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Home Environment Questionnaire

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Psychometric and normative data are presented for two forms of the Home Environment Questionnaire (HEQ) that provide measures of 10 variables used to describe the psychosocial environments of children. One form, HEQ-2R, is suitable for use with families in which there are two parents; the other form, HEQ-1R, is for use with one-parent families. The HEQ scales are relatively independent and not significantly related to the age of the target child, and most of the scales are reasonably internally consistent. Previous research has found several of the HEQ scales to be significantly related to several dimensions of children's clinically important behavior.

The original development of the Home Environment Questionnaire (HEQ) and preliminary data concerning the psychometric properties of the several scales have been described in a previous report (Laing & Sines, 1982). As noted at that time, all of the information then available dealt with the HEQ scores for children who were being seen in psychological and psychiatric clinics. In that earlier report we also pointed out the need for normative data and a form of the HEQ that would be suitable for use with one-parent families. This report presents such data derived from a sample of 620 families of fourth-, fifth-, and sixth-grade children.

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METHOD

Subjects and Procedure

The preliminary form of the HEQ was administered as part of one component of the 1982 phase of a longitudinal study of coronary heart disease risk factors in children (Lauer, Connor, Leaverton, Reiter, & Clarke, 1975). The parents of 1,400 children attending the fourth, fifth, and sixth grades of 11 schools in a small midwestern city were asked to participate in a study of the characteristics of the family and the behavior of their children. The parents of 873 children returned the signed informed consent statements, and 620 parents actually provided the information requested in a usable form within a 4-month period. Although several other types of data were collected, this report deals only with the HEQ itself.

The preliminary form of the HEQ, consisting of 134 true-false items, was sent to the mother of each child who lived in a two-parent family. A preliminary form of the HEQ for one-parent families, consisting of only those 103 items judged to be appropriate for one-parent families, was sent to the caretaking parent of children living in one-parent households. The age and sex of each target child was recorded.

A total of 544 HEQs were returned by two-parent families (families of 292 boys and 252 girls), and 76 HEQs were returned by one-parent families (families of 42 boys and 34 girls).

HEQs were scored for the scales developed by Laing and Sines (1982), and further item analyses were conducted to make the final assignment of items to scales. When the final item placement had been determined, the item-scale correlations, means and standard deviations of scores on each scale, KR-20 indices of the internal consistencies of the scales, interscale correlations, correlations of the score on each scale with age, and the correlation between the endorsement rates and the social desirabilities of the final HEQ items were calculated. All analyses were done for the one-parent and two-parent families separately, for males and females separately and combined.

RESULTS

Home Environment Questionnaire for Use with Two-Parent Families (HEQ-2R)

On the basis of the item analyses of the 134 items in the preliminary form of the HEQ, 11 items were eliminated for failing to meet the statistical

criteria described by Laing and Sines (1982). The number of items finally assigned to each scale, the means and standard deviations for each scale, and the KR-20 for each scale for males and females, separately and combined, are presented in Table I. The mean scores for boys and girls are significantly different a the .05 level only on the Aggression-Total scale.

The interscale correlations for the final HEQ-2R are presented in Table II with the values for boys above the diagonal and the values for girls below the diagonal.

Table I. Descriptive and Psychometric Information about HEQ-2R Final Scales[a]

Scale name and abbreviation	*N* items	Sample	$\bar{X}$	SD	KR-20
Achievement (Ach)	8	Total	4.39	1.60	.40
		Boys	4.50	1.60	.38
		Girls	4.27	1.59	.38
Aggression-External (Agg-E)	10	Total	1.14	1.74	.76
		Boys	1.25	1.84	.77
		Girls	1.01	1.62	.75
Aggression-Home (Agg-H)	14	Total	5.04	2.76	.71
		Boys	5.14	2.81	.72
		Girls	4.92	2.70	.69
Aggression-Total (Agg-T)	24	Total	6.18	3.53	.75
		Boys	6.39	3.63	.76
		Girls	5.93	3.41	.73
Supervision (Sup)	9	Total	5.83	1.66	.37
		Boys	5.83	1.66	.39
		Girls	5.83	1.67	.38
Change (Ch)	19	Total	4.15	2.83	.72
		Boys	4.33	2.92	.74
		Girls	3.95	2.73	.70
Affiliation (Aff)	25	Total	17.63	4.89	.83
		Boys	17.72	4.68	.82
		Girls	17.52	5.14	.85
Separation (Sep)	9	Total	1.69	1.30	.27
		Boys	1.66	1.27	.22
		Girls	1.73	1.33	.31
Sociability (Soc)	4	Total	2.51	1.18	.49
		Boys	2.58	1.22	.55
		Girls	2.44	1.14	.41
Socioeconomic Status (SS)	25	Total	12.82	5.38	.84
		Boys	12.94	5.47	.85
		Girls	12.69	5.28	.84

