incapable of responding 213; and unavailable for the duration of the survey 181. The achieved sample was 3998 persons, with 1001 receiving the depression vignette, 999 the depression with suicidal thoughts vignette, 997 the early schizophrenia vignette, and 1001 the chronic schizophrenia vignette. The interviews were carried out between November 2003 and February 2004.

In addition to the common core component, the Australian survey interview had questions about awareness of

depression in the media and about Australia's national depression initiative.

Ethics approval was given by the Human Research Ethics Committee of the Australian National University.

Statistical analysis

Data were pooled across male and female versions of each vignette and percent frequencies calculated. For the Japanese survey, percentage frequencies and 95% CIs were calculated using unweighted data with SPSS 12.0. For the Australian survey, percentages were calculated applying survey weights to give better population estimates. Ninety-five percent CIs were estimated using the Complex Samples procedure in SPSS 12.0. This procedure takes account of sampling weights and geographic clustering in the sample.

Because of the very different cultures of Japan and Australia, it is possible that any differences in question endorsement rates might be due to subtleties of language or to the social rules applying to the interview situation, as well as to genuine differences in beliefs about treatment and outcome. For this reason, we have not relied on statistical significance of percentage differences between countries, but rather on the broad patterns of responses, particularly where percent endorsement was ordered very differently across questions.

Results

Characteristics of the samples

Table 1 shows the age and gender distributions of the Japanese and Australian samples. Comparing the Japanese sample to the national population in the same age groups (2003 data), there was an under-representation of 50–59 year olds (20% vs 22.4%) and an over-representation of 60–69 year old males (10% vs 8.9%). Other age-gender groups showed less than 1% discrepancy.

Comparing the Australian sample to the national population, there was an under-representation of males and of younger adults, but the sample was close to the population in marital status, country of birth and education. For the Australian sample, weights were used to correct for these biases.

Beliefs about causes and risk factors

Table 2 shows the results on beliefs about causes. In this table, the percentages pertain to each question asked separately, so that respondents could endorse any number of factors as likely causes. In both countries there was a common belief in social causes, such as day-to-day problems, death of someone close, traumatic event, and problems from childhood. This belief was common across all vignettes. The major differences were that the Australians

Table 1: Age and gender distribution of the Japanese and Australian samples

Age group	Japanese males %	Japanese females %	Japanese total %	Australian males %	Australian females %	Australian total %
18-19	-	-	-	1.5	1.6	3.0
20-29	10.0	10.0	20.0	5.6	8.1	13.8
30-39	10.0	10.0	20.0	7.7	11.8	19.4
40-49	10.0	10.0	20.0	8.6	11.0	19.7
50-59	10.0	10.0	20.0	6.9	9.5	16.3
60-69	10.0	10.0	20.0	4.8	8.0	12.7
70+	-	-	-	6.2	8.9	15.1
Total	50.0	50.0	100.0	41.2	58.8	100.0

Table 2: Percentage (and 95% CI) of Japanese and Australian respondents giving each cause as "very likely" or "likely" for the person described in the vignette

