POVERTY, PSYCHOSOCIAL WELL-BEING, AND SCHOOL PERFORMANCE IN RURAL CHINA

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SHORT ABSTRACT (144 WORDS)

While measures of psychosocial well-being for children and adolescents have been developed and widely used in developed country contexts, few studies of human capital acquisition in developing countries have examined the role of psychosocial well-being. Analyzing data from a survey of 2000 9-12 year-old children in rural Gansu, China, this analysis investigates links between poverty, children's psychosocial well-being, and school achievement in language and math. We measure psychosocial well-being using two scales: internalizing problems, identified by symptoms of withdrawal, anxiety, and depression, and externalizing problems, identified by behaviors including hyperactivity, aggression, and delinquency. We consider two specific questions: first, what family socioeconomic and demographic factors influence children's psychosocial well-being? Second, does children's psychosocial well-being affect performance in school? Results indicate that children from wealthier families experience significantly fewer psychosocial problems, and that having fewer psychosocial problems confers a significant educational advantage on these children.

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EXTENDED ABSTRACT

While measures of psychosocial well-being for children and adolescents have been developed and widely used in developed country contexts, few studies of human capital acquisition in developing countries have examined psychosocial well-being (Weil et al. 1999; Tannenbaum and Forehand 1994; Kenny et al. 1998; Shek and Ma 1997; Fletcher, Steinberg, and Sellers 1999; Ary et al. 1999; McLeod and Shanahan 1993; Voydanoff and Donnelly 1999; Alain 1989; Chase-Lansdale et al. 1995). Analyzing data from a survey of 2000 9-12 year-old children and families in rural Gansu, China,[1] this analysis investigates links between poverty, children's psychosocial well-being, and school performance. We consider two kinds of psychological problems: internalizing and externalizing problems (Cicchetti and Toth 1991; Noam et al. 1994). Internalizing problems are characterized by the symptoms of withdrawal, anxiety, and depression. Externalizing behaviors include hyperactivity, aggression, and delinquency. We employ scales for both internalizing and externalizing problems.[2] Children's school achievement is measured by standard mathematics and language (Chinese) tests. We consider two specific questions: first, what family socioeconomic and demographic factors influence children's psychosocial well-being? Second, does children's psychosocial well-being affect children's performance in school?

Results show that household expenditures strongly predict children's psychosocial well-being, both internalizing and externalizing problems, even in models that control for other family background factors, previous semester's grades, and possible school or community effects. Further, children's psychosocial well-being measures exert significant effects in models of school achievement that control for family socioeconomic and demographic background, prior grades, and unobserved school quality and community resource differences. Children with better psychosocial well-being perform significantly better in school.[3]

[1] See Appendix 1 for further description of the data employed for this analysis.
[2] See Appendix 2 for further description of the measures employed for this analysis and Appendix 3 for the question items used to create the internalizing and externalizing problem scales.
[3] The relationships between poverty, psychosocial well-being, and achievement will be investigated further in subsequent analyses using a structural equation modeling approach.

Overall, results from initial analyses suggest that children from wealthier families experience fewer psychosocial problems, and that having fewer psychosocial problems confers a significant educational advantage on these children. These findings are indicative of the potentially important role played by psychosocial factors in the process of educational stratification in less-developed settings, and they suggest the value of further consideration of psychological factors in educational research in these settings.

SAMPLE TABLES

TABLE 1. DESCRIPTIVE STATISTICS FOR SCHOOL ACHIEVEMENT, PSYCHOSOCIAL WELL-BEING, AND OTHER BACKGROUND CHARACTERISTICS

	Mean/Percentage	Standard Deviation	Total Number
Chinese score (100-point scale)	32.5	21.5	1029
Mathematics score (100-point scale)	38.8	25.0	970
Internalizing scale	5.8	2.2	1999
Externalizing scale	4.5	2.6	1999
Household expenditures (log)	9.2	0.5	2000
Mother's education (years)	4.1	3.5	2000
Gender	0.46	0.5	2000
Age of child (years)	11.0	1.1	1970
Books in the home	21.5	15.2	2000
Sibship structure			
Older brothers	0.3	0.5	2000
Younger brothers	0.4	0.5	2000
Older sisters	0.2	0.7	2000
Younger sisters	0.4	0.5	2000
Parents help with homework			1985
Never	14.7		292
Sometimes	49.7		987
Often	35.6		706
Previous semester's grades			
Chinese	72.5	13.2	1951
Mathematics	74.0	14.6	1957

