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Regular Article

Egalitarian sex role attitudes among Japanese human service professionals: Confirmatory factor analytic study

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Abstract The psychometric properties of the short form of the Scale of Egalitarian Sex Role Attitudes (SESRA-S) were studied among human service professionals. An exploratory factor analysis yielded two factors interpreted as reflecting women's rights (e.g. women at home and men at work [a reverse item]) and women's independence (e.g. working outside is equally important for women [a non-reverse item]), respectively. Confirmatory factor analysis showed a good fit. Impact of participant age, sex, residential area, and type of profession on sex role egalitarianism were examined by four-way layout ANOVA. Men in rural areas had the lowest score in the women's rights subscale and psychiatrists in rural areas had the lowest score in the women's independence subscale.

Key words human service professionals, residential area, sex role egalitarian attitude, women's independence, women's rights.

INTRODUCTION

The move towards egalitarian sex roles has been observed not only in industrialized countries but also in developing countries. Conflicts caused by such movement may be greater in those countries where men have been in the dominant position, and become precipitants of psychological maladjustment.[1,2] Therefore, sex role egalitarianism is an important issue in psychology and psychiatry. Many instruments have been developed[3,4] and have been used to examine the relationship of sex role egalitarianism with acculturation,[2,5–8] attitudes towards violence against women,[7,9] marital adjustment,[5,10–12] perception towards rape,[13] attitudes towards occupation[14–16] and acceptance of divorce.[17,18] Among several instruments that measure attitudes regarding sex roles, Suzuki developed the Scale of Egalitarian Sex Role Attitudes (SESRA).[19] The original version of the SESRA consisted of 40 items measured on a 5-point Likert scale. The SESRA contains 15 reverse items such as 'Raising children is the most important job for a woman' and 25 non-reverse items such as 'For a woman, the roles of wife and mother are important, but working outside is equally important'. Higher scores indicate more egalitarian attitudes.

A short version of the scale (SESRA-S) was developed by selecting 15 items that had factor loadings of ≥0.5 exclusively on a single factor in at least three of six different factor analyses.[20] Thus, Suzuki demonstrated a single factor structure of the SESRA-S; however, this was based on a fairly small population and performed with an orthogonal rotation.[20] Nor did Suzuki conduct a confirmatory factor analysis.

In order to examine the construct validity of the SESRA-S, Suzuki expected that higher scores of the measure would be obtained by women than by men,[4,21–26] by people with higher educational attainment,[27,28] by employed people than by unemployed people,[29] by younger people,[25,29–31] and by people who felt more flexible about the change of a women's surname after marriage. All these expectations were confirmed.[20] However, Suzuki paid no attention to possible confounding effects of these variables on the score of the SESRA-S.

As shown in previous studies, people vary in the degree to which they hold gender role egalitarianism depending on the culture they belong to: that is, ethnicity, gender, generation etc.[8,13,32] The clinical setting is

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an environment in which different cultures meet and interplay. Of clinical importance in sex role egalitarianism is its influence on the attitudes of human service professionals, such as nurses, psychiatrists, social workers, psychologists, health visitors, and school teachers. Different human service professionals construct their own cultures. When such professionals interact with clients, patients, or students who have problems with marital relationships, sexual victimization, or family disharmony, they may treat these people based on their own sex role values; this may result in positive or negative influences on client mental health.

The aims of the present study are (i) to conduct exploratory and confirmatory factor analyses of the SESRA-S; and (ii) to assess the impact of age, gender, type of human service profession, and residential area on the subscale scores of the SESRA-S in a Japanese sample of service professionals.