Cause	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
Virus or infection				
Japanese	6.2 (4.1-8.3)	6.6 (4.4-8.8)	7.2 (4.9-9.5)	7.2 (4.9-9.5)
Australian	50.5 (47.1-54.0)	41.4 (38.2-44.7)	32.1 (29.0-35.4)	33.6 (30.7-36.6)
Allergy				
Japanese	10.2 (7.5-12.9)	11.4 (8.6-14.2)	12.6 (9.7-15.5)	9.4 (6.8-12.0)
Australian	44.9 (41.4-48.5)	37.6 (34.3-41.0)	31.5 (28.4-34.7)	28.4 (25.5-31.5)
Day-to-day problems				
Japanese	93.6 (91.4-95.8)	91.8 (89.4-94.2)	92.0 (89.6-94.4)	91.2 (88.7-93.7)
Australian	96.8 (95.2-97.9)	95.7 (94.2-96.9)	89.6 (87.6-91.2)	86.6 (84.3-88.7)
Death of someone close				
Japanese	79.8 (76.3-83.3)	81.4 (78.0-84.8)	73.4 (69.5-77.3)	74.0 (70.1-77.9)
Australian	96.3 (94.6-97.5)	94.8 (93.1-96.0)	87.4 (85.2-89.4)	83.3 (80.7-85.6)
Traumatic event				
Japanese	82.6 (79.3-85.9)	79.6 (76.1-83.1)	78.2 (74.6-81.8)	80.8 (77.3-84.3)
Australian	93.9 (91.8-95.4)	92.7 (90.7-94.2)	86.5 (84.1-88.6)	82.8 (80.2-85.1)
Problems from childhood				
Japanese	81.0 (77.5-84.5)	82.0 (78.6-85.4)	88.2 (85.4-91.0)	89.0 (86.2-91.8)
Australian	91.3 (89.2-93.1)	95.0 (93.2-96.3)	90.8 (88.8-92.5)	91.4 (89.4-93.0)
Inherited or genetic				
Japanese	34.6 (30.4-38.8)	34.0 (29.8-38.2)	34.2 (30.0-38.4)	43.8 (39.4-48.2)
Australian	68.0 (64.8-71.0)	68.4 (65.3-71.3)	70.0 (66.8-73.0)	73.7 (70.6-76.6)
Nervous person				
Japanese	81.4 (78.0-84.8)	77.4 (73.7-81.1)	74.0 (70.1-77.9)	81.8 (78.4-85.2)
Australian	67.9 (64.6-70.9)	65.6 (62.3-68.7)	58.1 (54.4-61.7)	56.9 (53.6-60.2)
Weakness of character				
Japanese	73.6 (69.7-77.5)	69.2 (65.1-73.3)	73.4 (69.5-77.3)	82.0 (78.6-85.4)
Australian	43.0 (39.7-46.3)	46.1 (42.8-49.3)	39.7 (36.5-42.9)	35.1 (31.6-38.8)

were more likely to believe in virus or infection, allergy, and inherited or genetic, while the Japanese were more likely to endorse nervous person and weakness of character.

Tables 3 and 4 show the data on beliefs about risk factors. Table 3 gives the percentages believing a group is more at

risk and Table 4 the percentages believing a group is less at risk. As in Table 2, each group was asked about separately, so that respondents could endorse any number as more likely or less likely to be at risk. In both countries, the risk factors most strongly believed in across vignettes were being unemployed and divorced/separated, although these beliefs were more common in Australia.

Table 3: Percentage (and 95% CI) of Japanese and Australian respondents rating each group in the population as "more likely" to experience the problem described in the vignette

Group More Likely at Risk	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
Women				
Japanese	29.4 (25.4–33.4)	24.2 (20.4–28.0)	21.4 (17.8–25.0)	23.0 (19.3–26.7)
Australian	26.8 (23.9–30.0)	27.2 (24.4–30.2)	21.1 (18.5–23.9)	14.7 (12.6–17.1)
Young				
Japanese	24.2 (20.4–28.0)	24.4 (20.6–28.2)	40.4 (36.1–44.7)	26.2 (22.3–30.1)
Australian	42.5 (39.1–46.0)	48.2 (45.0–51.4)	55.3 (52.0–58.6)	28.4 (25.6–31.4)
Old				
Japanese	23.4 (19.7–27.1)	21.2 (17.6–24.8)	15.0 (11.9–18.1)	29.2 (25.2–33.2)
Australian	28.6 (25.8–31.5)	29.1 (26.3–32.1)	22.0 (19.4–24.9)	38.3 (35.0–41.7)
Poor				
Japanese	14.8 (11.7–17.9)	13.2 (10.2–16.2)	7.4 (5.1–9.7)	19.6 (16.1–23.1)
Australian	52.6 (49.2–56.0)	52.1 (48.6–55.5)	38.9 (35.7–42.3)	37.8 (34.4–41.2)
Unemployed				
Japanese	58.4 (54.1–62.7)	50.8 (46.4–55.2)	41.0 (36.7–45.3)	50.6 (46.2–55.0)
Australian	76.3 (73.0–79.3)	76.7 (73.6–79.4)	62.7 (59.4–65.9)	54.9 (51.4–58.3)
Divorced/separated				
Japanese	48.6 (44.2–53.0)	43.6 (39.2–48.0)	37.2 (32.9–41.5)	39.6 (35.3–43.9)
Australian	69.6 (66.2–72.8)	64.3 (60.9–67.6)	53.6 (50.3–57.0)	44.3 (40.9–47.8)
Single				
Japanese	18.2 (14.8–21.6)	22.8 (19.1–26.5)	22.8 (19.1–26.5)	24.6 (20.8–28.4)
Australian	23.9 (21.0–27.1)	27.1 (24.2–30.1)	22.0 (19.2–25.0)	25.1 (22.2–28.2)

