Social Skills Development of Orphaned and Impoverished Youth of Yi Ethnic Minority in Rural China

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Backgrounds

➢ The ethnic minority Yi, which resides in the Southern Sichuan area of rural China, is one of the most vulnerable population.

- 1 in 4 of the total population in Buto County, 94% of which are Yi people, are living in extreme poverty with average annual income lower than 100 USD (Jiao, 2009).

- 1 out of 10 children are orphaned (Yang, et al., 2007)
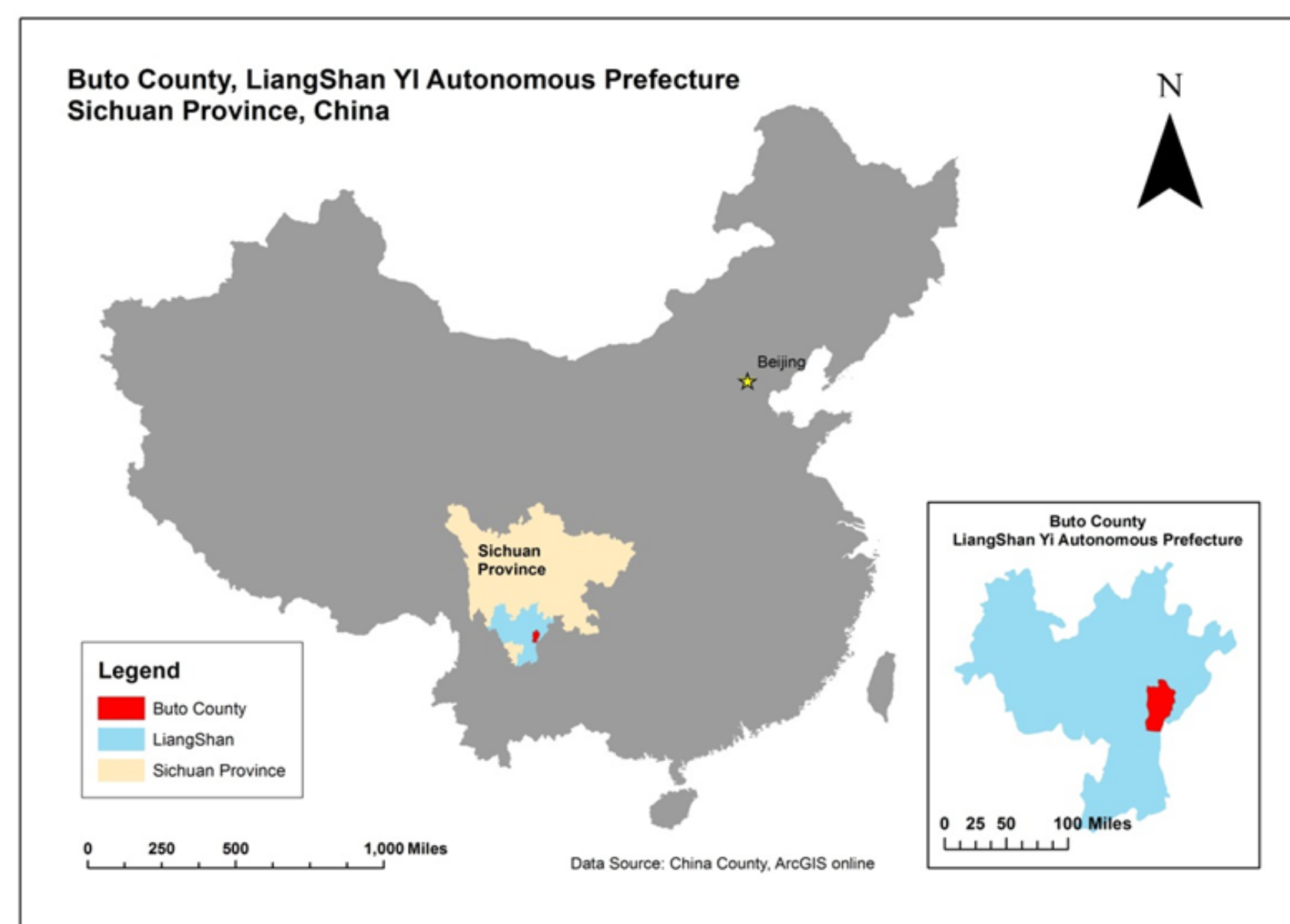
➢ According to the Theory of Developmental Trauma, experiences of chronic poverty and parental loss, is likely to affect the social development of children, is which then associated with their poor educational outcomes.