TABLE 2. REGRESSION ANALYSIS OF PSYCHOSOCIAL WELL-BEING: INTERNALIZING AND EXTERNALIZING PROBLEMS

	Internalizing	Internalizing	Internalizing	Externalizing	Externalizing	Externalizing
Log expenditures	-0.369	-0.299	-0.321	-0.393	-0.303	-0.333
	(3.69)**	(2.98)**	(3.17)**	(3.37)**	(2.60)**	(2.83)**
Mother's education	-0.055	-0.042	-0.041	-0.034	-0.017	-0.014
	(3.69)**	(2.83)**	(2.73)**	(1.98)*	(0.96)	(0.82)
Female	-0.137	-0.049	-0.056	-0.255	-0.139	-0.142
	(1.31)	(0.47)	(0.53)	(2.09)*	(1.13)	(1.15)
Age of child	-0.308	-0.326	-0.324	-0.466	-0.496	-0.492
	(6.71)**	(7.10)**	(6.89)**	(8.69)**	(9.26)**	(9.00)**
Books in the home	-0.000	0.001	0.001	-0.003	-0.000	-0.000
	(0.09)	(0.36)	(0.34)	(0.67)	(0.11)	(0.06)
Older brothers	0.498	0.436	0.443	0.553	0.493	0.494
	(4.18)**	(3.65)**	(3.69)**	(3.97)**	(3.55)**	(3.54)**
Younger brothers	0.183	0.170	0.176	0.256	0.241	0.242
	(1.54)	(1.43)	(1.48)	(1.84)	(1.74)	(1.74)
Older sisters	0.184	0.176	0.179	0.187	0.176	0.177
	(2.30)*	(2.19)*	(2.21)*	(2.01)*	(1.88)	(1.89)
Younger sisters	0.082	0.105	0.110	0.137	0.151	0.150
	(0.76)	(0.96)	(1.01)	(1.08)	(1.20)	(1.18)
Parents help with homework[S]	0.365	0.354	0.353	0.263	0.267	0.273
	(2.43)*	(2.35)*	(2.33)*	(1.50)	(1.52)	(1.55)
Parents help with homework[O]	0.329	0.354	0.351	0.154	0.201	0.207
	(2.07)*	(2.22)*	(2.18)*	(0.83)	(1.08)	(1.11)
Previous semester's Chinese score		-0.035	-0.036		-0.045	-0.047
		(5.45)**	(5.65)**		(6.04)**	(6.31)**
Previous semester's math score		0.006	0.007		0.006	0.008
		(1.01)	(1.21)		(0.93)	(1.13)
School/village fixed effects			X			X
Constant	12.244	13.777	13.979	12.981	15.086	15.374
	(12.18)**	(13.42)**	(13.36)**	(11.06)**	(12.62)**	(12.64)**
Observations	1954	1914	1914	1954	1914	1914
R-squared	0.05	0.08	0.08	0.06	0.09	0.10

S: Sometimes; O: Often. Absolute value of t statistics in parentheses. * Significant at 5%; ** significant at 1%.

