

Adversity in Post-Earthquake Nepal: Examining the relationship between cumulative adversity and child development

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Background



What is Adversity?

NEGLECT

- Emotional
- Physical

SHOCKS

- Earthquake
- Landslide
- Flood
- Fire

ABUSE

- Psychological
- Physical
- Sexual

HOUSEHOLD DYSFUNCTION

- Alcoholism or drug use in home
- Loss of biological parents before the age of 18
- Depression or mental illness in home
- Mother treated with violence
- Imprisoned household member

FEAR

LOW SOCIO-ECONOMIC STATUS

- Poverty
- Low parental education



Adversity Changes Brain Architecture

A brain that has undergone severe prolonged adversity has fewer connections than a normal brain.

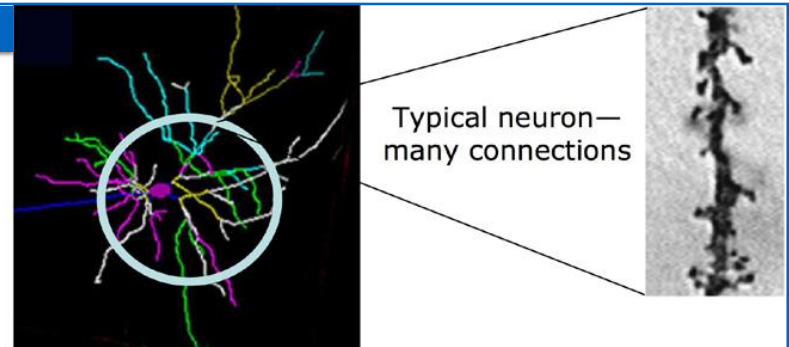
Prefrontal Cortex and Hippocampus

NORMAL BRAIN

