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Abbreviated Measures of Sex Role Egalitarian Attitudes[1]

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Alternate 25-item short forms of the Sex-Role Egalitarianism Scale (SRES) were developed and examined for psychometric quality using data from a sample of 608 students. Internal consistency coefficients were .94 and .92 for the two forms, stability coefficients with a three-week test-retest interval were .88 for each, and the coefficient of equivalence or alternate forms reliability was .87. As expected, females scored significantly more egalitarian than males on both short forms, and results of factor analyses pointed to unidimensional measurement of a single construct for males, females, and the total sample. Additional support for reliability and validity is overviewed. The abbreviated SRES forms appear to provide a psychometrically sound and time-efficient means for assessing egalitarian attitudes.

The Sex-Role Egalitarianism Scale (SRES; Beere, King, Beere, & King, 1984; King, Beere, King, & Beere, 1981) was developed to provide a measure of attitudes toward equality between the sexes, with particular attention to including both items reflecting attitudes toward women in nontraditional roles and those reflecting attitudes toward men in nontraditional roles. The instrument has two 95-item alternate forms (B and K), each consisting of 19-item subscales representing five content domains or role categories: (a) marital, (b) parental, (c) employment, (d) social–interpersonal–heterosexual, and (e) educational. Item statements are accompanied by 5-point Likert response scales (*strongly agree* to *strongly disagree*), with higher values assigned to the more egalitarian response.

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Since its introduction, a steady stream of empirical studies appearing in both the psychometric and gender research literature has attested to the SRES's measurement qualities. Regarding reliability or precision of measurement, Beere et al. (1984) reported total score stability coefficients of .88 and .91 for the two forms, with a three- to four-week interval. The total score internal consistency estimates were .97 for both forms, and the equivalence coefficient for total scores was .93. When the ten domain scores were considered individually (five domains for each of the two forms), coefficients of stability, internal consistency, and equivalence were in the .80–.90 range, quite acceptable given the relatively small number of items on these subscales. In a study of high school students, Honeck (1981) reported very similar internal consistency and equivalence estimates for both total and subscale scores. In addition, King and King's (1983a) generalizability analysis of the SRES demonstrated that the instrument may be relied upon to detect variability among persons with a high level of measurement precision.

Evidence for the validity of the SRES has been in terms of expected differences between college majors (psychology vs. business), and in comparisons of college students, police officers, and senior citizens (Beere et al., 1984). In addition, King and King (1983b) conducted two validity studies that demonstrated that score on the SRES consistently served as a moderator of the tendency to judge males and females differentially in administrative decision-making situations. Brabeck and Weisgerber (1989) likewise found that interaction effects involving SRES scores accounted for significant accounts of variance in the evaluations of males and females entering professions that varied in sex typing.

Additional support for the validity of the SRES is suggested by findings of significant differences between the scores of males and females (Beere et al., 1984; Brabeck & Weisgerber, 1989; Honeck, 1981; King & King, 1985). Historically, various measures of sex role attitudes have yielded male–female differences (e.g., Etaugh, 1975; Goldberg, 1976; MacDonald, 1974; McKinney, 1987; Spence & Helmreich, 1972), with the accompanying rationale that since women have more to gain in social, educational, vocational, and other arenas, they are likely to espouse more liberal or egalitarian beliefs than are men. Thus, such differences using the SRES would appear to provide some validity evidence. However, it might be noted that some researchers have challenged the findings of male–female differences in sex role attitudes as prima facie evidence of true attitudinal differences and have posited the possible operation of differential response bias. For example, Grimes and Hansen (1984) reported an interaction between sex of respondent and sex of interviewer with a sex role attitudinal dependent variable. This interaction could be interpreted either as differential sensitivity of female respondents

to the sex of an interviewer, or the ability of a female interviewer to elicit different sex role attitudinal responses from men and women. Similarly, Jean and Reynolds (1984) demonstrated a differential capability of males and females to fake conservative and liberal sex role attitudes, with women more able than men to fake either attitudinal extreme. This capability was also a function of the particular instrument used. Although, to date, no research paradigm using a faking manipulation has been conducted with the SRES, Beere et al. found low correlations with the Edwards Social Desirability Scale (Edwards, 1957), at least providing some indication that the instrument is not measuring a tendency to respond in a socially desirable manner.

