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Can positive affect items be used to assess depressive disorders in the Japanese population?

N. IWATA,[1] M. UMESUE, K. EGASHIRA, H. HIRO, T. MIZOUE, N. MISHIMA AND S. NAGATA

From the Institute of Industrial Ecological Sciences, University of Occupational and Environmental Health and Egashira Clinic, Kitakyushu; Department of Neuropsychiatry, Faculty of Medicine, Kyushu University, Fukuoka; and Tsurumi Health Service Center, Nippon Kokan Hospital, Yokohama, Japan

ABSTRACT

Background. The purpose of the present study was to examine the measurement properties of positive affect items among the Japanese population.

Methods. Responses to the Japanese version of the Center for Epidemiologic Studies Depression Scale and four additional negatively revised items of the original positive affect items were compared for 85 Japanese psychiatric out-patients with dysphoric-mood-related symptoms and 255 demographically matched controls.

Results. Responses to positive affect items were generally comparable between the two groups, whereas responses to negative symptom items were markedly different ($P < 0{\cdot}002$ for all comparisons). The group difference was most marked for symptom persistence. Responses to the four negatively revised items of positive affect revealed a similar picture to that of the negative symptom items. The internal consistency of the scale significantly improved when the original positive affect items were replaced by the negatively revised items ($P < 0{\cdot}001$ for both).

Conclusions. Positive affect items with positive wording cannot be used to assess depressive disorders in the Japanese population adequately, but this can be done with the corresponding negatively revised items.

INTRODUCTION

Ethnocultural differences in response to a self-administered psychiatric rating scale have been studied, particularly in the United States (Roberts, 1980; Aneshensel *et al*. 1983; Garcia & Marks, 1989; Manson *et al*. 1990), utilizing depression scales such as the CES-D (Radloff, 1977). The CES-D, a 20-item scale used to identify groups 'at high-risk' of depression in community surveys, has been translated into several languages and employed in various countries (Chien & Cheng, 1985; Shima *et al*. 1985; Vega *et al*. 1987; Hautzinger, 1988; Buendia, 1989; Fuhrer & Rouillon, 1989; Iwata *et al*. 1989; Vera *et al*. 1991).

[1] Address for correspondence: Dr Noboru Iwata, Institute of Industrial Ecological Sciences, University of Occupational and Environmental Health (IIES, IOEH). Iseigaoka 1-1, Yahatanishi-ku, Kitakyushu 807, Japan.

Recent cross-cultural comparison studies (Iwata *et al*. 1994, 1995) using the Japanese version of the CES-D (Shima *et al*. 1985) found that the Japanese responses to positive affect items differed markedly from those of American respondents, whereas responses to negative symptom items were comparable between the groups. These results indicated that 'the Japanese have a tendency to suppress the expression of positive affect'. Iwata and colleagues (1994, 1995), inspecting the previous literature (Chien & Cheng, 1985; Lincoln, 1989; Ying, 1989; Golding *et al*. 1991), drew attention to the possibility that not only the Japanese but also some other Asian and ethnic groups would have a similar response tendency. This also seems an important issue for mental health services and domestic studies in industrial countries, as well as for cross-cultural studies, because various minority groups with other

ethnocultural backgrounds are increasing in these countries. (Kuo, 1984).

However, the influence of this response tendency in the assessment of psychiatric symptoms among clinical patients remains uncertain. In this study, we compared symptom endorsements of the CES-D items between Japanese clinical out-patients suffering from depressive disorders and adult workers or community residents. Particular attention was paid to the differences in response to positive and negative affect items between the two groups. We also addressed whether revision of the item-questioning from positively worded to negatively worded items could be a possible strategy for adjusting this apparent bias.

METHOD

Subjects

The study subjects comprised Japanese clinical out-patients with depressive disorders and adult workers or community residents.

Depressed patients

Of the out-patients admitted to three hospitals in Kitakyushu and Ikuhashi, Japan (two psychiatric departments of general hospitals and one psychiatric clinic) between July and November 1995, those who complained mainly of dysphoric-mood-related symptoms were asked to participate in the study and 94 of the patients (44 males and 50 females) agreed to do so. All were diagnosed as having depressive disorders requiring psychiatric treatment at the time of data collection, although their standard diagnostic classifications were not available.