TABLE 3. REGRESSION ANALYSIS OF SCHOOL ACHIEVEMENT BY FAMILY SOCIOECONOMIC AND OTHER BACKGROUND FACTORS: LANGUAGE

	Chinese score	Chinese score	Chinese score	Chinese score
Log expenditures	4.467	3.187	2.432	2.577
	(3.53)**	(2.46)*	(1.91)	(2.03)*
Mother's education		1.100	0.924	0.875
		(5.30)**	(4.50)**	(4.24)**
Female		0.797	-0.140	-0.436
		(0.56)	(0.10)	(0.31)
Age of child		0.849	1.296	1.131
		(1.38)	(2.13)*	(1.83)
Books in the home		0.112	0.077	0.063
		(2.54)*	(1.78)	(1.46)
Older brothers		-2.787	-2.417	-2.269
		(1.72)	(1.51)	(1.42)
Younger brothers		-0.511	-0.166	0.064
		(0.32)	(0.11)	(0.04)
Older sisters		-0.656	-0.352	-0.501
		(0.62)	(0.33)	(0.47)
Younger sisters		0.861	1.062	1.133
		(0.59)	(0.73)	(0.78)
Parents help with homework[S]		-0.438	-0.666	-0.739
		(0.22)	(0.33)	(0.37)
Parents help with homework[O]		0.698	0.234	0.051
		(0.33)	(0.11)	(0.02)
Previous semester's Chinese score			0.37	0.366
			(7.32)**	(7.18)**
School/village fixed effects				X
Constant	-8.719	-12.291	-35.115	-33.695
	(0.75)	(0.93)	(2.63)**	(2.50)*
Observations	1029	1006	987	987
R-squared	0.01	0.06	0.11	0.13

S: Sometimes; O: Often. Absolute value of t statistics in parentheses. * Significant at 5%; ** significant at 1%.

TABLE 4. REGRESSION ANALYSIS OF SCHOOL ACHIEVEMENT BY FAMILY SOCIOECONOMIC AND OTHER BACKGROUND FACTORS: MATH

	Math score	Math score	Math score	Math score
Log expenditures	3.417	2.758	1.229	1.532
	(1.99)*	(1.57)	(0.70)	(0.86)
Mother's education		1.143	0.945	0.88
		(4.83)**	(4.01)**	(3.72)**
Female		0.41	0.459	0.874
		(0.24)	(0.27)	(0.51)
Age of child		1.694	1.891	1.678
		(2.22)*	(2.50)*	(2.18)*
Books in the home		-0.023	-0.044	-0.054
		(0.42)	(0.82)	(1.00)
Older brothers		-5.957	-5.262	-5.296
		(3.03)**	(2.69)**	(2.70)**
Younger brothers		-3.358	-2.762	-2.649
		(1.7)	(1.41)	(1.35)
Older sisters		-1.778	-1.514	-1.012
		(1.32)	(1.14)	(0.76)
Younger sisters		0.008	0.081	0.077
		(0.00)	(0.05)	(0.04)
Parents help with homework[s]		-3.383	-4.399	-4.232
		(1.35)	(1.76)	(1.69)
Parents help with homework[o]		-4.192	-5.129	-4.853
		(1.56)	(1.92)	(1.81)
Previous semester's Math score			0.31	0.311
			(5.52)**	(5.53)**
School/village fixed effects				X
Constant	7.38	-2.54	-11.941	-12.596
	(0.47)	(0.15)	(0.69)	(0.71)
Observations	970	948	930	930
R-squared	0.00	0.04	0.08	0.10

S: Sometimes; O: Often.
Absolute value of t statistics in parentheses.
* Significant at 5%; ** significant at 1%.