[a]Total families = 544, *n* boys = 292, *n* girls = 252.

Table II. Interscale Correlations for HEQ-2R Scales[a,b]

	Ach	Agg-E	Agg-H	Agg-T	Sup	Ch	Aff	Sep	Soc	SS
Ach	—	−.17	−.08	−.15	.20	−.26	.28	−.16	.27	.50
Agg-E	−.10	—	.18	.65	−.11	.26	−.45	.23	−.23	−.19
Agg-H	−.12[c]	.19	—	.87	−.01	.23	−.39	.16	−.25	−.19
Agg-T	−.15	.63	.88	—	−.06	.31	−.53	.24	−.31	−.24
Sup	.16[d]	−.12	−.07	−.11	—	−.03	.07	−.08	.10	.24
Ch	−.28	.06	.17	.16	.05	—	−.51	.30	−.17	−.30
Aff	.28	−.27	−.23	−.31	.01	−.37	—	−.33	.37	.29
Sep	−.04	.03	.17	.15	−.09	.20	−.28	—	−.08	−.01
Soc	.22	−.27	−.22	−.30	.12	−.06	.22	−.07	—	.23
SS	.45	−.15	−.27	−.29	.30	−.11	.18	−.06	.20	—

[a]Scale names are provided in Table I.
[b]Males: $n = 292$, above the diagonal; females: $n = 252$, below the diagonal.
[c].12 significant at .05.
[d].16 significant at .01.

Table III. Interscale[a] Correlations for HEQ-2R ($N = 544$) Above the Diagonal and for HEQ-1R ($N = 76$) Below the Diagonal

	Ach	Agg-E	Agg-H	Agg-T	Sup	Ch	Aff	Sep	Soc	SS
Ach	—	−.14	−.10	−.14	.18	−.26	.28	−.10	.25	.48
Agg-E	−.20	—	.19	.64	−.12	.18	−.36	.14	−.24	−.17
Agg-H	−.06	.17	—	.87	−.03	.20	−.31	.16	−.23	−.23
Agg-T	−.14	.65	.86	—	−.08	.25	−.42	.20	−.30	−.26
Sup	−.09	.16	−.17	−.05	—	.01	.04	−.09	.11	.27
Ch	−.29	−.01	−.21	−.16	.25	—	−.44	.25	−.12	−.22
Aff	.42	.02	−.11	−.08	−.01	−.19	—	−.31	.30	.24
Sep	−.17	.06	.08	.10	−.01	.13	.02	—	−.08	−.03
Soc	.06	.10	−.06	.01	−.04	.10	.18	−.01	—	.22
SS	.25	−.02	−.10	−.09	.17	−.25	.06	−.13	−.09	—

[a]Scale names are provided in Table I.

The interscale correlations for HEQ-2R for boys and girls combined are presented above the diagonal in Table III.

The correlation between the endorsement rates (proportion of "true" responses) and the rated social desirability of a "true" response for the 123 items in HEQ-2R was +.72 for the total sample of two-parent families. The correlations between the children's ages and their scores on each of the HEQ-2R scales are presented in Table IV for boys and girls separately.

Home Environment Questionnaire for Use with One-Parent Families (HEQ-1R)

Each preliminary shortened HEQ received from a one-parent family was scored for each scale based on the scale placement of those items in the final HEQ-2R. The descriptive psychometric information about these scales is presented in Table V.