➢ A rural China program, STARTLET, was launched to promote the positive social development of these Yi orphaned children by providing them with free schooling and boarding at the local schools in the Buto area.

Research Questions

➢ How do the social skills of Yi youths change after their enrollment in STARTLET?

➢ Do the social skills developments of Yi youth vary according to their characteristics, namely, trauma level, verbal ability, and gender, when they were first enrolled in the program?

Methods

➢ Data collected at the 1st, 10th , 18th and 31st months after enrollment into the program from 8 different participating schools.

➢ N= 408 Yi youths (male = 149; aged 6 to 17).

➢ Outcome variable: Social skills (SS), measured by a self designed teacher report scale (5 items; α >0.8 for all 4 data waves).

➢ Time-varying predictor : Number of months after enrollment .

➢ Time-invariant predictors:
- Trauma levels, (Trauma) measured by a self designed teacher report scale according to DSM-V criteria for Developmental Trauma Disorder (7-items; α=0.8), transformed into 3 levels categorical variable (Low vs. Medium vs. High);
- Verbal ability (VA), measured by a self designed teacher report scale (5-items; α=0.9);
- Gender.

➢ Control variable: Age

➢ Analysis: Mixed Method Longitudinal Modeling (R Studio).
- Fixed effects: Months, Trauma levels, Verbal Ability, Gender and Age.
- Random effects: Intercept (β_{0j}) and Slope(β_{1j}).

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Results

Research Question 1:
How do the social skills of Yi youth change after their enrollment in STARTLET?

➢ Significant effect of months enrolled in program on social skills .

➢ The rate of change was fastest in the first 10 months; then it started to level off until the 27th month; after that, it started to increase at a steeper rate again.