Controls

Workers affiliated with a production company in Yokohama, Japan, or public offices in a suburb of Kitakyushu, Japan, and participants in a lecture on mental health and stress reduction were invited to participate. A total of 588 subjects (425 males, 156 females and 7 with gender not specified) agreed to do so, and they were used as the control group. The surveys were carried out in October or November, 1995.

After explaining the aim of the study, either patients or controls responded anonymously to the questionnaire to ensure complete privacy, and thus written informed consent was not available. The questionnaire consisted of several items related to demographic status, the Japanese version of the CES-D, and four additional negatively revised versions of the original positive affect items.

Respondents who missed any matching variable or more than two CES-D items, or who checked all the same response alternatives for all items, were excluded from the subjects, and this gave a final total of 85 patients (90·4% of the initial sample; 41 males and 44 females) and 528 controls (89·8%; 384 males and 144 females). To make the comparison strict by eliminating any possible bias due to group differences in demographic status, three control subjects matched to each patient for gender, marital status, education and age were randomly selected from the control group. Among females, random selection was limited, but the two groups were generally comparable for these variables. Matching was generally complete: i.e. there were no group differences in these variables. The mean age was 42·4 years (S.D. = 14·2) for the patients and 40·7 years (S.D. = 12·3) for the controls ($t = 1{\cdot}11$, df = 338, $P = 0{\cdot}27$).

Statistical analysis

Response alternatives for the CES-D were 'rarely or none of the time (experienced less than 1 day during the past week),' 'some or a little of the time (1–2 days),' 'occasionally or a moderate amount of the time (3–4 days),' and 'most or all of the time (5–7 days)'. These were scored as 0, 1, 2, and 3, respectively (Radloff, 1977). For negative items, 'presence' of symptoms was regarded as responses from 'some' to 'most', 'predominance' of symptoms was regarded as responses from 'occasionally' to 'most', and 'persistence' of symptoms was equated with a response of 'most'. Positive items were reverse-scored. This procedure was the same as that used in previous studies (Craig & Van Natta, 1976; Clark *et al.* 1981; Roberts *et al.* 1990) except for symptom 'predominance', which was an attempt to exclude a transient mood change from the symptom endorsement.

The χ^2 test or Fisher's exact probability test (if necessary) was adopted for differences in reporting percentages between the groups. The difference in distribution of four response alternatives between a positive item and the corresponding negatively revised item was

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examined using the categorical data modelling procedure of SAS (SAS Institute Inc., 1989) as a test of the marginal probabilities, assessing the main effect of repeated measurement factor (the type of item-wording). Mean scores on the scale/subscales were compared by *t* test between the groups. The difference in the subscale score between positive items and negatively revised items was examined by paired *t* test. All statistical tests were two-tailed. The α-coefficient was calculated as a measure of internal consistency.

RESULTS

Table 1 shows the reporting percentages of three symptom levels on individual items in the two groups. The items are listed along with the traditional subscales. All the percentages for negative symptom items were significantly higher among the patients than among the controls. Presence of negative symptoms were generally rather common even among the controls, particularly for somatic symptoms, but their symptom predominance became considerably small, and symptom persistence was rare. Nearby half of the patients had suffered from negative symptoms for at least 3 days during the past week (symptom predominance or persistence).

In contrast, 10 out of the 12 percentages for positive items were comparable between the groups, with one exception of symptom persistence for items 8 '(not) hopeful' and 16 '(not) enjoyed'. Like to the negative symptom items, all the percentages of negatively revised items were significantly higher among the patients than among the controls. A test for marginal probabilities showed that the response distribution of each positive item differed significantly from that of the corresponding negatively revised item among the controls. A similar picture was

Table 1. *Comparison of reporting percentages of the presence, predominance, and persistence of symptoms between psychiatric out-patients and demographically matched controls*