King and King (1985) reported significant relationships between SRES scores and various personality characteristics in a manner consistent with the general definition of egalitarianism. A positive correlation of SRES scores with the need for autonomy and a negative correlation with the need for succorance [both measured by Jackson's (1967) Personality Research Form] portrayed egalitarian persons as those who are more individualistic and self-reliant. A significant negative correlation between SRES scores and Jackson's need for social recognition scale also conformed with the notion that those who hold more nontraditional attitudes toward male and female role behaviors are not unduly concerned with their public image.

Although there is some concern that sex role egalitarianism, as measured by the SRES, may have a pro-woman bias (King & King, 1983b; Razzano, Lombardo, & Francis, 1988), King and King (1986) successfully demonstrated discriminant validity by empirically supporting a hypothesized curvilinear relationship between egalitarianism and feminism, the latter measured by the Attitudes Toward Women Scale (AWS; Spence & Helmreich, 1972). They reasoned first that the SRES and the AWS would have some degree of positive linear relationship representing their common assessment of attitudes toward women in nontraditional roles. But second, they proposed a "flattening out" of the relationship at higher SRES levels since very high SRES scores also reflect attitudes toward men in nontraditional roles, a component not assessed by the AWS. As predicted, the model that best fit the data was a significant linear relationship coupled with a significant quadratic relationship. Therefore, as they concluded, "very high egalitarian people are not necessarily the same individuals who score high on the AWS" (p. 213), suggesting some degree of discriminant validity.

The study reported here is a further effort to establish the viability of sex role egalitarianism as a meaningful construct in gender-related research, specifically by ensuring that it is measured by a reliable, valid, and pragmatically useful instrument. Because the findings of the earlier generalizability analysis of the SRES (King & King, 1983a) suggested that measurement pre-

cision could be maintained with a reduction in the number of items on a form, the present study sought to construct abbreviated versions of SRES forms B and K, and to examine their psychometric qualities. Many researchers, especially when conducting large-scale sutdies involving numerous variables, seek shortened versions of instruments, and there is precedence for short forms throughout the psychometric literature, to include the gender research literature [e.g., Spence, Helmreich, and Stapp's (1973) abbreviated version of the AWS (Spence & Helmreich, 1972) and Bem's (1978) short form of the Bem Sex Role Inventory (Bem, 1974)].

METHOD

Development of Short Forms

As noted above, the 95-item SRES forms consist of 19 items for each of five content domains or role categories. To ensure comparable short form content, it was decided that 5 items from each domain would be placed on each alternate short form. Within each domain, the 5 items having the highest item-total correlations—that is, the largest correlations between item score and the respective domain score—were selected.

The Beere et al. (1984) database was used for this selection process since it was large (N = 367 respondents) and thus could be expected to provide stable estimates of item-total relationships, leading to desirable levels of internal consistency. In addition, this sample had the benefit of being relatively heterogeneous since it was comprised of groups of police officers, senior citizens, students at a private business college, and students enrolled in undergraduate psychology courses at a large public university.

The end result was two abbreviated versions of the SRES, designated BB and KK, each containing 25 items (see Table I for samples). The instructions and response format for these short forms corresponded to those for the full forms.

Psychometric Characteristics

Sample. Participants in this study were 608 volunteer students in introductory psychology, psychological testing, undergraduate statistics, and industrial/organizational psychology courses at one Midwestern University. Although all four courses are offered within the psychology department, only one (the statistics course) is composed of a high percentage of psychology majors. The introductory course is within the university's general education curriculum and enrolls students from the full array of campus disciplines,

Table I. Sample Items for SRES Forms BB and KK

Domain or role category	Form BB	Form KK
Marital	The husband should be the head of the family.	Things work out best in a marriage if a husband leaves his hands off domestic tasks.
Parental	It is more appropriate for a mother rather than a father to change their baby's diaper.	Keeping track of a child's out-of-school activities should be mostly the mother's responsibility.
Employment	It is wrong for a man to enter a traditionally female career.	Women can handle pressures from their jobs as well as men can.
Social–interpersonal–heterosexual	Women are more likely than men to gossip about their acquaintances.	A person should generally be more polite to a woman than to a man.
Educational	Home economics course should be as acceptable for male students as for female students.	Choice of college is not as important for women as for men.

the testing course is generally populated by at least half education majors, and the industrial/organizational course typically enrolls a large number of students in various business specialties. Thus, this student sample was more broad based across disciplines than might be initially apparent.

