

Singapore Longitudinal Early Development Study (SG LEADS)



Panel Survey Wave 1

Technical Report 12

Psychosocial Measures in SG LEADS Wave 1

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This technical report documents the psychosocial measures used in SG LEADS Wave 1, such as psychological well-being, attitudes, and behaviour of primary caregivers and children.

Data was collected from 3,476 households and 5,005 children aged 0 to 6 years, from November 2018 to August 2019. Wave 1 household-level normalized sampling weight (see Wave 1 Report 4) was applied to all analyses on the primary caregiver’s psychosocial indicators and other household-level data, and Wave 1 child-level normalized sampling weight was applied to all the analyses on the child’s psychosocial indicators and other child-level data, in this report.

All the factor analyses conducted in this technical report used PRINCIPAL COMPONENTS as the extraction method and VARIMAX as the rotation method.

Self-Esteem (Primary Caregiver)

The 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) is a widely used measure of global self-esteem, with good validity and reliability. Primary caregivers reported on a 4-point scale at HB_C1a-j, with 1 indicating “Strongly Agree” and 4 indicating “Strongly Disagree”. We recoded ‘1’=‘4’, ‘2’=‘3’, ‘3’=‘2’, and ‘4’=‘1’ so that a higher score indicates a higher level of agreement.

Factor analysis confirmed that the items grouped well (see Table 1), with five negatively keyed items (i.e., items b, e, f, h, and i) obtaining negative factor loadings. Prior to scoring, these 5 items were reversed scored. Scores of all items were then averaged to indicate self-esteem ($M = 3.23$, $SD = 0.44$, range: 2.10-4.00). The Rosenberg Self-Esteem scale exhibited good internal reliability (Cronbach’s $\alpha = 0.86$) in the current sample.

Table 1. Factor Loadings for the Rosenberg Self-Esteem Scale

HB_C1. Below is a list of statements dealing with your general feelings about yourself. Please select the number that indicates your level of agreement with the following statements.	Factor Loading
a. On the whole, I am satisfied with myself	0.67
b. At times, I think I am no good at all (<i>R</i>)	-0.68
c. I feel that I have a number of good qualities	0.72
d. I am able to do things as well as most other people	0.60
e. I feel I do not have much to be proud of (<i>R</i>)	-0.60
f. I certainly feel useless at times (<i>R</i>)	-0.70
g. I feel that I’m a person of worth, at least on an equal basis with others	0.63
h. I wish I could have more respect for myself (<i>R</i>)	-0.46
i. All in all, I am inclined to feel that I am a failure (<i>R</i>)	-0.69
j. I take a positive attitude toward myself	0.68
Number of items	10
Cronbach’s alpha	0.87
N	3,476

Self-Control (Primary Caregiver)

The 10-item Self-Control Scale (SCS; Tangney et al., 2004) measures the primary caregiver's self-control. Primary caregivers reported on a 5-point scale at HB_C7a-j, with 1 indicating "Not at all like me" and 5 indicating "Very much like me".

Factor analysis returned a two-factor solution (see Table 2), with 7 negatively-keyed items (i.e., items b, c, d, f, h, I, j) and 3 positively-keyed items (i.e., items a, e, g). The 7 negatively-keyed items were reversed scored so that a higher score indicates greater self-control. The average score of all items on the scale was then calculated to indicate the primary caregiver's self-control (Cronbach's alpha = 0.73). The mean score on the Self-Control Scale was 3.99, with a range of 1.60 to 5.00, and a standard deviation of 0.56.

Table 2. Factor Loadings for the Self-Control Scale

HB_C7. Below is a list of statements dealing with your general feelings about yourself. Please select the number that indicates your level of agreement with the following statements.	Factor 1 (Negatively Keyed)	Factor 2 (Positively Keyed)
a. I am good at resisting temptation	-0.12	0.67
b. I have a hard time breaking bad habits (<i>R</i>)	0.64	-0.13
c. I say inappropriate things (<i>R</i>)	0.67	-0.088
d. I do certain things that are bad for me if they are fun (<i>R</i>)	0.65	-0.20
e. I refuse things that are bad for me	-0.060	0.78
f. I wish I had more self-discipline (<i>R</i>)	0.49	0.20
g. People would say that I have very strong self-discipline	-0.10	0.72
h. Pleasure and fun sometimes keep me from getting work done (<i>R</i>)	0.66	-0.082
i. Sometimes I can't stop myself from doing something, even if I know it is wrong (<i>R</i>)	0.74	-0.19
j. I often act without thinking through all the alternatives (<i>R</i>)	0.71	-0.10
Number of items	7	3
Cronbach's alpha	0.77	0.59
N	3,476	3,476