POSITIVE
EXPERIENCES



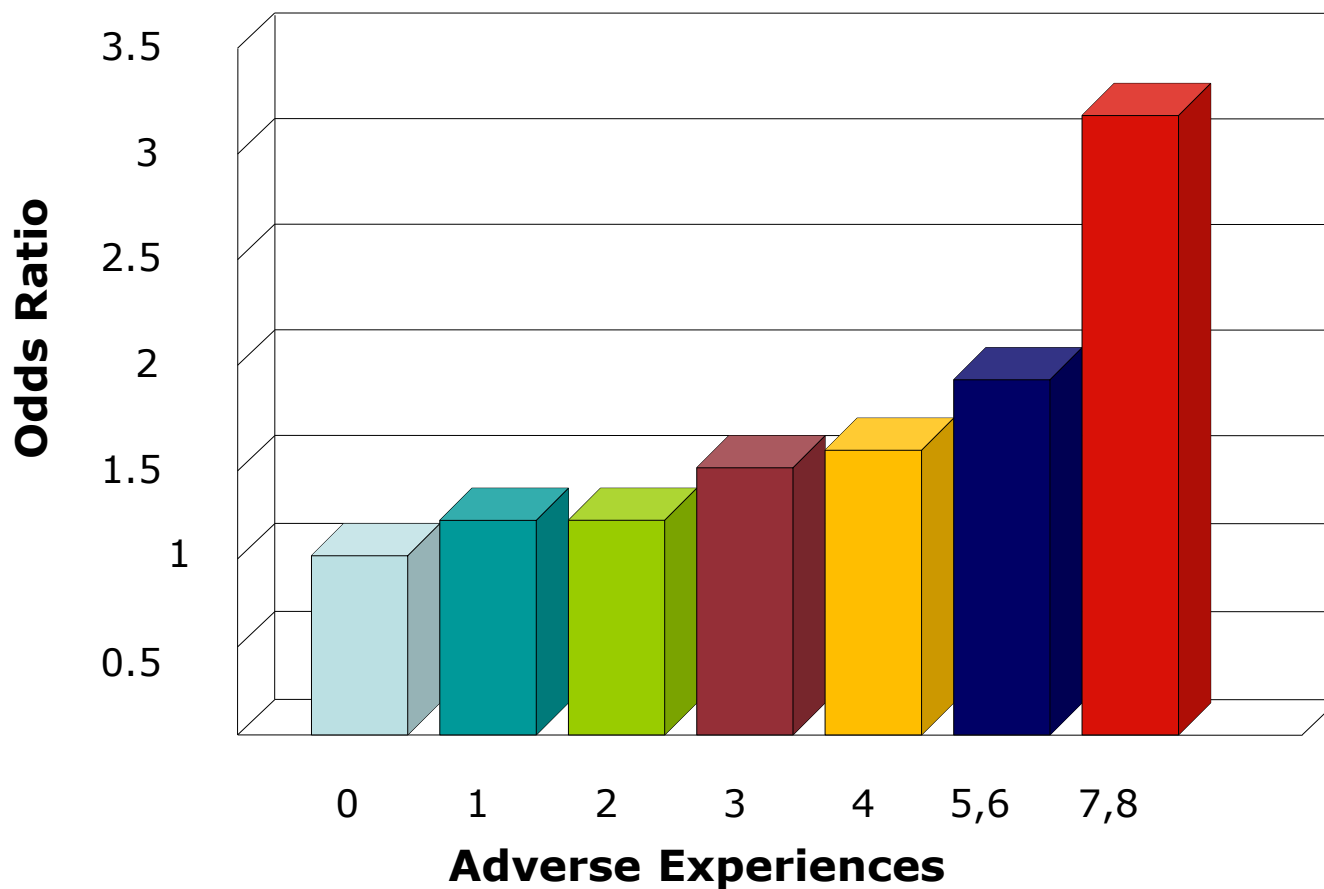
NEGATIVE
EXPERIENCES



Typical neuron—
many connections

Source: Radley et al. 2004; Bock et al. 2005

Adversity in Early Childhood Increase the Likelihood of Heart Disease in Adulthood



Source: Dong, et al. (2004)





Our Research



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Hypothesis & Research Questions

HYPOTHESIS

- Children experiencing more adverse factors have lower child development outcomes.

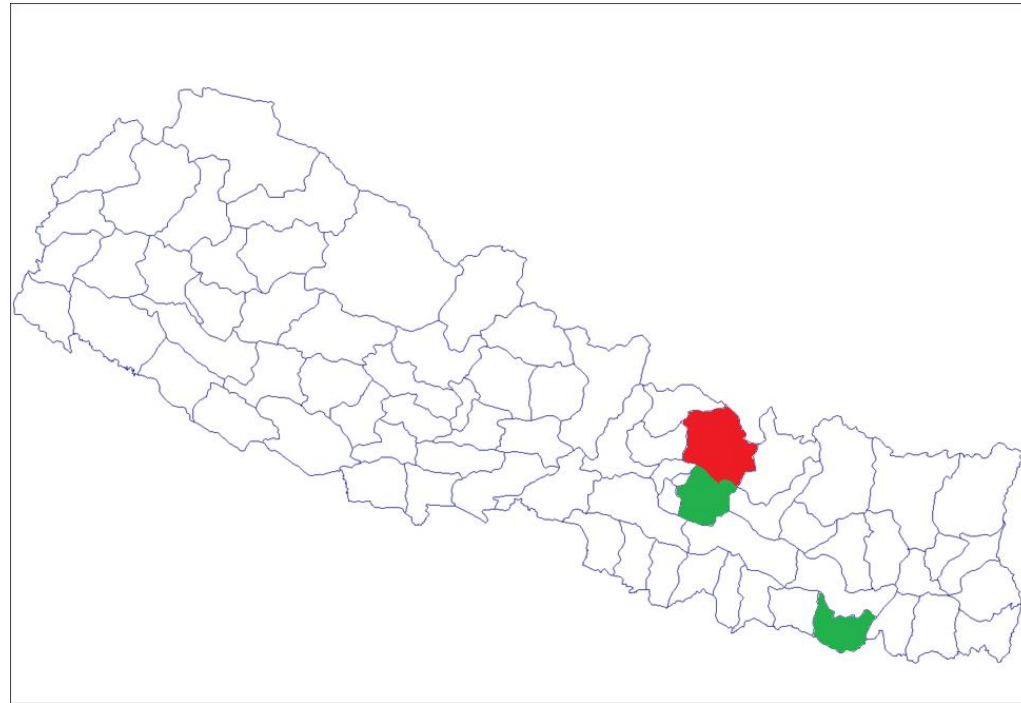
RESEARCH QUESTIONS

1. What **adverse factors** are caregivers and young children (0-6 years) experiencing in Nepal?
2. What is the relationship between each **adverse factors and child development outcomes?**
3. What is the relationship between **cumulative adversity** and child development outcomes?