The mean age of these students was 20.7, with a standard deviation of 4.8 and a range of 17–52. Approximately 39% were males and 61% were females; 59% were at the lower undergraduate level (frehsmen or sophomores), while 39% were upper level undergraduates and the remaining 2% were graduate students. Males had slightly higher representation at the lower undergraduate level (for both freshman and sophomores, 43% males and 57% females) than at the upper undergraduate level (for both juniors and seniors, 32% males and 68% females). The few graduate student respondents were roughly 50% males and 50% females. Although information about individuals' ethnic background and socioeconomic status was not collected, it is reasonable to assume that this sample of students was generally representative of the population of students at their university: largely white (less than 7% minority) and middle class (median family income in the $30,000–$40,000 range).

Procedure and Analyses. Students completed SRES forms during regular classroom sessions. To facilitate a variety of psychometric analyses, a rather complicated system of instrument administration was devised. For 161 of these respondents, abbreviated forms BB and KK were administered on the same occasion. Another 142 of the respondents likewise completed forms BB and KK on the same occasion, but also completed both abbreviated forms on a second occasion three weeks later. For a third group of 66 respondents, forms BB and KK were administered on separate occasions with a three-week interval, and full forms B and K were administered at separate three-week intervals thereafter. The abbreviated short form–full form interval for these respondents was therefore six weeks. Finally, 239 respondents completed an abbreviated form and a full form on the same occasion, with all possible abbreviated form–full form pairings represented (BB with B, KK with K, BB with K, and KK with B). Whenever two forms were given on the same occasion, the order of administration was systematically counterbalanced across respondents; in like fashion, when forms were given on different occasions, the order was counterbalanced across occasions.

Data collection took place across several academic semesters, with particular classes targeted each semester to preclude the possibility that students might complete instruments in more than one course. For example, within a single semester, classes taught at the same time obviously could not introduce the problem of duplicate data; across semesters, students were tested in higher level courses prior to testing students in the introductory course, a prerequisite for all higher level courses.

In addition to estimates of homogeneity or internal consistency reliability for both short forms, the strategy for scale administration allowed for the determination of a coefficient of stability or test–retest reliability for each form and coefficients of equivalence and equivalence-stability (that is, estimates of alternate forms reliability with and without a time interval). Also of interest was the comparability of the means and standard deviations of the two abbreviated forms, as well as the degree to which scores on the short forms correlate with full scale scores, both when administered on the same occasion and with an intervening time interval.

Further analyses included significance tests of differences between mean scores of males and females using the independent *t* test, and an examination of scale dimensionality via principal axis or common factor analysis. For this latter analysis, the 25 items of each short form were clustered into five sets of 5 items each, corresponding to the domains or role categories that they represent, and sums over each of the 5-item clusters were computed. This procedure of computing item composites for factor analysis, rather than using individual item responses, has been recommended and used elsewhere (e.g., Bernstein & Teng, 1989; Byrne, 1988; Marsh, Barnes, Cairns, & Tidman, 1984), and serves as a protection against the well-recognized instability of item-level data. The factor analysis was conducted for forms BB and KK for male and female subsamples, and also for the total sample.

The actual numbers of cases used in the several analyses vary (and differ from numbers in subsample groups) because of incomplete data within forms and student absenteeism across occasions.

RESULTS AND DISCUSSION

Across all respondents in the study, short form BB had a mean of 105.61 and a standard deviation of 13.42 ($N = 467$); short form KK had a mean of 107.35 and a standard deviation of 11.92 ($N = 469$). Thus, the means of the two short forms differed by 1.74 points and the standard deviations by 1.50 points. At the item level (dividing each total score by 25), the difference in means is a rather trivial .07 points on the 5-point response continuum. Of course, the two samples from which these BB and KK statistics were computed, although overlapping, are not composed of the same persons; to gain a more accurate perspective on the equivalence of the instruments, the means and standard deviations of form BB and KK for the 298 respondents who completed both instruments on the same occasion were computed. For form BB, the mean was 106.23 and the standard deviation was 13.05; for form KK, the mean was 107.99 and the standard deviation was 11.42.