METHODS

Participants

Human service professionals (e.g. nurses, health visitors, social workers, psychiatrists, clinical psychologists, school teachers, pediatricians, gynecologists, pharmacists, nutritionists, telephone counsellors, speech therapists, and occupational therapists) were solicited to participate in a questionnaire survey. Participation was requested at one general social service counselling center, four health centers, six psychiatric hospitals, three psychiatric clinics, one junior high school, one technical college, two psychiatric departments at general hospitals, and one infants' and neglected children's home. We asked the head of each institution to distribute the questionnaire to employees and confirm an autonomous decision as to participation. The questionnaire was answered anonymously and returned to the researchers. Of a total number of 774 distributed questionnaires, 662 (85%) were returned. Of these, 623 were usable for further analysis (Table 1). As expected, there were more female than male nurses and health visitors ($\chi^2 = 68.23$, $P < 0.01$, d.f. = 6). There were more people living in urban areas for health visitors, psychiatrists, and psychologists than for other professionals ($\chi^2 = 74.65$, $P < 0.01$, d.f. = 6). There was a significant difference in the mean age across different professionals ($F = 4.34$, $P < 0.00$). Scheffe's post-hoc comparison showed that there was a significant difference in the average age of the nurses and social workers, with nurses being older. The men were significantly younger than the women ($t = -5.06$, $P < 0.001$; Table 2).

Measurement

To assess sex role egalitarianism, the SESRA-S was used.[20] The SESRA-S is a self-report measure of egalitarian attitudes towards the roles of men and women. The measure contains 11 reverse items and four non-reverse items with a 5-point scale. A higher score indi-

Table 2. Age distribution

Age range	Men	Women	Total
<21	1	0	1
21–30	62	108	170
31–40	40	82	122
41–50	30	158	188
51–60	20	114	134
61–70	2	4	6
71–80	0	1	1
81–90	0	1	1
Total *n*	155	468	623
χ^2 (d.f)	35.33 (7)***		
Mean ± SD	34.62 ± 10.81	41.64 ± 11.24	40.34 ± 11.35
t-test	t = –5.06***		

***$P < 0.001$.

Table 1. Participant data

	n	Female/male*	Urban/ rural area*	Mean age ± SD*
Nurses	388	303/85	104/282	41.9 ± 10.7
Health visitors	46	46/0	34/12	39.6 ± 11.4
Social workers	31	14/17	15/16	34.7 ± 10.8
Psychiatrists	26	7/19	17/8	40.8 ± 13.7
Psychologists	16	9/7	9/7	35.4 ± 10.5
School teachers	13	4/9	4/9	37.2 ± 9.2
Others	103	80/23	59/42	37.7 ± 12.3
Total	623	468/155	243/376	40.3 ± 11.4

*$P < 0.05$.

cates greater sex role egalitarian attitudes. Suzuki reported that Chronbach's alpha for the SESRA-S was 0.91 and that the test–retest coefficient at a 4-week interval was 0.89.[20]

Demographic data included age, gender, type of profession, residential area, and employer of the respondents.

Statistical analysis

Exploratory factor analysis was performed to determine the number of factors. The data were rotated with PROMAX rotation, an oblique rotation, because we expected that the extracted factors would be dependent on each other. The number of factors was determined by the scree test.[33] Based on this result, confirmatory factor analysis was conducted. Several measures of absolute fit were employed to estimate the extent to which the hypothesized factor model of this SESRA-S fitted the data; these included goodness of fitness index (GFI), adjusted goodness of fitness index (AGFI), and root mean square error of approximation (RMSEA).

The influence of respondent data such as age, sex, residential area, and profession on the score of the SESRA-S was assessed by four-way layout ANOVA.

RESULTS

Factor structure of SESRA-S

The mean ± SD for each SESRA-S item is given in Table 3. Each item showed moderate variation. All items were subjected to exploratory factor analysis. The exploratory factor analysis yielded two factors that accounted for 48.1% of the variance. The correlation between the two factors was 0.31. The first factor was loaded highly by all the reverse items and the second factor was loaded highly by all the non-reverse items. We thought that these dichotomous factors were based on the phraseology of the items (i.e. reverse vs non-reverse) rather than the content of the questionnaire items. The impression given by an item may vary depending on whether it is written positively or negatively. Items that deny egalitarianism may construct a different factor from those items that support egalitarianism although these simply describe the same idea or phenomenon into two different directions. The description of the reverse items in the SESRA-S generally state that women should take traditional women's role (house chores) and are not expected to work outside. The reverse meanings of these sentences are that women should not be bound by house chores. Thus, we interpreted the first factor as 'women's freedom' or 'women's rights'. In contrast, the non-reverse items directly emphasize women's independence and equality with men. Thus, we interpreted the second factor as 'women's independence' or 'women's autonomy'. Thus, we named the first factor as 'women's rights' and the second factor as 'women's independence'.