Design & Sample

- Kavre & Saptari (n=748) with 3-5 year-old children using Save the Children's **IDELA** direct child assessment
- Sindhupalchowk (n=363) with caregivers of 0-3 year-old children using Harvard's **CREDI**
- Caregivers asked about exposure to domestic violence, depression, alcoholism, displacement, etc.
- CREDI group tool was modified to allow respondents to rate the impact of the adversity as “mild”, “moderate”, or “severe”



Prevalence of Adverse Factors (5% and more) 0-3 Age Group (Sindhupalchowk)

Adversity factor	Prevalence
Child hit, shaken, or yelled at	48%
Child left alone or in care of child	37%
Caregiver depression	30%
Serious child illness/injury	29%
Spouse intoxicated	22%
Lack of affection to the child	18%
Loss of livestock	12%
Couldn't eat desired food	9%
Couldn't feed child desired food	8%
Caregiver hit or insulted	6%
Serious caregiver illness/injury	6%

Note: Continuous variables (e.g. lack of affection) were dichotomized for this table but are considered continuous for the adversity index.



Adversity and Child Development Outcomes

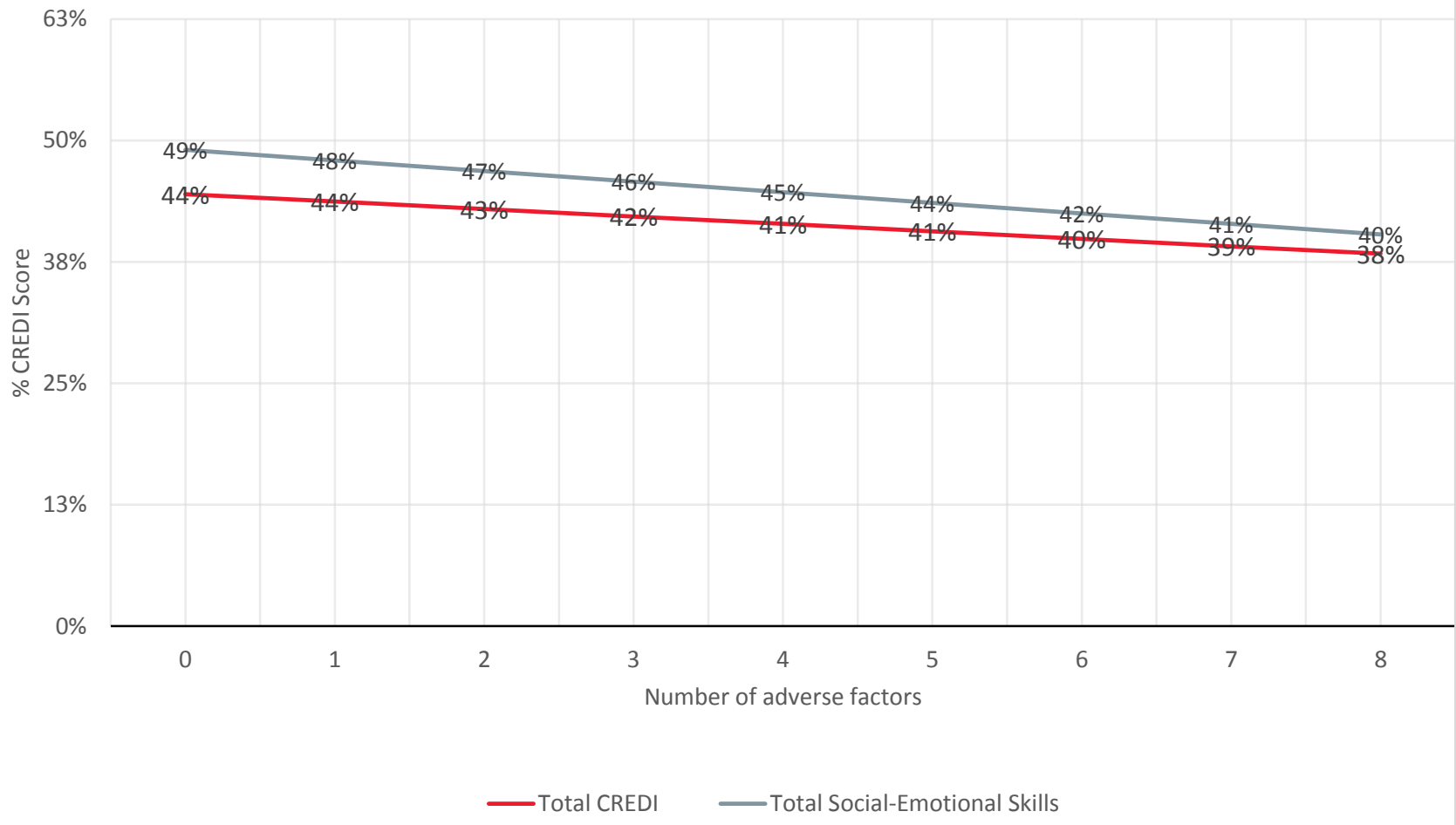
0-3 Age Group

Outcome	Significant negative relationships
Overall development (Total CREDI)	Caregiver depressed, can't feed child desired foods, go to sleep hungry
Cognitive	Caregiver depressed, child is left alone or in care of another child, caregiver hit or insulted, loss of employment
Social-Emotional Development	Caregiver depressed, can't feed child desired foods, child is hit, shaken or yelled at, death of family member, child illness, caregiver illness, go to sleep hungry
Motor Development	Caregiver depressed, parent in prison, child is hit or shaken



Cumulative Adversity and Child Development Outcomes

A greater number of adverse factors is associated with lower developmental outcomes



Prevalence of Adverse Factors 3-5 Age Group (Saptari and Kavre)

Adversity factor	Overall
Earthquake	90%
Child is hit or yelled at	68%
Child left alone or in care of child	57%
Child was ill	44%
Caregiver depression	42%
Caregiver couldn't eat desired food	42%
Lack of affection	32%
Parent in prison	31%
Fire	31%
Couldn't feed child desired food	31%
Caregiver illness	30%
Loss of livestock	27%
Displacement	26%
Loss of employment	23%
Spouse drunk	22%
Caregiver hit or yelled at	20%
Flood	17%
Conflict	15%
Child labor	12%
Landslide	9%



Adversity and Child Development Outcomes

3-5 Age Group

Outcome	Significant negative relationships