Changes in Social Skills
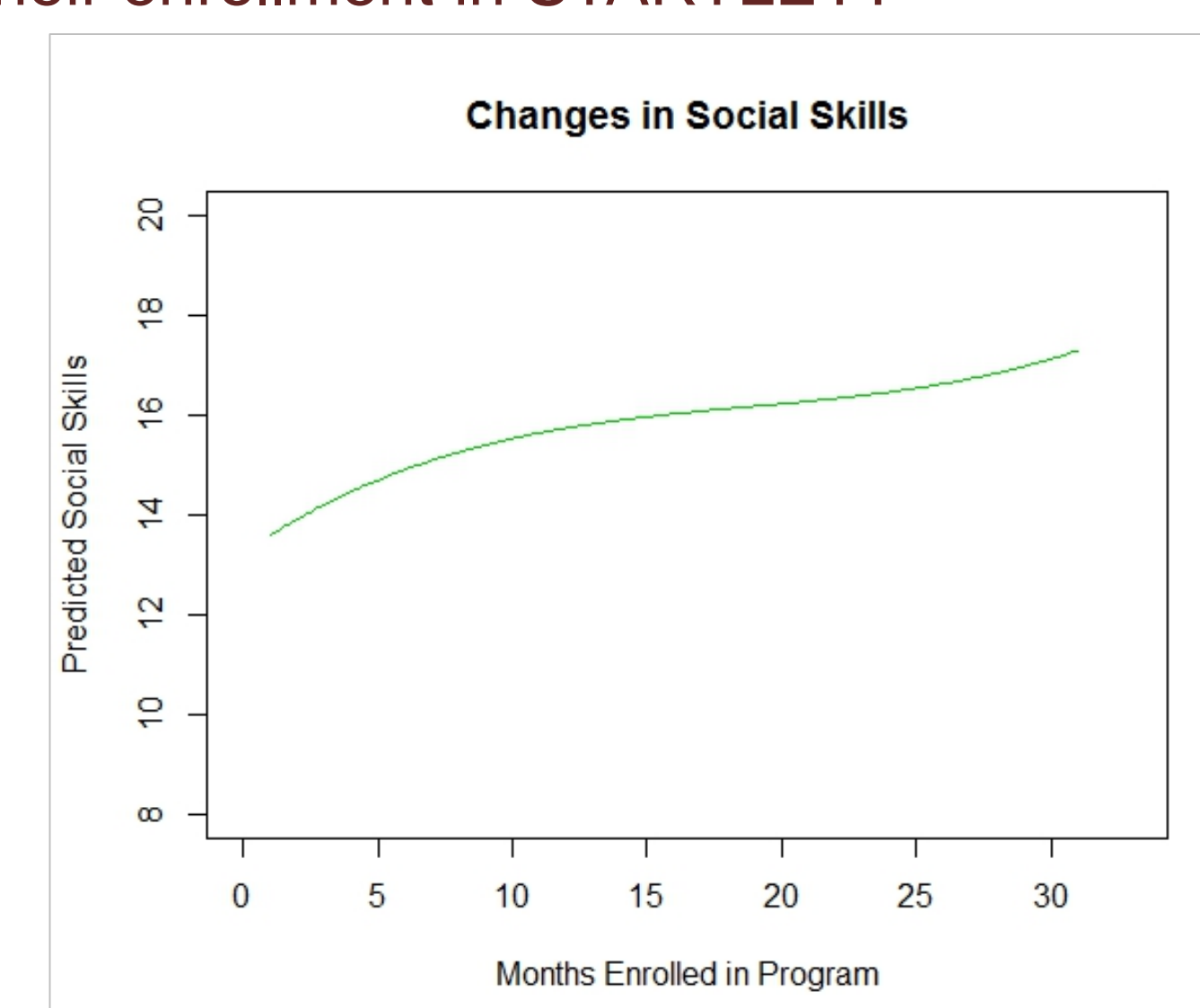
Research Question 2:
Do the social skills developments of Yi youth vary according to their characteristics, namely, trauma level, verbal ability, and gender?
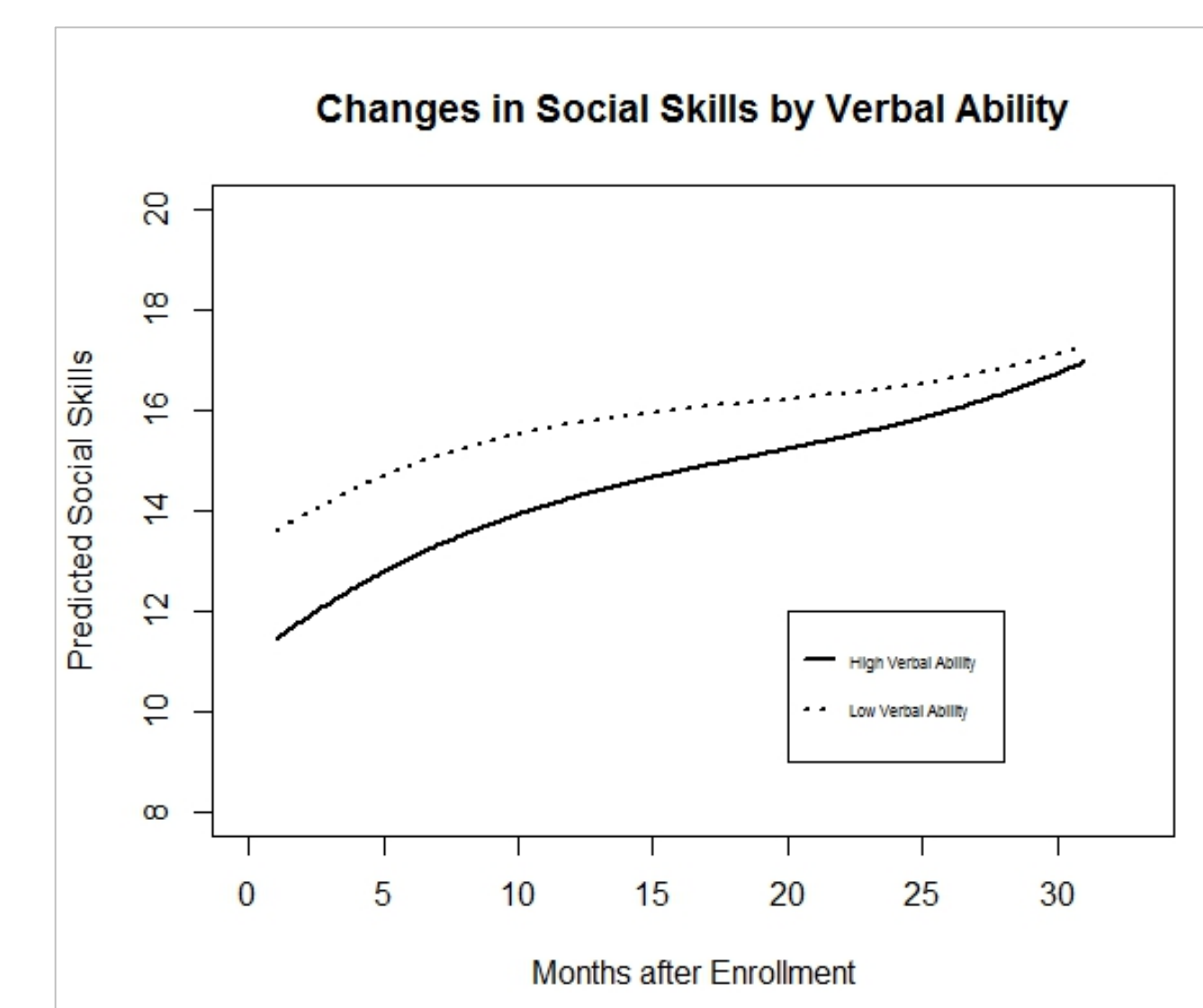
Months x Trauma Level