The factor structure derived from this exploratory factor analysis was examined by confirmatory factor analysis. The model (Fig. 1) showed a good fit: GFI = 0.913, AGFI = 0.883, and RMSEA = 0.077. We calculated two subscales, that is, women's rights and

Table 3. Factor loading on each item of SESRA-S

	Mean ± SD	Factor 1	Factor 2
4, Women at home and men at work	4.31 ± 0.89	0.74	–0.04
2, Important issues should be decided by husbands	4.22 ± 0.95	0.72	–0.04
5, Working women put a strain on the family	4.08 ± 0.93	0.71	–0.04
11, Women should work part-time because they have to raise children	4.03 ± 1.02	0.70	0.09
15, Women should not get a job with responsibility and competition	3.69 ± 1.03	0.68	0.02
3, Working wives cause marital disharmony	4.16 ± 0.92	0.64	–0.03
10, Daughters should be raised to become housewives and sons to have jobs	4.09 ± 1.02	0.62	0.08
1, Women in high social positions have difficulty getting married	4.43 ± 0.82	0.61	0.00
9, It is important to raise a boy to be masculine and a girl to be feminine	3.10 ± 1.22	0.59	0.00
14, Women do not have to work if there is no economic need	3.51 ± 1.04	0.58	0.08
8, Bringing up children is the most important job for women	2.77 ± 1.12	0.50	–0.15
12, Working outside is equally important for women	3.84 ± 1.06	–0.06	0.74
13, Women should work even after having a child	3.38 ± 0.85	–0.10	0.72
7, Domestic chores should be shared between spouses	4.12 ± 0.95	–0.10	0.43
6, No necessity to change surname after marriage	3.32 ± 1.15	0.15	0.32

SESRA-S, Scale of Egalitarian Sex Role Attitudes short form.
Item sentences are abbreviated.

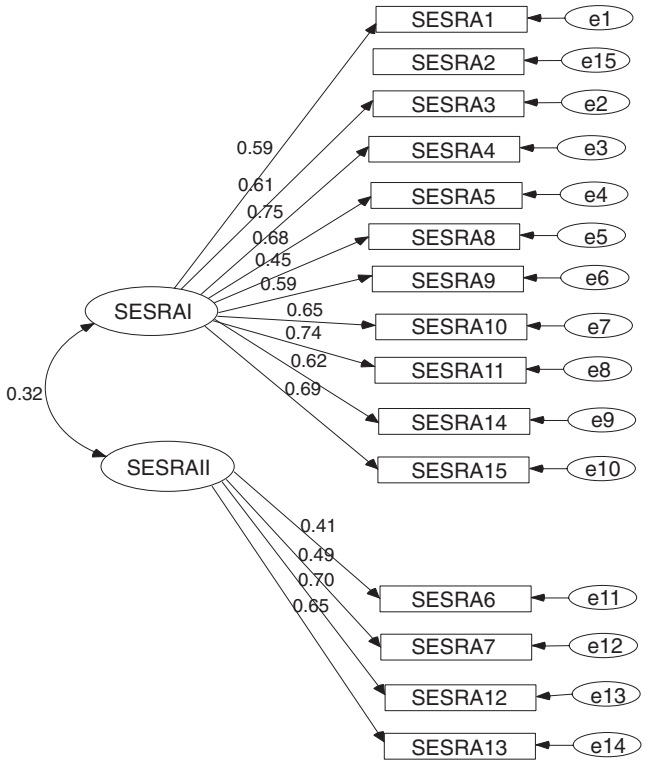

Figure 1. Confirmatory factor analysis of the Scale of Egalitarian Sex Role Attitudes short form (SESRA-S).

women's independence, by summing the scores of items with high factor loadings with either of the two factors.

Impact of demographic data on SESRA-S

Age did not correlate with egalitarian sex role attitudes either in the women's rights score or in the women's independence score. The scores of the two subscales were significantly higher among women than men and among those living in urban areas than those living in rural areas (Table 4). There were also differences between professions. Scheffe's post-hoc comparison showed that the women's rights scores were significantly lower among nurses as compared to health visitors ($P < 0.001$), social workers ($P < 0.05$), and psychologists ($P < 0.05$), and that the women's independence scores were significantly higher among health visitors as compared to nurses ($P < 0.001$) and psychiatrists ($P < 0.05$).