Table 4: Percentage (and 95% CI) of Japanese and Australian respondents rating each group in the population as "less likely" to experience the problem described in the vignette

Group Less Likely at Risk	Depression Vignette	Depression/Suicidal Vignette	Early Schizophrenia Vignette	Chronic Schizophrenia Vignette
Women				
Japanese	21.6 (18.0–25.2)	22.8 (19.1–26.5)	24.0 (20.2–27.8)	24.8 (21.0–28.6)
Australian	12.0 (9.7–14.7)	13.6 (11.5–16.0)	12.8 (10.8–15.1)	18.7 (16.4–21.3)
Young				
Japanese	24.0 (20.2–27.8)	20.8 (17.2–24.4)	14.6 (11.5–17.7)	27.6 (23.7–31.5)
Australian	19.5 (16.8–22.4)	18.8 (16.4–21.4)	10.9 (8.9–13.2)	30.6 (27.5–33.9)
Old				
Japanese	30.2 (26.2–34.2)	25.0 (21.2–28.8)	38.6 (34.3–42.9)	27.4 (23.5–31.3)
Australian	34.8 (31.5–38.2)	37.2 (34.2–40.3)	43.2 (39.8–46.7)	25.2 (22.5–28.1)
Poor				
Japanese	23.4 (19.7–27.1)	19.6 (16.1–23.1)	26.4 (22.5–30.3)	23.4 (19.7–27.1)
Australian	8.5 (6.6–10.8)	7.4 (6.0–9.2)	9.1 (7.3–11.3)	7.2 (5.7–9.1)
Unemployed				
Japanese	13.0 (10.0–16.0)	11.0 (8.2–13.8)	14.8 (11.7–17.9)	15.6 (12.4–18.8)
Australian	4.4 (3.0–6.2)	4.6 (3.5–6.2)	5.4 (4.1–7.1)	5.5 (4.1–7.5)
Divorced/separated				
Japanese	12.2 (9.3–15.1)	13.6 (10.6–16.6)	14.0 (10.9–17.1)	16.0 (12.8–19.2)
Australian	4.1 (3.0–5.7)	5.5 (4.2–7.3)	5.2 (3.9–6.9)	6.7 (5.1–8.7)
Single				
Japanese	19.2 (15.7–22.7)	13.0 (10.0–16.0)	13.6 (10.6–16.6)	20.4 (16.9–23.9)
Australian	21.4 (18.8–24.4)	19.2 (16.6–22.2)	17.7 (15.2–20.4)	17.1 (14.9–19.6)

There were a number of cross-national differences. The Australians tended to believe that the young and the poor were more at risk of depression, but these were not seen as higher risk groups by the Japanese. In fact, the Japanese public tended to see the poor as having lower risk of depression. For schizophrenia, the Australians saw the young as having higher risk for early schizophrenia, and the poor as having higher risk for both early and chronic schizophrenia. Likewise the Japanese saw the young as having higher risk for early schizophrenia, but they again tended to see the poor as having lower risk.

Discussion

The present findings from Japan and Australia support earlier work from several countries showing a predominant belief in social causes. These causes include day-to-day problems, death of someone close, traumatic events, and problems from childhood. The findings on risk factors are generally consistent with those on causes, with unemployment and divorce/separation widely seen to be risk factors in both countries. While a belief in social causes and risk factors was found in both countries, it was generally more common in Australia than in Japan. As far as depression is concerned, this belief is realistic because there is substantial evidence supporting social factors in the causation of depression [14]. However, for schizophrenia, social factors are of less importance, having an influence only on those who are genetically vulnerable [15].

The findings on poverty as a risk factor were an exception to the general trend of beliefs in social factors. While the Australians tended to see the poor as having higher risk, particularly for depression, for the Japanese the trend was in the opposite direction, with more people believing that the poor would have lower risk. The reason for this difference is unknown. It may reflect inaccurate beliefs in one country or else a true difference in risk factors between countries. In Australia, poverty is known to be associated with both depression and psychotic disorders [16,17], although there is debate about the causal pathways. However, in one Japanese study of depression in the workplace, poor economic status was not associated with increased risk [18]. Furthermore, a Japanese incidence study of schizophrenia found that features of residential areas that are associated with higher incidence in Western countries do not necessarily have the same association in Japan [19].