➢ Significant interaction effect of trauma levels and months on social skills.

➢ The high trauma group experienced a faster rate of improvement in social skills, and eventually surpassed the medium trauma group.

➢ The medium and low level trauma group form two parallel developmental trajectories. suggesting that the interaction effect is not apparent.

Changes in Social Skills by Trauma Levels
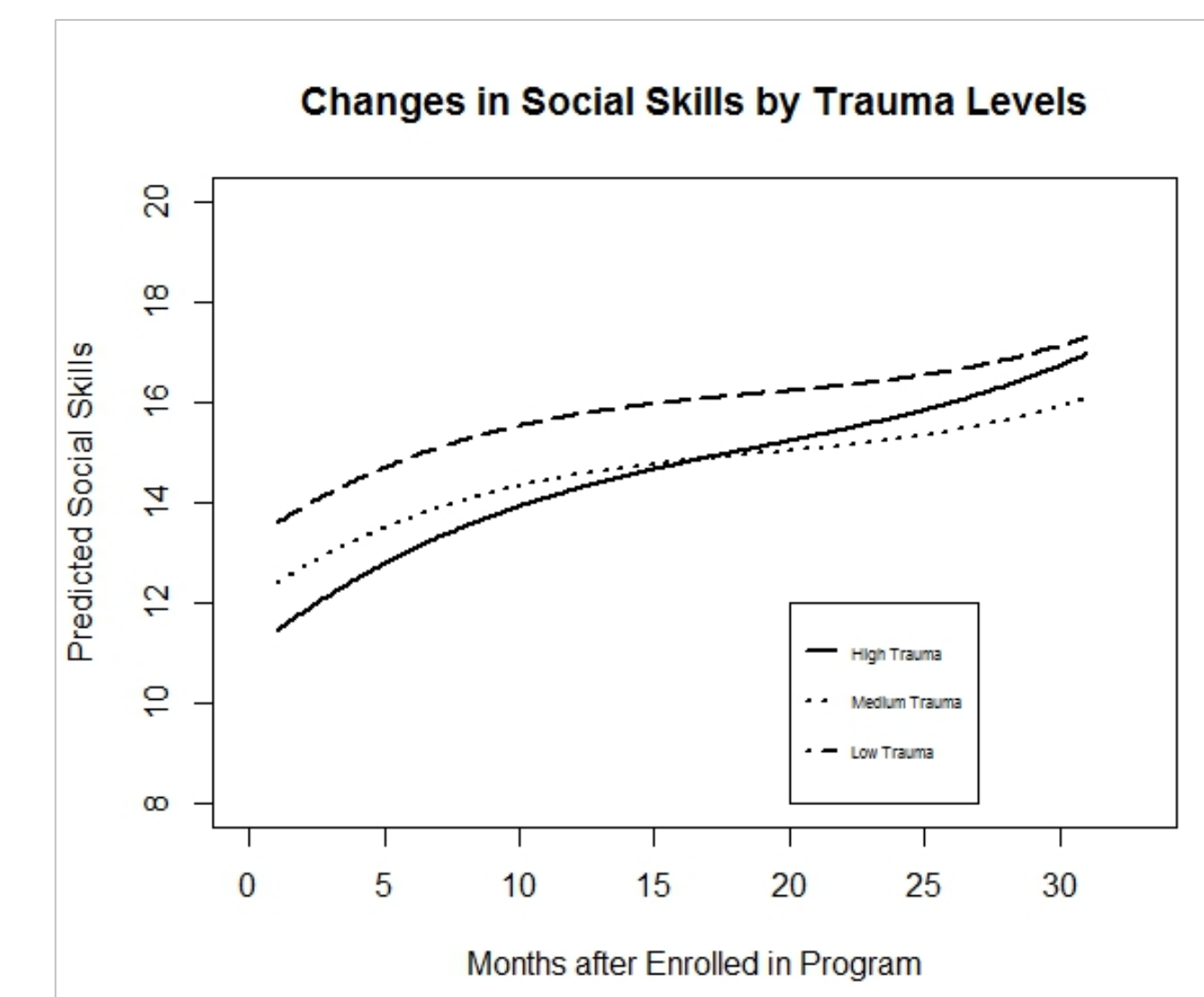
Months x Verbal Ability

➢ Significant interaction effect of trauma levels and months on social skills.