Table II. Comparisons of Means and Standard Deviations of SRES Long and Short Forms

	Total scores summed across items			Average item scores		
Form	Mean	Standard deviation	N	Mean	Standard deviation	N
B	383.31	47.43	59	4.03	.50	59
BB	103.19	14.82	59	4.13	.59	59
BB from B[a]	101.78	15.31	59	4.07	.61	59
K	380.13	39.35	68	4.00	.41	68
KK	107.00	11.99	68	4.28	.49	68
KK from K[a]	104.93	12.72	68	4.20	.51	68

[a]"BB from B" "K from K" represent "short form scores" computed from the BB items within long form B and the KK items within long form K, respectively.

At the item level, the difference in means remains approximately .07. Although of secondary interest, it might also be noted that the means and standard deviations of full form scores obtained in the present study (for SRES B, $\bar{X} = 383.74$, $SD = 44.34$, $N = 158$; for SRES K, $\bar{X} = 381.98$, $SD = 42.22$, $N = 178$) were comparable to one another and to values previously reported for similar samples (e.g., Brabeck & Weisgerber, 1989; King & King, 1985).

To further explore the comparability of means and standard deviations across SRES forms, descriptive statistics were computed for the 59 respondents who completed forms B and BB on the same occasion, and the 68 respondents who completed forms K and KK on the same occasion. The results are presented in Table II, for both total scores across items on a form and for average item scores. In general, average item scores for short forms BB and KK appear slightly higher in value than the comparable average item scores computed from full forms B and K, and this pattern persists, to a lesser degree, when BB and KK items are extracted from their longer B and K "parent" forms. In most research situations, such differences are not of concern since the majority of data analytic procedures are founded on deviation scores, and the exact value of the mean or scale origin is inconsequential. In some special situations, however, these slight differences should be taken into account. For example, where a researcher wishes to compare long form average item scores to short form average item scores in a repeated measures design, an adjustment in the computation of the test statistic or a linear transformation of the origin of either scale would be in order.

Table III provides a summary of the various reliability estimates that were obtained for the newly developed short forms. Information is also supplied in the last column of that table on the corresponding reliability estimates for the full forms. Coefficients of homogeneity or internal consistency

Table III. Reliability Information

Coefficient	Psychometric interpretation	Estimate	N	Corresponding value for full form(s)
Homogeneity (internal consistency): SRES BB	Consistency over items	.94	467	.97[a] (SRES B)
Homogeneity (internal consistency): SRES KK	Consistency over items	.92	469	.97[a] (SRES K)
Stability (test–retest with three-week interval): SRES BB	Consistency over occasions	.88	139	.88[a] (SRES B with three- to four-week interval)
Stability (test–retest with three-week interval): SRES KK	Consistency over occasions	.88	141	.91[a] (SRES K with three- to four-week interval)
Equivalence (SRES BB and SRES KK given on same occasion)	Consistency over forms	.87	298	.93[a] (SRES B with SRES K)
Equivalence-stability (SRES BB and SRES KK given on separate occasions with three week interval)	Consistency over occasions and forms	.82	180	.83[b] (SRES B and SRES K with three-week interval)

[a]Values taken from Beere et al. (1984). In the current study, neither Form B nor K was administered on repeated occasions, and thus stability coefficients for the full forms were not obtainable. Moreover, the computation of full-form internal consistency estimates was judged inadvisable using data from the current study due to a low subjects-to-item ratio.
[b]Calculated from data in the current study (N = 45).

reliability for both forms BB and KK suggest that each of these sets of 25 items is appropriately measuring a single construct. It is encouraging that even with a loss of 70 items (from the 95-item full scales to the 25-item short scales) consistency of measurement over items remains remarkably high.