TABLE 5. REGRESSION ANALYSIS OF SCHOOL ACHIEVEMENT BY PSYCHOSOCIAL WELL-BEING: LANGUAGE BY INTERNALIZING PROBLEMS

	Chinese score	Chinese score	Chinese score	Chinese score
Internalizing problems	-1.542	-1.158	-0.753	-0.729
	(5.23)**	(3.88)**	(2.53)*	(2.46)*
Log expenditures		2.721	2.166	2.312
		(2.11)*	(1.70)	(1.82)
Mother's education		1.041	0.898	0.850
		(5.04)**	(4.38)**	(4.12)**
Female		0.542	-0.243	-0.543
		(0.38)	(0.17)	(0.39)
Age of child		0.521	1.060	0.902
		(0.84)	(1.73)	(1.44)
Books in the home		0.108	0.076	0.062
		(2.46)*	(1.76)	(1.43)
Older brothers		-2.217	-2.070	-1.934
		(1.37)	(1.29)	(1.21)
Younger brothers		-0.301	-0.020	0.206
		(0.19)	(0.01)	(0.13)
Older sisters		-0.536	-0.275	-0.413
		(0.51)	(0.26)	(0.39)
Younger sisters		0.867	1.097	1.176
		(0.60)	(0.76)	(0.82)
Parents help with homework[S]		-0.158	-0.469	-0.529
		(0.08)	(0.24)	(0.27)
Parents help with homework[O]		1.146	0.544	0.369
		(0.54)	(0.26)	(0.18)
Previous semester's Chinese score			0.345	0.341
			(6.73)**	(6.57)**
School/village fixed effects				X
Constant	41.442	2.165	-24.168	-22.925
	(22.64)**	(0.16)	(1.73)	(1.62)
Observations	1029	1006	987	987
R-squared	0.03	0.08	0.11	0.14

S: Sometimes; O: Often.
Absolute value of t statistics in parentheses.
* Significant at 5%; ** significant at 1%.

TABLE 6. REGRESSION ANALYSIS OF SCHOOL ACHIEVEMENT BY PSYCHOSOCIAL WELL-BEING: LANGUAGE BY EXTERNALIZING PROBLEMS

	Chinese score	Chinese score	Chinese score	Chinese score
Externalizing problems	-1.512	-1.257	-0.846	-0.818
	(5.89)**	(4.87)**	(3.26)**	(3.15)**
Log expenditures		2.777	2.205	2.342
		(2.16)*	(1.74)	(1.85)
Mother's education		1.058	0.913	0.865
		(5.15)**	(4.46)**	(4.21)**
Female		0.381	-0.331	-0.631
		(0.27)	(0.24)	(0.45)
Age of child		0.355	0.926	0.776
		(0.57)	(1.50)	(1.24)
Books in the home		0.101	0.072	0.058
		(2.30)*	(1.68)	(1.35)
Older brothers		-2.203	-2.049	-1.923
		(1.37)	(1.28)	(1.21)
Younger brothers		-0.341	-0.049	0.177
		(0.21)	(0.03)	(0.11)
Older sisters		-0.630	-0.344	-0.475
		(0.60)	(0.33)	(0.45)
Younger sisters		0.869	1.093	1.167
		(0.60)	(0.76)	(0.81)
Parents help with homework[S]		-0.268	-0.515	-0.583
		(0.13)	(0.26)	(0.29)
Parents help with homework[O]		0.968	0.472	0.287
		(0.46)	(0.23)	(0.14)
Previous semester's Chinese score			0.333	0.329
			(6.47)**	(6.31)**
School/village fixed effects				(
Constant	39.249	2.705	-22.626	-21.363
	(29.76)**	(0.20)	(1.64)	(1.53)
Observations	1029	1006	987	987
R-squared	0.03	0.08	0.12	0.14

S: Sometimes; O: Often.
Absolute value of t statistics in parentheses.
* Significant at 5%; ** significant at 1%.

TABLE 7. REGRESSION ANALYSIS OF SCHOOL ACHIEVEMENT BY PSYCHOSOCIAL WELL-BEING: MATH BY INTERNALIZING PROBLEMS

	Math score	Math score	Math score	Math score
Internalizing problems	-1.603	-1.139	-0.930	-0.933
	(4.29)**	(2.97)**	(2.43)*	(2.44)*
Log expenditures		2.401	1.025	1.303
		(1.37)	(0.59)	(0.74)
Mother's education		1.076	0.899	0.834
		(4.55)**	(3.81)**	(3.52)**
Female		0.355	0.448	0.874
		(0.21)	(0.26)	(0.51)
Age of child		1.309	1.570	1.365
		(1.70)	(2.05)*	(1.76)
Books in the home		-0.019	-0.041	-0.049
		(0.35)	(0.76)	(0.92)
Older brothers		-5.406	-4.917	-4.945
		(2.75)**	(2.51)*	(2.52)*
Younger brothers		-3.146	-2.652	-2.530
		(1.59)	(1.36)	(1.29)
Older sisters		-1.480	-1.304	-0.802
		(1.10)	(0.98)	(0.60)
Younger sisters		0.187	0.229	0.234
		(0.10)	(0.13)	(0.13)
Parents help with homeworks		-2.823	-3.964	-3.826
		(1.13)	(1.59)	(1.53)
Parents help with homework[o]		-3.875	-4.876	-4.624
		(1.45)	(1.83)	(1.73)
Previous semester's math score			0.291	0.293
			(5.15)**	(5.18)**
School/village fixed effects				X
Constant	48.060	10.953	-0.233	-0.793
	(20.97)**	(0.61)	(0.01)	(0.04)
Observations	970	948	930	930
R-squared	0.02	0.05	0.08	0.10