Non-Specific Psychological Distress (Primary Caregiver)

The 6-item Kessler Psychological Distress Scale (K6) was developed by Kessler (2002) to identify cases of serious mental illness in a general population survey. The K6 scale includes six items that queried the primary caregivers about how they have been feeling during the prior four weeks. Responses items (at HB_C7a-f) are based on a 5-point scale where 1 indicates “All of the Time” and 5 indicates “None of the Time”. Before scoring, all items are rescored following the coding in Table 3a, as ‘5’ = ‘0’, ‘4’ = ‘1’, ‘3’ = ‘2’, ‘2’ = ‘3’, ‘1’ = ‘4’.

Factor analysis (see Table 3b) confirmed that all items grouped well. Scores of all items in the scale were summed to indicate the extent to which the primary caregiver experiences non-specific psychological distress.

A mean score of 3.07 with a standard deviation of 3.68, a range of 0 to 23, was found in the K-6. The internal reliability was good (Cronbach’s $\alpha = 0.86$) in the current sample. A score of 13 or higher indicates a potential for nonspecific distress (unweighted $n = 116$, weighted 2.4%).

Table 3a. Recoding of the K-6 Scale

	All of the time	Most of the Time	Some of the Time	A Little of the Time	None of the Time
a. Feel nervous?	4	3	2	1	0
b. Feel hopeless?	4	3	2	1	0
c. Feel restless or fidgety?	4	3	2	1	0
d. Feel that everything was an effort?	4	3	2	1	0
e. Feel so sad nothing could cheer you up?	4	3	2	1	0
f. Feel worthless?	4	3	2	1	0

Table 3b. Factor Loadings for the K-6 Scale

HB_C7. During the past 30 days, how often did you...	Factor Loading
a. Feel nervous?	0.80
b. Feel hopeless?	0.84
c. Feel restless or fidgety?	0.75
d. Feel that everything was an effort?	0.74
e. Feel so sad nothing could cheer you up?	0.81
f. Feel worthless?	0.77
Number of items	6
Cronbach’s alpha	0.86
N	3,476

Limit Setting (Household Level)

Primary caregivers reported how often they set boundaries on their children's activities in general, on a 5-point scale (1=*never*, 2=*seldom*, 3=*sometimes*, 4=*often*, 5=*very often*). If all children in the household were under age 3, the primary caregiver skipped the entire set of questions (unweighted $n = 811$, weighted 23.5%). Item d and item e allowed for a response of "not applicable" (recoded as missing prior to scoring) if the child(ren) has/have not started school or daycare, or has/have never had homework.

Factor analysis results are presented in Table 4. The average score of all items was calculated to indicate the extent to which the primary caregiver sets boundaries on the child(ren)'s activities ($M = 3.30$, $SD = 0.76$, range: 1-5).

Table 4. Factor Loadings for the Limit Setting Index

HB_D2. How often do you do the following?	Factor Loading
a. Set limits on how late your child(ren) can stay up at night	0.76
b. Set limits on how much candy, sweets or other snacks your child(ren) can have?	0.75
c. Decide which other children your child(ren) spend(s) time with?	0.46
d. Decide how your child(ren) spend(s) time after school or daycare? *	0.80
e. Set a time when your child(ren) (does/do) homework? **	0.77
f. Discuss these rules with your child(ren)?	0.74
Number of items	6
Cronbach's alpha	0.80
Unweighted N	2,665[^]

*If the child(ren) does/do not attend school or daycare, select "Not Applicable" in HB_D2d.

**If the child(ren) does/do not have homework, select "Not Applicable" in HB_D2e.

[^]811 households skipped the Limit Setting Index because all children in these households were under 3 years of age.

Parenting Stress (Primary Caregiver)

The Aggravation in Parenting Scale (HB_D3a-d) measures parenting stress that results from being a parent and raising a family, on a 5-point scale, where 1 indicates “not at all true”, and 5 indicates “completely true”.