	Controls			Patients		
Items	Presence	Predominance	Persistence	Presence	Predominance	Persistence
Negatively worded items						
Negative (depressed) affect						
3 Blues	30	7	1	72*	43*	21*
6 Depressed	56	15	2	85*	58*	29*
9 Failure	56	12	4	77*	55*	24*
10 Fearful	19	3	2	65*	35*	18*
14 Lonely	24	5	1	60*	33*	22*
17 Crying	15	4	1	52*	29*	16*
18 Sad	28	4	1	67*	40*	19*
Somatic and retarded activities						
1 Bothered	59	8	1	85*	44*	19*
2 Appetite	35	7	0	60*	25*	14*
5 Trouble concentrating	57	10	1	76*	52*	29*
7 Effort	56	12	2	83*	49*	21*
11 Sleep	36	11	1	65*	40*	18*
13 Talked	40	8	2	75*	39*	20*
20 Get Going	33	5	2	73*	43*	27*
Interpersonal relations						
15 Unfriendly	24	4	1	51*	28*	12*
19 Dislike	27	3	1	47*	22*	11*
Positively worded items						
(Lack of) Positive affect						
4 (Not) Good	76	58	22	77NS	58NS	23NS
8 (Not) Hopeful	81	53	14	79NS	51NS	24†
12 (Not) Happy	77	61	22	80NS	64NS	21NS
16 (Not) Enjoyed	82	51	15	84NS	62NS	31*
Negatively revised items						
(Lack of positive affect)						
21 Worse	48	9	2	67*	43*	29*
22 Not Hopeful	45	10	3	71*	44*	21*
23 Unhappy	51	13	3	64†	38*	17*
24 Not Enjoyed	47	10	2	78*	46*	28*

† and *, Higher percentage at a significant level of $P < 0{\cdot}05$ and $P < 0{\cdot}005$, respectively; NS, not significant in comparison with the controls.

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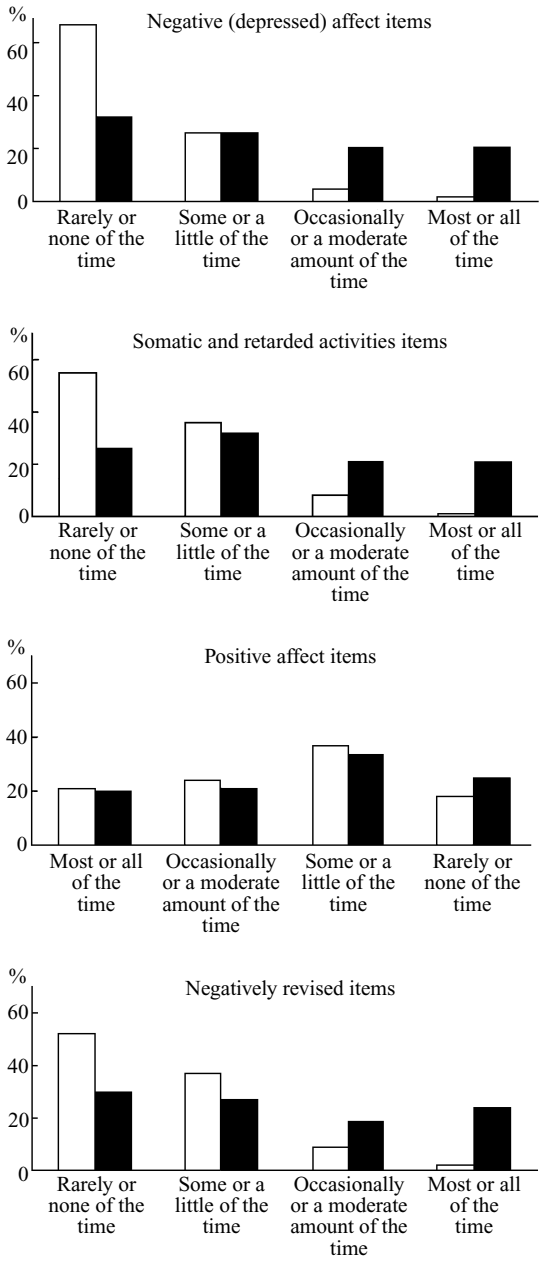

FIG. 1. Comparison of averaged response frequencies between psychiatric out-patients (■) and matched controls (□).

also found among the patients, with one exception of a comparison of responses to items 8 '(not) hopeful' and 22 'not hopeful' ($\chi^2 = 2{\cdot}15$, df = 3, $P = 0{\cdot}54$).