S: Sometimes; O: Often.
Absolute value of t statistics in parentheses.
* Significant at 5%; ** significant at 1%.

TABLE 8. REGRESSION ANALYSIS OF SCHOOL ACHIEVEMENT BY PSYCHOSOCIAL WELL-BEING: MATH BY EXTERNALIZING PROBLEMS

	Math score	Math score	Math score	Math score
Externalizing problems	-1.439	-1.101	-0.913	-0.859
	(4.62)**	(3.40)**	(2.83)**	(2.66)**
Log expenditures		2.245	0.919	1.200
		(1.28)	(0.53)	(0.68)
Mother's education		1.100	0.923	0.862
		(4.67)**	(3.92)**	(3.66)**
Female		0.225	0.350	0.779
		(0.13)	(0.21)	(0.46)
Age of child		1.088	1.369	1.192
		(1.40)	(1.76)	(1.51)
Books in the home		-0.018	-0.040	-0.048
		(0.33)	(0.74)	(0.90)
Older brothers		-5.263	-4.796	-4.850
		(2.68)**	(2.45)*	(2.47)*
Younger brothers		-2.914	-2.448	-2.352
		(1.48)	(1.25)	(1.20)
Older sisters		-1.382	-1.219	-0.752
		(1.03)	(0.92)	(0.57)
Younger sisters		0.291	0.310	0.302
		(0.16)	(0.17)	(0.17)
Parents help with homework[s]		-2.972	-4.079	-3.943
		(1.19)	(1.64)	(1.58)
Parents help with homework[o]		-4.091	-5.060	-4.802
		(1.53)	(1.90)	(1.80)
Previous semester's math score			0.285	0.288
			(5.04)**	(5.09)**
School/village fixed effects				(
Constant	45.279	13.110	2.000	0.768
	(28.22)**	(0.73)	(0.11)	(0.04)
Observations	970	948	930	930
R-squared	0.02	0.06	0.08	0.10

S: Sometimes; O: Often.
Absolute value of t statistics in parentheses.
* Significant at 5%; ** significant at 1%.

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APPENDIX 1. DATA AND METHODS

This section describes the data, study site, and methods employed in the analysis.

Data

The data used in this study come from the Gansu Survey of Children and Families (GSCF). This survey, conducted in the summer of 2000, is a survey of 2,000 children aged 9-12 and their families in rural areas of 20 counties in Gansu Province. The sampling strategy involved a multi-stage, cluster design with random selection procedures employed at each stage. At the final stage, children were sampled from lists of all 9-12 year-old children in selected villages, enabling us to avoid concerns about selection bias that afflict school-based samples. Seven sets of questionnaires were designed for the sample children, their mothers, their family, target teachers, teachers, school principal and village leaders.

Study Site

Gansu, the study site, exhibits conditions that are common in the interior part of China and elsewhere in the rural developing world. While rural industries have emerged as in other parts of China with the economic liberalization dating from the early 1980s, rural residents are predominantly employed in subsistence farming or animal husbandry. Gansu's socioeconomic profile resembles that of other interior provinces: relative to the nation as a whole, Gansu exhibits high rates of illiteracy, prevalent poverty, and lackluster economic growth. Funds available for educational investments are also limited. As one of China's poorest provinces, Gansu provides a useful case study for investigating factors affecting school outcomes in a less developed setting.