The two coefficients of stability and the coefficient of equivalence for forms BB and KK reported in Table II are likewise quite acceptable and very comparable to those previously determined for their full scale counterparts. Again, it appears that this rather extreme reduction in the number of items does not seriously detract from measurement consistency, either across time or over alternate forms.

As one would expect, the smallest reliability values shown in Table III are those of equivalence-stability, which estimate consistency of measurement over both occasions and forms, and therefore are influenced by two potential sources of error. Even so, the obtained value using short form data is acceptable (although not extraordinarily high) and is very close to the corresponding value computed using data from the full 95-item versions of the SRES.

Table IV presents correlations between the abbreviated forms and the full forms. The average of the four same-occasion short form–full form correlations is .89, with a low of .83 (KK with K) and a high of .95 (BB with B). It is important to note that these correlations were determined from the administration of two separate forms (a short and a full). They are not, therefore, part-whole coefficients determined by correlating scores computed from a subset of full scale items with scores computed across all of those items. A puzzling outcome reflected in Table IV is that the correlation between forms KK and K with a six-week interval (.85), as well as the correlation between forms KK and B on the same occasion (.90) actually exceed the correlation between forms KK and K given on the same occasion (.83). In other words, the pattern of coefficients involving short form BB seems quite logical (.95 with its parent full form on the same occasion, .89 with the alternate full form on the same occasion, and dropping to .75 with its own full form on different occasions); but the corresponding pattern for short form KK (.83,

Table IV. Correlations Between Short Forms and Full Forms

Scores correlated	*r*	*N*
SRES BB with SRES B (same occasion)	.95	59
SRES KK with SRES K (same occasion)	.83	68
SRES BB with SRES K (same occasion)	.89	54
SRES KK with SRES B (same occasion)	.90	41
SRES BB with SRES B (six-week interval)	.75	42
SRES KK with SRES K (six-week interval)	.85	47

Table V. Results of Principal Axis Analyses

5-Item clusters	Form BB			Form KK		
	Females (N = 253)	Males (N = 160)	Total sample (N = 413)	Females (N = 267)	Males (N = 145)	Total sample (N = 412)
Marital items	.82	.92	.91	.74	.85	.85
Parental items	.81	.77	.84	.81	.84	.86
Employment items	.85	.81	.87	.76	.82	.84
Social-interpersonal-heterosexual items	.60	.75	.71	.64	.72	.69
Educational items	.80	.80	.83	.75	.74	.81
Eigenvalues	3.06	3.30	3.51	2.77	3.17	3.31

.90, and .85, respectively) seems counterintuitive. Perhaps this anomaly can only be attributed to sample-specific covariation, and future research with other and larger samples is needed to clarify the issue.

As expected, the SRES short forms yielded significant female–male differences. For form BB, females ($\bar{X} = 111.08$, $SD = 9.70$, $N = 253$) scored significantly higher or more egalitarian than males ($\bar{X} = 96.10$, $SD = 13.66$, $N = 160$; $t = 12.07$, $df = 411$, $p < .05$). Likewise, for form KK, females ($\bar{X} = 111.26$, $SD = 9.40$, $N = 267$) scored significantly more egalitarian than males ($\bar{X} = 99.86$, $SD = 12.14$, $N = 145$; $t = 9.82$, $df = 410$, $p < .05$). These findings are consistent with prior tests of significance using the long SRES forms (Beere et al., 1984; Brabeck & Weisgerber, 1989; Honeck, 1981; King & King, 1985).

The results of the factor analyses displayed in Table V provide strong evidence for the unidimensionality of each short form. Across all six factor analyses (males, females, and the total sample for each of the two forms), a single factor solution was optimal. Moreover, factor structures for males and females were very similar; the computed coefficient of congruence (Harman, 1967) comparing the form BB one-factor solution of males with that of females was .998, and the corresponding coefficient of congruence for form KK was .999. When male and female SRES scores were combined, the total sample factor analyses resulted in the first factor accounting for 70.2% and 66.2% of the variance in forms BB and KK, respectively.