Because these four variables (age, gender, residential area and profession) were interrelated, the effects of the predictor variables on the two SESRA-S subscale scores were examined by four-way layout ANOVA. Each of the two SESRA-S subscales was regressed separately on participant age (<21, 0; 21–30, 1; 31–40, 2; 41–50, 3; 51–60, 4; 61–70, 5; 71–80, 6; >81, 7), gender (male, 0; female, 1), residential area (urban area, 0; rural area, 1), and profession (nurse, 0; health visitor, 1; social worker, 2; psychiatrist, 3; psychologist, 4; schoolteacher, 5). Gender ($F = 5.2$, $P < 0.05$) and profession ($F = 7.2$, $P < 0.001$) had significant effects on the women's rights subscale score. There was a significant interaction between residential area and gender in terms of the women's rights score ($F = 4.5$, $P < 0.05$; Fig. 2). It was shown that

Table 4. SESRA-S subscales

	Women's rights	Women's independence
Sex		
Women	42.29 ± 6.97	14.74 ± 2.74
Men	39.92 ± 8.21	13.90 ± 2.93
t-test	t = –2.896**	t = –2.962**
Residential area		
Urban	43.54 ± 7.00	15.02(2.86
Rural	40.70 ± 7.41	14.28 ± 2.76
t-test	t = 4.31**	t = 2.83**
Profession		
Nurses	40.26 ± 7.05	14.31 ± 2.76
Health visitors	48.26 ± 4.98	16.02 ± 2.65
Social workers	44.39 ± 6.66	15.23 ± 2.60
Psychiatrists	43.08 ± 7.26	13.58 ± 3.43
Psychologists	46.63 ± 6.97	14.75 ± 2.35
School teachers	45.77 ± 8.03	15.85 ± 2.61
Others	46.03 ± 6.98	15.32 ± 2.73
ANOVA	$F = 15.36$***	$F = 4.81$***

SESRA-S, Scale of Egalitarian Sex Role Attitudes short form.
*$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.

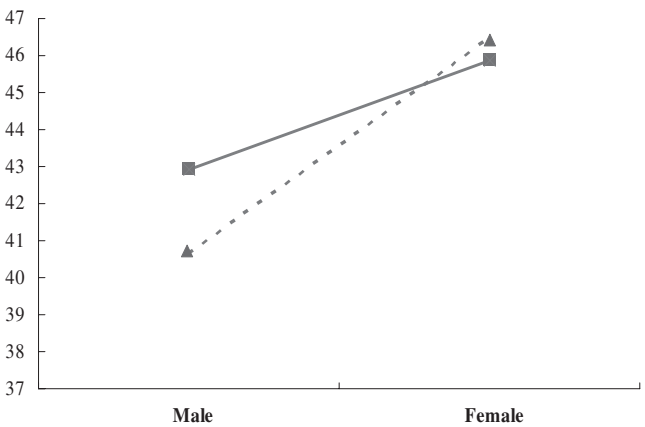

Figure 2. Interaction between the gender and residential area for women's rights score. (■) Urban area; (▲) rural area.

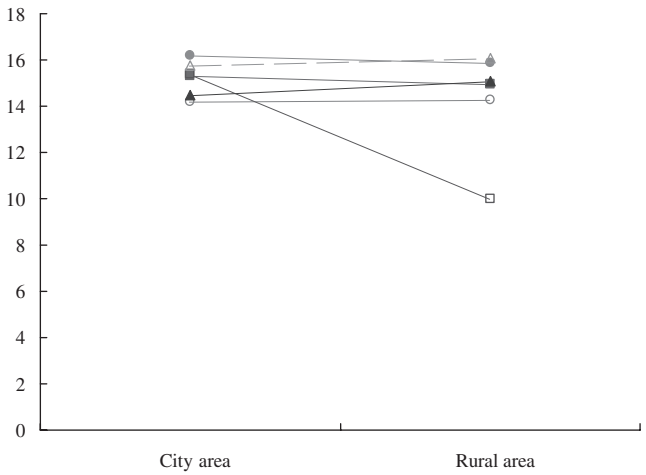

Figure 3. Interaction between the residential area and profession for women's independence score. (○) Nurses; (●) health visitors; (■) social workers; (□) psychiatrists; (▲) psychologists; (△) teachers.

men living in rural areas had the lowest scores on the women's rights subscale.