Averaged response profiles indicated that although the responses to negatively revised items were comparable to those for negative symptom items, the responses to positive items were quite different from those of the others (Fig. 1). The profiles on positive items were mostly the same for the patients and the controls. The percentages reflected mean scores on the scale/subscales (data not shown). Although mean scores on all the negative subscales were much higher among the patients than among the controls, those for positive items did not differ between the groups ($t = 1{\cdot}41$, df = 325, $P = 0{\cdot}16$ by t test). The mean score for negatively revised items was significantly lower than that of positive items for both patients ($t = 3{\cdot}14$, df = 80, $P = 0{\cdot}002$ by paired t test) and controls ($t = 15{\cdot}58$, df = 240, $P < 0{\cdot}0001$).

The α-coefficient of the original CES-D scale was 0·83 for the controls and 0·92 for the patients. The α-coefficients of the revised scale, where positive items were replaced by negatively revised items, were 0·91 and 0·94, respectively, yielding statistically significant improvement of the internal consistency in comparison with the original scale (both at $P < 0{\cdot}001$) by the procedure of Feldt (1980).

DISCUSSION

One limitation of this study was the lack of a standard psychiatric assessment for both subject groups. It cannot be ruled out that a few subjects in the control group were not necessarily 'healthy', although it seems reasonable that most of the control subjects except for such cases could be regarded as psychologically healthier than the patient group, which comprised out-patients with depressive disorders necessitating psychiatric treatment. Accordingly, these groups seemed adequate for use in this study, which aimed at examining the measuring properties of positive affect items among clinical patients, rather than being limited to one diagnostic classification, such as Major Depressive Disorder, in comparison with 'general' controls. The matching criteria employed here (gender, age, marital status, and education) might have made the group comparison definitive.

Comparisons of response profile between the groups revealed both similar and different responses for the type of item-wording (Table 1 and Fig. 1). For negative items, the response

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profile differed markedly between the groups, but not for positive items. Our findings for negative items were in line with Craig & Van Natta (1976); i.e. the group difference was more remarkable for symptom predominance and considerably remarkable for symptom persistence. This picture confirmed that the duration and persistence of symptoms might be more significant than the sheer number of symptoms, reflected largely by transient mood change in the assessment of depressive symptoms in patients or community groups.

In contrast, positive affect items with positive wording could not discriminate depressed outpatients from controls. This could be interpreted by two alternative explanations; i.e. positively worded questioning is inappropriate for Japanese subjects, or (lack of) positive affect is not included in the depressive symptomatology of Japanese subjects. However, our results for negatively revised items of positive affect clearly refute the latter explanation. Although a lack of positive affect is included in or associated with depressive symptoms among Japanese subjects, it cannot be adequately assessed by its original positively worded questioning. Revision of the item questioning from positively worded to negatively worded items could be an appropriate adjustment strategy for this bias. This strategy was also preferable from the viewpoint of psychometric properties because the internal consistency significantly improved when positive items were replaced by negatively revised items.

Response profiles for negatively revised items were significantly different from those of their positive counterparts in both groups, with the exception of a comparison of responses to items 8 '(not) hopeful' and 22 'not hopeful' among the patients. This expands the hypothesis of Iwata and colleagues that 'Japanese respondents tend to suppress the expression of positive affect' towards clinical cases. Watson and colleagues (1988) found that both high negative affect and low positive affect were related to depression, whereas only high negative affect was related to anxiety, and concluded that positive affect in depression measures might enhance their sensitivity. However, our results indicated that this concept was not applicable to the Japanese population, by means of the original positively worded measuring form; i.e. positive affect was hardly related to depression among the Japanese if it was assessed by positively worded questioning, as hypothesized by Iwata & Roberts (1996).

Every culture recognizes a distinction between private experience and public display, and thus, in some cultures the suppression of distress could be a means of successful coping (Kirmayer, 1989). Various type of response tendencies may exist in various ethnic groups and sociodemographic segments of populations. Considering the communication style of the Japanese people, this tendency may be rather enhanced in a face-to-face interview setting (Iwata *et al*. 1994). The response bias would possibly be latent even in a standard (psychiatric) interview, and this should be fully investigated in the future. Existing evidence (Chien & Cheng, 1985; Lincoln, 1989; Golding *et al*. 1991) suggests that the bias found in the Japanese population is not necessarily a peculiar case, but is presumably more common in some ethnocultural populations. Positively worded questioning should be dealt with very carefully or revised negatively, if possible, in this kind of questionnaire and interview.

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