Models

The models in this study all employ linear regression estimates. Internalizing and externalizing problem scales are used to represent psychosocial well-being, and each is regressed on such factors as family socioeconomic background, children's characteristics, sibship composition, and family social and cultural resources, and previous semester's grades (see Table 2). Language and mathematics test scores from a standard test are subsequently regressed on household background factors (see Table 3 and 4), and then on the psychosocial well-being indicators with the same set of variables mentioned above (see Table 5 to Table 8). With this process, the role of psychosocial health in relation to other factors can be clearly demonstrated.

Another issue that we deal with is the potential bias associated with unobserved school and community factors. It is reasonable to suspect that some of the observed family effects on school achievement could be biased without attention to aspects of schools, or communities, that might be correlated with some of the analytic variables. For example, families with high levels of wealth and human capital may be more likely to live in communities with schools that have better material and human resources. While school effects are not the focus of this paper, we do need to address these kinds of problems, in order to be confident of our results. For this reason, we re-estimate all models with school fixed-effects. Because the majority of children are enrolled in elementary school, and because there is generally one primary school per village, this strategy also addresses cross-village differences.

APPENDIX 2. MEASURES

In this section, we describe variables employed in the analysis, beginning with the dependent variable, school achievement.

School Achievement

Children's school achievement was measured by a standard language (Chinese) and Mathematics test. The tests were designed by experts at the Gansu Educational Commission to cover the range of official primary school curriculum. On a random basis, half of the children completed the language test, and the other half, the math test. To ensure that the tests assessed an appropriate range of knowledge given the child's education, separate exams were given to children in grades 3 and below and to children in grades 4 and above. The tests were scored from zero to 100. Table 1 shows that mean scores on Chinese and math for children in these tests are 32.5 and 38.8, respectively.

Psychosocial Well-Being

In this study, children's psychosocial problems were indexed by internalizing and externalizing problems (Cicchetti and Toth, 1991; Noam et al. 1994). Internalizing problems are characterized by the symptoms of withdrawal, anxiety, and depression. Externalizing behaviors include hyperactivity, aggression, and delinquency. Although these constructs were originally used in the area of childhood psychopathology, researchers also use them as indicators of children's adjustment (e.g., Buysse 1997). The items for measuring children's psychosocial adjustment were adapted from the internalizing and externalizing scales in the Child Behavior Checklist – CBCL and Youth-Self Report (YSR) (Achenbach 1991). This study employed a subset of the items in Achenbach's YSR instrument, due to concerns about the time burden for respondent children. Following field pretests and focus group sessions, a total of 44 items from Achenbach's YSR were kept in the child questionnaire and the mother questionnaire for measuring children's problems. Each item was rated in a 4-point scale, as "strongly disagree", "disagree", "agree", or "strongly agree".

In this study, the indicator for the internalizing problem construct is a summative scale from eighteen items reported by the children. These items cover symptoms of unhappiness, feelings of being unloved, mood swings, feelings of worthlessness, and feelings of being withdrawn. Higher scores on the internalizing problem scale indicate that the child expects an unhappy future, is pessimistic, feels unhappy, inferior, lonely, or moody, is unable to pay attention, and/or is easily tired. This summative scale had high internal consistency, with a Cronbach's alpha of .82.

Similar to the internalizing problems, the indicator of children's externalizing problems was constructed by summing up the scores from the scales that were used to assess children's acting out, truancy, fighting, and delinquency. Principal component analysis indicates that the children's externalizing problem scale is intemally consistent, with a Cronbach's alpha of .89 (see Appendix 3 for the question items used to create internalizing and externalizing problem scales).