➢ The low verbal ability group experienced a faster rate of improvement, and eventually catches up with the high verbal ability group.

Changes in Social Skills by Verbal Ability

References

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Yang, P.J., Zhang, X.H., Tsui, X.L., Ma, Y.Q. & Jin, T.X. (2007). . *Liángshān Yízú Zlzhìzhōu Bùtuō Xiàn 6 gè Xiǎngzhèn de Zhì Gū Ertóng Diàochá Fēnxī Bàogào.* [A Report on the Orphans of Six Towns from Buto County in LiangShang Yi Autonmous Prefecture].Retrieved from the website of LiangShan Yi Empowerment Center. http://www.lsyzdcwc.ngo.cn/?action-viewnews-itemid-190

Acknowledgements

Mathematical Expression of Final Model (Table 1):

Level 1 (intra-individual):
$$SS_{ij} = \beta_{0j} + \beta_{1j}(months) + \beta_{2j}(months^2) + \beta_{3j}(months^3) + r_{ij}$$

Level 2 (inter-Individual):
$$\beta_{0j} = \gamma_{00} + \gamma_{01}(Trauma) + \gamma_{02}(VA) + \gamma_{03}(Gender) + \gamma_{04}(Age) + u_{0j}$$
$$\beta_{1j} = \gamma_{010} + \gamma_{11}(Trauma) + \gamma_{12}(VA) + \gamma_{13}(Gender) + u_{1j}$$
$$\beta_{2j} = \gamma_{020}$$
$$\beta_{3j} = \gamma_{030}$$

Table 1: Multilevel Model Estimates of Effects of Months Enrolled in Program, Trauma Levels, Verbal Ability and Gender on Social Skills

	Unconditional linear growth Model (Model 1)			Main Effects (Model 2)			Main and Interaction Effects (Final Model)		
Fixed Effects	b	S.E.	t	b	S.E.	t	b	S.E.	t
Main effects									
Intercept	16.50	0.21	78.96*	15.62	0.46	34.23*	13.23	0.85	15.56*
Months	0.32	0.08	4.16*	0.33	0.07	4.43*	0.36	0.08	4.44*
Months²	-0.02	0.01	-2.54*	-0.02	0.07	-2.98*	-0.02	0.01	-2.80*
Months³	0.0003	0.00	2.49*	0.0003	0.00	2.90*	0.0003	0.00	2.72*
Trauma (Medium)				-0.50	0.34	-1.47	-1.20	0.50	-2.40*
Trauma (High)				-1.41	0.36	-3.91*	-2.23	0.53	-4.17*
Verbal Ability				0.11	0.03	3.76*	0.22	0.22	5.11*
Gender (1=Female)				0.24	0.21	1.13	-0.15	-0.15	-0.46
Age (Age -6)				0.17	0.07	2.46*	0.30	0.30	4.00*
Interaction effects									
Months									
Trauma (Medium)							0.05	0.03	1.98*
Trauma (High)							0.06	0.03	2.19*
Verbal Ability							-0.01	0.00	-3.66*
Gender							0.03	0.02	1.84
	σ²	S.D.		σ²	S.D.		σ²	S.D.	
Random Effects									
Intercept (Individual)	2.09	1.45		3.19	1.77		2.98	1.73	
Slope (Individual on Months)	9.14	3.02		0.006	0.08		0.005	0.07	
Residual	8.21	2.87		8.26	2.87		8.18	2.86	
Model Fit	-2LL			-2LL			-2LL		
	-3933			-3772			-3757		
Model Comparison	χ²	df							
Model 1 vs. Model 2	329.90*	7							
Model 2 vs. Model 3	29.48*	4							

*p<0.05

Discussions

➢ Months enrolled in STARLET is found to be associated with improvement in social skills; children with high trauma and low verbal ability show the highest rates of improvements overtime.

➢ The use of mixed effects modeling allows me to handle missing and unbalanced data.

➢ A control comparison group is needed in future intervention research to conclude the effectiveness of schooling for Yi children.

➢ Findings offer information on the implications on the potential benefits of rural education programs in China for other non-profit organizations.

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