Factor analysis confirmed that these items mapped together (see Table 5). The internal reliability of the parenting stress scale was good, with a Cronbach’s alpha of 0.80 ($n = 3,476$). Scores of all items in the scale were averaged to indicate the primary caregiver’s perceived parenting stress, with a higher score indicating a higher level of parenting stress. A mean score of 2.63 with a standard deviation of 1.07, a range of 1.00 to 5.00, was found in the Aggravation in Parenting Scale.

Table 5. Factor Loadings for the Aggravation in Parenting Scale

HB_D3. Listed below are statements about raising children. Thinking about your child(ren), please indicate on a scale from 1 (not at all true) to 5 (completely true) the number that best describes how true each statement is.	Factor Loading
a. Being a parent is harder than I thought it would be	0.79
b. I feel trapped by my responsibilities as a parent/caregiver	0.76
c. I find that taking care of my child(ren) is much more work than pleasure	0.80
d. I often feel tired, worn out, or exhausted from raising a family	0.83
Number of items	4
Cronbach’s alpha	0.80
N	3,476

Attitudes about Gender Roles (Primary Caregiver)

HB_E23a-l measure the primary caregiver’s attitudes about gender roles. Primary caregivers rated their levels of agreement with 12 statements pertaining to gender roles in household duties and child-rearing, on a 4-point scale that ranges from 1 (“Strongly Disagree”) to 4 (“Strongly Agree”).

Factor analysis using SG LEADS Wave 1 data confirmed the four constructs of gender roles attitudes (see Table 6a), namely Traditional Marriage Values (3 items), Traditional Mothering Values (2 items), Equity (3 items), and Father Involvement (3 items). Item i did not load on any dimension. Traditional Marriage Values was constructed by an average score of items b-d ($M = 2.49$, $SD = 0.64$, Cronbach’s $\alpha = 0.86$). Traditional Mothering Values was constructed by an average score of items g and h ($M = 2.42$, $SD = 0.81$, Cronbach’s $\alpha = 0.78$). Equity was constructed by an average score of items a, e, and f ($M = 3.29$, $SD = 0.48$, Cronbach’s $\alpha = 0.62$). Father Involvement was constructed by an average score of items j-l ($M = 3.51$, $SD = 0.52$, Cronbach’s $\alpha = 0.91$).

Table 6a. Factor Loadings for the Gender Roles Attitudes Scale

HB_E23. In most families, there are disagreements or arguments. How often do you and your spouse/partner (OR secondary caregiver not including domestic helper) disagree about:	Factor 1: Father Involvement	Factor 2: Traditional Marriage Value	Factor 3: Traditional Mothering Value	Factor 4: Equity
a. If a husband and a wife both work full-time, they should share household tasks equally	0.40	0.020	0.078	0.56
b. Women are much happier if they stay at home and take care of their children	0.18	0.83	0.13	-0.087
c. It is much better for everyone if the man earns the main living and the woman takes care of the home and family	-0.051	0.85	0.18	-0.040
d. It is more important for a wife to help her husband’s career than to have one <i>herself</i>	-0.087	0.80	0.087	0.007
e. An employed mother can establish as warm and secure a relationship with her children as a mother who is not employed	0.083	-0.019	-0.16	0.82
f. Parents should encourage just as much independence in their daughters as in their sons	0.42	-0.16	0.039	0.62
g. Preschool children are likely to suffer if their mother is employed	-0.12	0.39	0.69	0.19
h. Mothers should not work full time if their child is younger than 5 years old	-0.12	0.37	0.78	0.034
i. It is fine for children under 3 years of age to be cared for all day in a daycare centre or daycare home	0.013	0.098	-0.72	0.34
j. It is essential for the child’s well-being that fathers spend time interacting and playing with their children	0.88	-0.058	-0.11	0.19
k. A father should be as heavily involved in the care of his child as the mother	0.89	-0.049	-0.074	0.19
l. Fathers play a central role in the child’s personality development	0.89	-0.035	-0.088	0.17
Number of items used	3	3	2	3
Cronbach’s alpha	0.91	0.81	0.78	0.63
N	3,476	3,476	3,476	3,476

Parental Disagreement

The 6-item Parental Disagreement Scale measures the extent of disagreement between parents (or between the primary caregiver and the secondary caregiver) on daily activities, such as child-rearing, money spent, time spent, and behaviours. This set of questions (HB_E23a-f) was administered to primary caregivers living with a spouse/partner or another caregiver (unweighted $n = 3,331$, weighted 96.8%). These primary caregivers reported on a 4-point scale, where 1 indicates “Never”, and 4 indicates “Often”. This scale was constructed as an average score of the six items. The mean score on the Parental Disagreement Scale was 1.73, with a range of 1.00 to 4.00, and a standard deviation of 0.58. This scale possessed good internal reliability with a Cronbach’s alpha of 0.82.