Profession ($F = 3.9$, $P < 0.001$) and residential area ($F = 5.5$, $P < 0.001$) had significant effects on the women's independence subscale score and a significant interaction was found between profession and residential area in terms of the women's independence score ($F = 2.5$, $P < 0.05$; Fig. 3). Psychiatrists living in rural areas had the lowest scores, whereas those belonging to other groups had virtually the same level of attitudes towards women's independence. This was the case even when the analyses were repeated for the men and women separately.

DISCUSSION

The results of the present exploratory factor analysis of the SESRA-S indicated that it consists of two domains: women's rights and women's independence. Furthermore, a confirmatory factor analysis supported the validity of this conclusion. We then performed statistical analyses to investigate the relationships between sex role egalitarian attitudes and several demographic variables using the scores of these two SESRA-S subscales.

In the present study age had little, if any, influence on the SESRA-S scores. This differs from the results of Suzuki, and Burt and Scott.[20,34] This discrepancy may be attributed to the group of participants: the participants in the present study were professionals who are influenced by sex role egalitarianism in their working environment, whereas the participants enrolled in the studies of Suzuki, and Burt and Scott were non-professionals.[20,34] Indeed Suzuki demonstrated that women in professional/managerial work had higher SESRA scores than others (housewives and those with jobs other than professional/managerial occupations).[29] The previous findings that older people have less sex role egalitarianism may be outweighed by longer professional careers.

As to the gender, the present study partially supported the previous studies, which concluded that women have stronger egalitarian attitudes.[4,20–26,35–37] Female participants scored higher in the women rights subscale than male participants, particularly in the rural area, whereas the two genders did not differ in scores for the women's independence subscale. Thus, the general notion that women are more sensitive to sex role egalitarianism than men is applicable only to women's rights among a Japanese rural population. In contrast, men in rural areas are less sensitive to the women's right domain but are equally as sensitive as women, to women's independence. On average, Japanese men may recognize working women's desires to continue their working careers even after marriage or childbirth (women's independence), but they may be less sensitive about the conservative view of 'man as breadwinner' (women's rights). This is illustrated by anecdotal evidence of a man who says 'I respect my female colleagues at work as equal partners, but I want my wife to be at home looking after the homemaking and children'. Burt and Scott also concluded that men were beginning to accept non-traditional roles for wives but are less willing to support any erosion of male power in family.[34]

As to place of residence, only in the scores of the women's independence subscale did participants from the urban areas score higher than those from rural areas. Compared to rural areas, there are varieties of women's professions in urban areas. Participants in urban areas were more likely to have contact with professional women with strong egalitarian attitudes.[29] In contrast, in rural areas, the variety of women's professions is limited. Thus, participants in rural areas were more likely to have contact with non-professional women with lower egalitarian attitudes.

Regarding profession, our results have shown that psychiatrists in rural areas were the least egalitarian, particularly in the domain of women's independence. This may be due to the fact that most of the psychiatrists working in rural areas were at the top of the feudal organization. These people tend to regard themselves as responsible for every event that happens in their hospitals and tend not to designate responsibility to the nurses, who are usually women.

We should be cautious about our conclusions due to several limitations of the study. First, the distribution of

the participants' sex and type of profession were skewed, and the numbers of psychologists and schoolteachers were insufficient. We concluded that psychiatrists in the rural area had the lowest score in terms of women's independence. However, the number of psychiatrists in rural areas in the present study was small ($n = 8$). Thus, it is not appropriate to generalize these data to all psychiatrists in rural areas. We also concluded that men in rural areas had the lowest score in the domain of women's rights. However, we could not confirm that this was the case in every profession, particularly for health visitors (lack of male participants) and for school teachers (insufficient number of participants). A second limitation is that we had no means by which to examine the effects of the professional's attitudes about gender egalitarianism upon their intervention with their clients.

In summary, the present study has demonstrated that the SESRA-S consists of two subscales: women's rights and women's independence. The construct validity of the scale was supported by the expected association with gender, residential area, and profession.

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