The interscale correlations for HEQ-1R are presented in Table VI, with the values for boys above the diagonal and the values for girls below the diagonal.

The Interscale correlations for the HEQ-1R scales are presented below the diagonal in Table III, and the correlations between the children's ages and their scores on each of the HEQ-1R scales are presented in Table IV for boys and girls separately.

The correlations between the rated social desirability of a "true" response for the final items in HEQ-1R and the proportion of the single-parent families that responded "true" to those items was +.32 for the total group of 76 single-parent families.

DISCUSSION

The final HEQ-2R consists of 123 true-false items designed to reflect 10 separable dimensions of the objective and verifiable psychosocial environments of children who live in two-parent families. Six of those 10 dimensional scales are reasonably internally consistent, and they are relatively independent of each other.

The internal consistencies of the several scales on the HEQ-2R are rather varied, with only 6 of 10 exceeding .70. Continuing efforts will be made to identify additional items that can be used to increase the homogeneity of several of the shorter scales. For the present, however, the existing scales may be useful in estimating potentially modifiable environmental variables that may account for some portion of the clinically significant observable behaviors of children.

Table IV. Correlations Between HEQ Scale[a] Scores and Age

	Ach	Agg-E	Agg-H	Agg-T	Sup	Ch	Aff	Sep	Soc	SS
HEQ-2R										
Boys (n = 292)	−.05	.08	−.04	.01	−.04	−.02	−.13[b]	−.02	.02	−.03
Girls (n = 252)	.07	.07	−.08	−.03	.01	.06	.04	−.05	.12	.04
HEQ-1R										
Boys (n = 42)	.12	.24	−.05	.09	−.09	−.16	−.11	−.04	.34[b]	.19
Girls (n = 34)	.07	.10	−.07	.00	−.25	.05	−.25	.18	−.12	.00

[a]Scale names are provided in Table I.
[b]$p < .05$.

Table V. Descriptive and Psychometric Information about HEQ-1R Final Scales[a]

Scale[b]	*N* items	Sample	$\bar{X}$	*SD*	KR-20
Ach	8	Total	3.53	1.56	.34
		Boys	3.43	1.73	.48
		Girls	3.65	1.34	.04
Agg-E	10	Total	1.36	1.84	.75
		Boys	1.28	1.90	.78
		Girls	1.47	1.78	.70
Agg-H	14	Total	5.42	2.76	.67
		Boys	5.45	2.86	.69
		Girls	5.38	2.67	.66
Agg-T	24	Total	6.79	3.57	.72
		Boys	6.74	3.58	.72
		Girls	6.85	3.60	.73
Sup	9	Total	6.03	1.56	.26
		Boys	5.93	1.64	.31
		Girls	6.15	1.46	.20
Ch	14	Total	8.95	2.43	.56
		Boys	8.74	2.39	.53
		Girls	9.20	2.50	.59
Aff	10	Total	6.95	2.43	.74
		Boys	6.64	2.72	.79
		Girls	7.32	2.00	.60
Sep	5	Total	.92	1.00	.33
		Boys	.90	1.03	.40
		Girls	.94	.98	.25
Soc	3	Total	1.38	.96	.36
		Boys	1.21	.98	.39
		Girls	1.59	.92	.28
SS	18	Total	7.26	2.96	.63
		Boys	7.83	3.24	.70
		Girls	6.56	2.43	.44

[a]Total families = 76, *n* boys = 42, *n* girls = 34.
[b]Scale names are provided in Table I.

The mean differences in scale scores earned by boys and girls on the HEQ-2R are quite small, and on only one scale (Aggression-Total) does that difference reach the .05 level of significance. In view of those nearly identical scale means, the use of one set of norms for boys and girls appears to be justified at this time.

Now that normative data are available on a large sample of nonclinic children, we will be able to assess the behavioral correlates of the HEQ-2R scales individually and in various patterned combinations. The necessary data are now being collected for clinical and nonclinical samples of children.