As well as a frequent public belief about social causes in both countries, there was also a common belief in personal vulnerability factors. However, the endorsement of personal vulnerability factors tended to take a different form in each country. The Japanese were more likely to believe in the role of the trait characteristics of nervous

person and weakness of character, while Australians were more likely to endorse the role of genetics. Being a nervous person could be regarded as a lay description of the personality trait of neuroticism, which is a major risk factor for depression. There is also some evidence that neuroticism is a risk factor for schizophrenia [20]. However, the belief in weakness of character is of more concern, because this is a more stigmatizing explanation which could make people less likely to disclose that they are experiencing a mental disorder and to seek professional help. It has been noted that "Japanese patients are reluctant to openly discuss disturbances of mood, since these are considered to be indicative of personal weakness rather than treatable medical conditions" [21]. For Japanese people, the implication is that the disorder is the person's fault. In Australia, the belief in weakness of character as a cause has declined since the earlier survey in 1995, particularly for schizophrenia [22]. This change may have been affected by efforts to reduce the stigma of mental disorders.

The strong endorsement of genetics by Australians represents a major change from 8 years earlier, from around half the population in 1995 to around two-thirds in 2003–04 [22]. A possible reason for this change is the publicity surrounding the human genome project and the role of genes in health generally. Why this belief is weaker in Japan is unclear. However, in both countries genetics was seen to be more important for the chronic schizophrenia vignette than for the other vignettes, suggesting a greater genetic attribution for severe or chronic mental disorders.

Another difference between the two countries was that Australians were more likely to believe in the role of virus or infection and allergy. It is not clear why these beliefs are more prominent in Australia. However, such beliefs appear to be stable over time, because the percentages endorsing these causes are very similar to an Australian national survey carried out 8 years earlier [22]. These beliefs were most common for the vignette of depression without suicidal thoughts, which is the least severe of the cases presented. It may be that they reflect interpretations of the vignette as being a physical disorder or a secondary reaction to a physical disorder.

Taking all the findings together, there is some broad similarity between public and professional beliefs about causation, in that mental disorders are seen to be influenced by a combination of personal vulnerability and environmental triggers. The major difference would appear to be the greater use of morally judgmental attributions of personal vulnerability by the public compared to the more objective attributions of professionals. In this regard, the

Australian public's views appear closer to those of professionals than do the Japanese public's.

Limitations

We have previously discussed some of the limitations of this work [13]. These relate to the methodology of the surveys, in particular the non-contact and refusal rate in the Australian survey and the lack of truly national coverage of the Japanese one. Furthermore, both surveys lack data on the characteristics of refusers. We also recognise the problems of making cross-national comparisons between two very different cultures. There will inevitably be subtleties of meaning and cultural factors operating within a structured household survey which could affect the results in unknown ways. Finally, the survey used closed rather than open-ended questions, which may have suggested responses that the participants would not have thought of spontaneously.

Conclusion

In both Japan and Australia, the public have a predominant belief in social causes and risk factors for mental disorders. However, there are also some major differences between the countries, with Australians having a stronger belief in infections, allergies and genetics, while Japanese have a stronger belief in being a nervous person and weakness of character. The latter belief is of particular interest because it may be associated with greater stigma and reduce the likelihood of seeking professional help and support from others. Reducing the belief in weakness of character as a cause would be a suitable target for mental health literacy campaigns. This is probably easier to achieve for depression, where there are both contemporary and historical figures who have suffered from depression, yet are perceived as being strong in character.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

YN provided overall supervision of the research and provided comments on the manuscript.

AFJ co-designed the Australian survey, analyzed the Australian data, and co-wrote the manuscript.

YK provided specific guidance on the Japanese survey, including participation in survey interviewer training, and co-wrote the manuscript.

IIC co-designed the Australian survey and provided comments on the manuscript.

HN provided specific guidance on the Japanese survey, including participation in survey interviewer training, and co-wrote the manuscript.

KMG co-designed the Australian survey and provided comments on the manuscript.