Household Expenditures

Our primary measure of household economic status, household expenditures in the previous year, was constructed from summing up the major expenditures in the household. These include school-related expenditures, medical expenditures, food expenditures, and other expenditures such as rent for land, daily consumption and service fee, expenditures on building and renovating houses, and so on. The mean value for logged household expenditures in our sample is 9.2 (see Table 1).[4]

Mother's Education

Parental human capital, or parental education, is typically an essential element of sociological models of school achievement. In less developed settings, maternal education is often thought to be more relevant for children's upbringing than paternal education. In this study, we also suggest that mother's

[4] We chose to employ household expenditures, rather than income, as our measure of economic status. In research in developing societies, expenditures are usually considered to be a better measure of both current and long-term welfare. As families tend to smooth consumption over time, household expenditures usually vary less from year to year than incomes (Park and Wang 2001: 393).

education may be directly related to children's psychosocial health as well as to children's school achievement. Table 1 shows that the sample children's mothers' educational attainments were low, with an average of 4.1 years of schooling.

Children's Gender and Age

We also control for gender and age. In our sample of 2,000 children, girls account for 46.1 percent of the children. The mean age of the children is 11, and the sample children's age ranges from 9 to 12 years old (see Table 1).

Sibship Structure

Sibship structure often has significant implications for children's schooling. Particularly in areas where son preference, poverty, or both prevail, competition among siblings for resources may exist. Thus, the presence of siblings may detract from school performance. Among the 2000 children in our analytic sample, the mean numbers of siblings by birth order and sex vary from 0.2 to 0.4 (see Table 1) .

Cultural Resources in the Home

Cultural resources in the home are an important element of the resources that support children's schooling. Cultural resources are often correlated with economic circumstances and human capital of the household, but may independently affect children's schooling. Here, as a measure of the cultural environment in the home, we control for the number of books a household bought in the past year, including textbooks and other books. In GSCF sample households, the mean number is 21.5, but the range is large, from 0 to 99 ("Books in the home" in Table 1).

Social Resources in the Home

Another indicator of home learning environment is social capital in the home. An important measure of social capital in the home is access to parental help with homework (see Coleman 1988).[5] Like the cultural environment in the home, social resources are likely to be linked to family human capital and economic resources, but measure a different dimension of the support that children receive in the home. We measure social resources in the home as whether parents help children with homework. In rural Gansu, 35.6 percent of mothers report that parents often help with their children's homework, 49.7 percent report that parents sometimes help, and 14.7 percent report that parents never help (see Table 1).

Previous Semester's Grades

In this survey, other than children's school achievement measured by a standard language (Chinese) and Mathematics test we also collected language (Chinese) and math test scores from the previous semester provided by sample children's homeroom teachers. These grades are used as control for children's feedback from school, which are considered to affect their current psychosocial health status. The scores were also measured on a 100-point scale, with a score of 60 representing a passing grade. The average language and math scores of the sample children are 72.5 and 74.0, respectively (see Table 1). These tests have the disadvantage of not being standard in content across the province, but they are good measure of feedback from school in this study.

[5] Indicators based on family networks are also commonly used as measures of family social capital. We chose not to employ these measures here, as other analyses have suggested that commonly used indicators of embeddedness into friendship networks or communities do not transfer well to rural China (Hannum and Park 2002).

APPENDIX 3. SUMMARY OF TOPICS OF PSYCHOSOCIAL WELL-BEING QUESTIONS

Each item below is rated in a 4-point scale, as “strongly disagree", "disagree”, “agree”, or “strongly agree”.

1. Questions for constructing internalizing problem scale:
   Secretive,
   Cannot concentrate,
   Cannot get mind off strange thoughts,
   Easily gets flushed,
   Too dependent,
   Indifferent to others,
   Shy,
   Be teased,
   Lacks guilt,
   Tries to get attention,
   Suspicious,
   Moody,
   Feels worthless,
   Stays alone,
   Nervous,
   Overtired, lack energy,
   Stays quietly,
   Things to be worried about.

2. Questions for constructing externalizing problem scale:
   Argues a lot,
   Easily loses temper,
   Brags,
   Shows off,
   Steals,
   Destroys things,
   Violates school rules,
   Jealous,
   Not listen to others,
   Tries to get attention,
   Suspicious,
   Acts without thinking,
   Often says nasty things,
   Teases a lot,
   Lies or cheats,
   Hot temper,
   Very stubborn, and does not listen to others,
   Threatens others.