ADDITIONAL PSYCHOMETRIC SUPPORT

Although the study reported here represents the formal introduction of the SRES abbreviated forms into the published literature, a handful of other researchers have used these short forms in their work. In particular, a series of studies by Stith and her associates contribute additional reliability and validity information. Stith (in press) reported an internal consistency estimate of .89 for form BB with a sample of 72 male police officers, and Stith, Crossman, and Bischof (1990) reported an internal consistency estimate of .92 for the same form with a sample of approximately 115 males in spouse abuse or alcohol treatment programs. Additionally, SRES form BB scores correlated negatively and significantly with measures of approval of marital violence for both samples, likelihood of police officers to adopt an antivictim response in a domestic violence situation, and reported use of severe violence in family disputes by men in the aforementioned treatment programs (Crossman, Stith, & Bender, in press; Stith, in press).

A study by Royse and Clawson (1988) compared form KK scores of women who rated themselves very high on a commitment to feminism scale

(average of 8.9 on a 10-point response continuum) to scores of women who rated themselves very low on the same scale (average of 3.0). A highly significant difference in SRES scores was found, with women in the high-commitment group having a mean of 119.4 as compared to a mean of only 77.2 for women in the low-commitment group. Finally, Rosenfeld and Jarrard (1985, 1986) successfully used form KK to obtain students' perceptions of their professors' sexist attitudes, and found significant relationships with classroom climate variables and students' reported use of classroom coping strategies for courses taught by male professors. Thus, there is a moderate accumulation of information to date that complements the psychometric profile of the SRES short forms provided by the current study.

CONCLUSIONS

The findings of the present study provide evidence for the utility of SRES abbreviated form BB and KK as parallel indicators of sex role egalitarian attitudes. The two shortened versions appear to afford reliable measurement over items, forms, and occasions, and to adequately represent that which is measured by their full form counterparts. This study's findings of differences between the means of male and female respondents give some preliminary support for validity, and the single-factor solution for males, females, and the total sample indicates that items on the short forms are measuring a common egalitarianism construct.

The 25-item SRES short forms were designed specifically to measure sex role egalitarianism across all five domains of adult living or role categories that formed the basis of the original conceptualization of the construct. Therefore, these reduced versions of the scale mirror the 95-item full versions in their intent to assess egalitarian attitudes in the broadest sense. The results of this study confirm that this idea of an abbreivated measure of the generalized attitudinal construct is viable. In a certain sense, this focus on a shortened scale measuring egalitarianism across domains is an expansion of earlier attention to reduced SRES item sets. Beere et al. (1984) reported detailed psychometric information for all ten domain scores and suggested that the smaller 19-item domain sets afford "short, face-valid, and reliable measures" (p. 575). Similarly, King and King (1983a) computed components of generalizability coefficients for domain-specific item sets and offered hypothetical research situations where egalitarianism was operationalized in terms of domain measures. Consequently, the amassed data on the SRES point to its utility to future researchers in multiple variations: (a) Of course, full forms B and K offer extensive "coverage" of the egalitarianism construct across all five domains. (b) There are 38 items measuring each of the five domains

from which abbreviated domain-specific measures may be selected. (c) And short forms BB and KK now allow for time-efficient measurement of the generalized construct.

There are a number of directions for future research using the short forms of the SRES. It might be profitable to conduct replications or modified replications of prior research that used the full forms of the instrument in decision-making judgment tasks (Brabeck & Weisgerber; 1989; King & King, 1983b) to determine if the moderating effect of egalitarianism is upheld and can be detected when an abbreviated version is used. As previously noted, other than correlations between SRES scores and a social desirability variable, there has been no research on the suspectibility of the instrument to faking, and a concerted effort to examine potential response bias (for both short and long forms of the scale) might prove valuable. An approach similar to that of Jean and Reynolds (1984) might be employed. In addition, as earlier discussed, further examination of the relationship between scores on the SRES full and abbreviated forms seems in order, preferably with larger number of respondents than the number in the present study who completed both long and short forms. Finally, as with any new instrument, the psychometric properties of the SRES short forms need to be examined with other, more heterogeneous samples. It is encouraging that with a sample of presumably more liberal university students the scale provides reliable measurement of individual differences, yet the potential of the scale to document degrees of sex role attitudes across the full egalitarianism continuum would certainly enhance its credibility.

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