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References

- Jorm AF, Korten AE, Jacomb PA, Christensen H, Rodgers B, Pollitt P: **Public beliefs about causes and risk factors for depression and schizophrenia.** *Soc Psychiatry Psychiatr Epidemiol* 1997, **32**:143-148.
- McKeon P, Carrick S: **Public attitudes to depression: a national survey.** *Ir J Psychol Med* 1991, **8**:116-121.
- Matschinger H, Angermeyer MC: **Lay beliefs about the causes of mental disorders: a new methodological approach.** *Soc Psychiatry Psychiatr Epidemiol* 1996, **31**:309-315.
- Lauber C, Falcató L, Nordt C, Rössler W: **Lay beliefs about causes of depression.** *Acta Psychiatr Scand* 2003, **108**(Suppl 418):96-99.
- Priest RG, Vize C, Roberts A, Roberts M, Tylee A: **Lay people's attitudes to treatment of depression: results of opinion poll for Defeat Depression Campaign just before its launch.** *BMJ* 1996, **313**:858-859.
- Link BG, Phelan JC, Bresnahan M, Stueve A, Pescosolido BA: **Public conceptions of mental illness: labels, causes, dangerousness, and social distance.** *Am J Public Health* 1999, **89**:1328-1333.
- Magliano L, Fiorillo A, De Rosa C, Malangone C, Maj M: **Beliefs about schizophrenia in Italy: a comparative nationwide survey of the general public, mental health professionals, and patients' relatives.** *Can J Psychiatry* 2004, **49**:322-30.
- Taskin EO, Sen FS, Aydemir O, Demet MM, Ozmen E, Icelli I: **Public attitudes to schizophrenia in rural Turkey.** *Soc Psychiatry Psychiatr Epidemiol* 2003, **38**:586-592.
- Kurumatani T, Ukawa K, Kawaguchi Y, Miyata S, Suzuki M, Ide H, Seki W, Chikamori E, Hwu HG, Liao SC, Edwards GD, Shinfuku N, Uemoto M: **Teachers' knowledge, beliefs and attitudes concerning schizophrenia: a cross-cultural approach in Japan and Taiwan.** *Soc Psychiatry Psychiatr Epidemiol* 2004, **39**:402-409.
- Furnham A, Chan E: **Lay theories of schizophrenia: a cross-cultural comparison of British and Hong Kong Chinese attitudes, attributions and beliefs.** *Soc Psychiatry Psychiatr Epidemiol* 2004, **39**:543-552.
- Dietrich S, Beck M, Bujantugs B, Kenzine D, Matschinger H, Angermeyer M: **The relationship between public causal beliefs and social distance toward mentally ill people.** *Aust N Z J Psychiatry* 2004, **38**:348-354.
- Mandiberg JM: **The Japanese mental health system and law: social and structural impediments to reform.** *Int J Law Psychiatry* 1996, **19**:413-435.
- Jorm AF, Nakane Y, Christensen H, Yoshioka K, Griffiths KM, Wata Y: **Public beliefs about treatment and outcomes of mental disorders: a comparison of Australia and Japan.** *BMC Medicine* 2005, **3**:12.
- Paykel ES: **Life events, social support and depression.** *Acta Psychiatr Scand Suppl* 1994, **377**:50-58.
- Tsuang M: **Schizophrenia: genes and environment.** *Biol Psychiatry* 2000, **47**:210-220.

16. Mackinnon A, Jorm AF, Hickie IB: **A national depression index for Australia.** *Med J Aust* 2004, **181**:S52-S56.
17. Jablensky A, McGrath J, Herrman H, Castle D, Gureje O, Evans M, Carr V, Morgan V, Korten A, Harvey C: **Psychotic disorders in urban areas: an overview of the Study on Low Prevalence Disorders.** *Aust N Z J Psychiatry* 2000, **34**:221-236.
18. Tokuyama M, Nakao K, Seto M, Watanabe A, Takeda M: **Predictors of first-onset major depressive episodes among white-collar workers.** *Psychiatry Clin Neurosci* 2003, **57**:523-531.
19. Ohta Y, Nakane Y, Nishihara J, Takemoto T: **Ecological structure and incidence rates of schizophrenia in Nagasaki City.** *Acta Psychiatr Scand* 1992, **86**:113-120.
20. Van Os J, Jones PB: **Neuroticism as a risk factor for schizophrenia.** *Psychol Med* 2001, **31**:1129-1134.
21. Radford MH: **Transcultural issues in mood and anxiety disorders: a focus on Japan.** *CNS Spectr* 2004:6-13.
22. Jorm AF, Christensen H, Griffiths KM: **Public beliefs about causes and risk factors for mental disorders: changes in Australia over 8 years.** *Soc Psychiatry Psychiatr Epidemiol* 2005, **40**:764-767.

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Stigma in response to mental disorders: a comparison of Australia and Japan

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