Table VI. Interscale[a] Correlations for HEQ-1R[b]

	Ach	Agg-E	Agg-H	Agg-T	Sup	Ch	Aff	Sep	Soc	SS
Ach	—	−.34	.03	−.16	−.31	−.24	.46	−.09	.19	.18
Agg-E	.05	—	.10	.61	.09	−.01	−.03	.00	.15	−.05
Agg-H	−.20	.28	—	.85	−.15	−.26	−.12	.04	−.07	−.09
Agg-T	−.13	.70	.88	—	−.07	−.22	−.12	.03	.02	−.10
Sup	.27	.25	−.20	−.02	—	.33	−.17	−.02	−.23	.08
Ch	−.41[c]	−.02	−.13	−.11	.12	—	−.22	.11	.13	−.12
Aff	.33	.08	−.09	−.03	.20	−.20	—	.02	.09	.02
Sep	−.31	.14	.15	.18	.01	.16	.00	—	−.20	−.03
Soc	−.19	.01	−.03	−.02	.20	.02	.23	.24	—	−.13
SS	.46[d]	.07	−.14	−.07	.39	−.44	.24	−.29	.09	—

[a]Scale names are provided in Table I.
[b]Boys: $n = 42$, above the diagonal; girls: $n = 34$, below the diagonal.
[c].35 = $p < .05$.
[d].42 = $p < .01$.

The high and highly significant correlation between endorsement rates and social desirability ratings of the items in HEQ-2R in a nonclinic group of children bears further examination. The correlation of +.72 in this total sample is to be contrasted with the correlation of +.50 in the clinical sample used by Laing and Sines (1982) and the correlation of +.32 in the present sample of single-parent families. While there is the possibility that the parents of the nonclinic children in this study responded defensively and untruthfully, it seems more likely that in the environments of this sample of families, the frequencies of the socially desirable characteristics were in fact higher than the frequencies of the less desirable characteristics.

One of the original reasons for choosing to assess objective dimensions of children's environments was the fact that the items themselves are more nearly observable. With the marked increase in the use of observational assessment procedures with children, it should be possible fairly quickly to collect the data necessary to assess the veridicality or the bias in responses of parents to HEQ items.

Earlier research with clinic children has indicated the behavioral relevance of HEQ scores may be significantly different for boys and girls, supporting the treatment and interpretation of HEQ-2R scale scores for boys and girls separately.

During the early development of the HEQ, several psychologists who contributed data to our program noted that many of the items in the preliminary forms of the HEQ were inapproriate for use with single-parent families. For that reason we removed all items tht implied the presence of two parents and used a provisional 103-item HEQ-1R with single-parent families in this study. Twelve of those items were dropped on the basis of the analysis of the data from the present sample of 76 single-parent families, so the final form of HEQ-1R consists of 91 true-false items. Because the sample of single-parent families is so small, the data presented in Table V concerning HEQ-1R may be revised as more data become available. Nonetheless, these data are the best now available on single-parent families and can serve as reference points with which other samples of clinic and nonclinic single-parent families can be compared.

One of the uses for measures of the psychosocial environments of children is to determine what portion of the observable behavior presented by those children can be explained or accounted for by the environmental conditions to which they are exposed. Theoretically, and on the basis of the available empirical data, it seems highly unlikely that children's behavior can be explained satisfactorily in terms of personality characteristics alone. The Home Environment Questionnaire (HEQ) was developed to quantify several dimensions of children's psychosocial environments in a manner that would allow us to determine the independent contribution of environmental fac-

tors to children's behavior and then to determine the extent to which those environmental variables interact with children's personality characteristics to account for observable behavior. Before undertaking such studies, however, it is necessary to document the psychometric characteristics of the proposed measures of psychosocial environmental variables.

A major assumption underlying the HEQ is that such environmental press, singly and in additive or patterned combination, will account for a significant portion of the variance in children's observable behaviors that are of clinical and social interest. Previous research has indicated that several of the HEQ scales are significantly correlated with several dimensions of children's clinically important behavior, such as aggression, withdrawal, and activity level. Now that stable normative data are avilable for the HEQ, more definitive research can be undertaken on the behavioral relevance of the measured dimensions of children's environments.

REFERENCES

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