Table 7. Factor Loadings for the Parental Disagreement Scale

HB_E23. In most families, there are disagreements or arguments. How often do you and your spouse/partner (OR secondary caregiver not including domestic helper) disagree about ...	Factor Loading
a. How your children are raised?	0.80
b. How you spend money on children?	0.85
c. The amount of time (he/she) spends with children?	0.83
d. The friends your (spouse/partner/another caregiver) spends time with?	0.80
e. Your (spouse’s/partner’s/other caregiver’s) use of alcohol?	0.53
f. Your (spouse’s/partner’s/other caregiver’s) gambling habits?	0.46
Number of items	6
Cronbach’s alpha	0.82
Unweighted N	3,331[^]

[^]145 primary caregivers did not live with another caregiver so skipped this scale.

Family Conflict

A set of five questions (HB_E24a-e) measures the methods of conflict resolution among family members, such as fighting, criticizing, or calmly discussing problems. Primary caregivers reported on a 4-point scale that ranges from 1 (“Strongly Disagree”) to 4 (“Strongly Agree”). Item c “Family members always calmly discuss problems” was excluded from scoring due to its low factor loading (see Table 8). Scores of the other 4 items were averaged to indicate the extent of family conflict. A mean score of 1.51 with a standard deviation of 0.51, a range of 1.00 to 4.00, was found. The internal reliability was in the Good range with a Cronbach’s alpha of 0.82 ($N = 3,476$).

Table 8. Factor Loadings for the Family Conflict Index

HB_E24.	Factor Loading
a. We fight a lot in our family	0.85
b. Family members sometimes get so angry they throw things	0.87
c. Family members always calmly discuss problems.	** (-0.34)
d. Family members sometimes hit each other	0.78
e. Family members often criticize each other	0.73
Number of items used	4
Cronbach’s alpha	0.82
N	3,476

**Not included in the scale due to low factor loading

Couple Relationship Satisfaction (Primary Caregiver)

The Couples Satisfaction Index (CSI-4; Frunk & Rogge, 2007) measures the primary caregiver's satisfaction with the relationship with the spouse or partner. This scale was administered to primary caregivers living with a spouse/partner (unweighted $n = 3,295$, weighted 96.0%). Primary caregivers reported on a 6-point scale at HB_E25a-d, with 0 indicating "Not at all" and 5 indicating "Completely". The responses were averaged to indicate the primary caregiver's satisfaction with her/his relationship with the spouse or partner, with a higher score indicating a higher level of satisfaction ($M = 5.16$, $SD = 0.93$, range: 1.00-6.00). This index exhibited excellent internal reliability (Cronbach's $\alpha = 0.98$).

Table 9. Factor Loadings for the Couples Satisfaction Index

HB_E25. Please indicate how your relationship with your spouse/partner is:	Factor Loading
a. All things considered, how happy is your relationship with your partner?	0.96
b. How warm and comfortable is your relationship with your partner?	0.97
c. How rewarding is your relationship with your partner?	0.96
d. In general, how satisfied are you with your relationship?	0.97
Number of items	4
Cronbach's alpha	0.98
Unweighted N	3,295[^]

[^]181 primary caregivers did not live with a spouse/partner so skipped this scale.

Prosocial Behaviours (Child)

The 5-item Prosocial Behaviour subscale selected from the Strengths and Difficulties Questionnaire (SDQ) measures children's prosocial behaviour in the preceding six months, including sharing, consideration of the feelings of others, and volunteering to help others. Response options range from 1 ("Not true") to 3 ("Certainly true"). The five items (CB_D5a-e) were administered to primary caregivers of children between 3 and 6 years in Wave 1 (unweighted $n = 2,953$, weighted 59.5%). Factor analysis results (see Table 10) showed that the five items mapped together well, with excellent internal reliability (Cronbach's $\alpha = 0.90$). The average score of the five items on the scale was calculated to indicate the child's prosocial behaviour ($M = 2.35$, $SD = 0.49$, range: 1-3).

Table 10. Factor Loadings for the Prosocial Behaviour Scale

CB_D5. Please give your answers to the next questions on the basis of (CHILD)'s behaviour over the last six months. Answer as best you can, even if you are not absolutely certain. Now, thinking about (CHILD), he/she ...	Factor Loading
a. Is considerate of other people's feelings	0.84
b. Shares readily with other children (treats, toys, pencils etc.)	0.83
c. Is helpful if someone is hurt, upset or feeling ill	0.88
d. Is kind to younger children	0.88
e. Often volunteers to help others (parents, teachers, other children)	0.82
Number of items	5
Cronbach's alpha	0.90
Unweighted N	2,953[^]

[^]2,052 children under 3 years of age skipped this scale.

Self-Control (Child)

Children's self-control was measured by the 5-Item Self-Control sub-scale selected from the Positive Behaviour Scale (PBS; Polit, 1988) which measures children's behaviour and disposition. The five items (CB_D6a-e) were administered to primary caregivers of children aged 3-6 years (unweighted $n = 2,953$, weighted 59.5%) in Wave 1. The primary caregiver rated to what extent each statement (e.g., "waits for his/her turn in games and other activities") applies to the child, on a 5-point scale where 1 means "not at all like my child" and 5 means "totally like my child".

Factor loadings displayed in Table 11 showed that the 5 items mapped together well. This scale possessed excellent internal reliability (Cronbach's $\alpha = 0.90$). Scores of the 5 items were averaged to indicate the child's self-control ($M = 3.56$, $SD = 0.75$, range: 1-5).

Table 11. Factor Loadings for the Self-Control Scale

CB_D6. Thinking about (CHILD), please tell me how much each statement applies to (CHILD). He/She ...	Factor Loading
a. Waits for (his/her) turn in games and other activities.	0.83
b. Thinks before (he/she) acts, is not impulsive.	0.81
c. Is able to concentrate or focus on an activity	0.86
d. Sticks with an activity until it is finished	0.86
e. Is patient when (he/she) wants something	0.84
Number of items	5
Cronbach's alpha	0.90
Unweighted N	2,953[^]

[^]2,052 children under 3 years of age skipped this scale.

Parental Warmth (Child Level)

This 6-item Parental Warmth Scale was developed by Child Trends, Inc., to measure the warmth of the relationship between the child and parent. The primary caregiver is asked how often in the past month he/she showed warmth to the specific child, on a 5-point scale where 1 means “not in the past month” and 5 means “every day”.

Factor analysis results suggested that the 6 items grouped well (see Table 12). Parental warmth to the specific child was constructed as an average score of the six items on the scale (CB_F5a-f). The overall scale mean was 4.84 and the standard deviation was 0.41, with a range of 1.00 to 5.00. The internal consistency of the parental warmth scale was excellent (Cronbach’s $\alpha = 0.90$).

Table 12. Factor Loadings for the Parental Warmth Scale

CB_F5. About how often in the past month have you:	Factor Loading
a. Hugged or shown physical affection to (CHILD)?	0.76
b. Told (CHILD) that you love (him/her)?	0.78
c. Spent time with (CHILD) doing one of (his/her) favourite activities?	0.83
d. Joked or played with (CHILD)?	0.85
e. Talked with (him/her) about things (he/she) is especially interested in?	0.84
f. Praised (CHILD) when (he/she) did something you appreciated?	0.84
Number of items	6
Cronbach’s alpha	0.90
N	5,005

Parental Discipline Index (Child Level)

The 5-item Parental Discipline Index measures the frequency that the primary caregiver disciplines the child through various methods such as physical punishment, taking away privileges, scolding, and time-out. The primary caregiver rated the frequency he/she disciplined the specific child using different methods in the past month, on a 5-point scale at (CB_F7a-e) where 1 means “not in the past month” and 5 means “every day”. Factor analysis results suggested that the 5 items grouped well (see Table 13). The average score of the five items on the scale was generated to indicate the extent of parental discipline to the specific child ($M = 1.57$, $SD = 0.55$, range: 1-5). The internal consistency was below acceptable (Cronbach’s $\alpha = 0.65$).

Table 13. Factor Loadings for the Parental Discipline Index

CB_F7. About how often in the past month have you:	Factor Loading
a. Spanked (CHILD)?	0.69
b. Grounded (CHILD)?	0.62
c. Taken away TV or other privileges?	0.75
d. Had to scold or threaten your child for misbehaviour?	0.66
e. Sent (CHILD) to (his/her) room?	0.61
Number of items	5
Cronbach’s alpha	0.65
Unweighted N	5,005

References

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