Total IDELA	None.
Motor Development	Caregiver yells at the child
Early Literacy	Caregiver can't eat desired food, Can't feed child desired foods
Early Numeracy	Caregiver illness, Child illness
Social Emotional Development	Caregiver yells at the child, Caregiver illness, Child illness
Executive Function	Caregiver illness, Child illness, Caregiver insulted and abused
Approaches to Learning	Loss of employment, Parent in prison, Caregiver can't eat desired food





Implications for addressing adversity



Key Ingredients to Addressing Adversity



EARLY STIMULATION

- Talking to young children from birth onwards
- Playing with young children

RESPONSIVE CARE & SAFETY

- Being responsive to young children's needs
- Expressing towards young children
- Calming young children
- Refraining from abuse
- Refraining from neglect



Prevalence of Caregiver Support Factors & Stimulating Activities 0-3 Age Group

Caregiver Support Factors	Mean
Caregiver belongs to women's group	42%
Caregiver average number of people who can speak with for help	2.61
Caregiver has received remittance in the last 3 months	19%
Caregiver has attended a mother's group meeting in the last 3 months	30%
Caregiver has been visited by Female Community Health Volunteer	57%

Stimulating Activities	Any Caregiver	Mother	Father
Talk with child	81%	77%	38%
Tell story to child	12%	11%	3%
Play with child	60%	56%	18%
Play with toys with the child	59%	53%	18%
Play with child while feeding	72%	69%	17%
Sing to child	29%	26%	7%
Show picture book to child	22%	21%	6%
Average total of activities	3.36	3.11	1.08



Support Factors & Stimulating Activities and Child Development Outcomes

0-3 Age Group

Outcome	Positive relationships: Caregiver support	Positive relationships: Home engagement
Overall development (Total CREDI)	Number of people caregiver can speak with for help, Caregiver belongs to women's group	Stimulating activities (any CG) Stimulating activities (mother)
Cognitive	Number of people caregiver can speak with for help, Caregiver belongs to women's group	Stimulating activities (any CG) Stimulating activities (mother)
Social-Emotional Development	Number of people caregiver can speak with for help, FCHV has visited	Stimulating activities (any CG) Stimulating activities (mother)
Motor Development	Number of people caregiver can speak with for help, Caregiver belongs to women's group, FCHV has visited	Stimulating activities (any CG) Stimulating activities (mother)

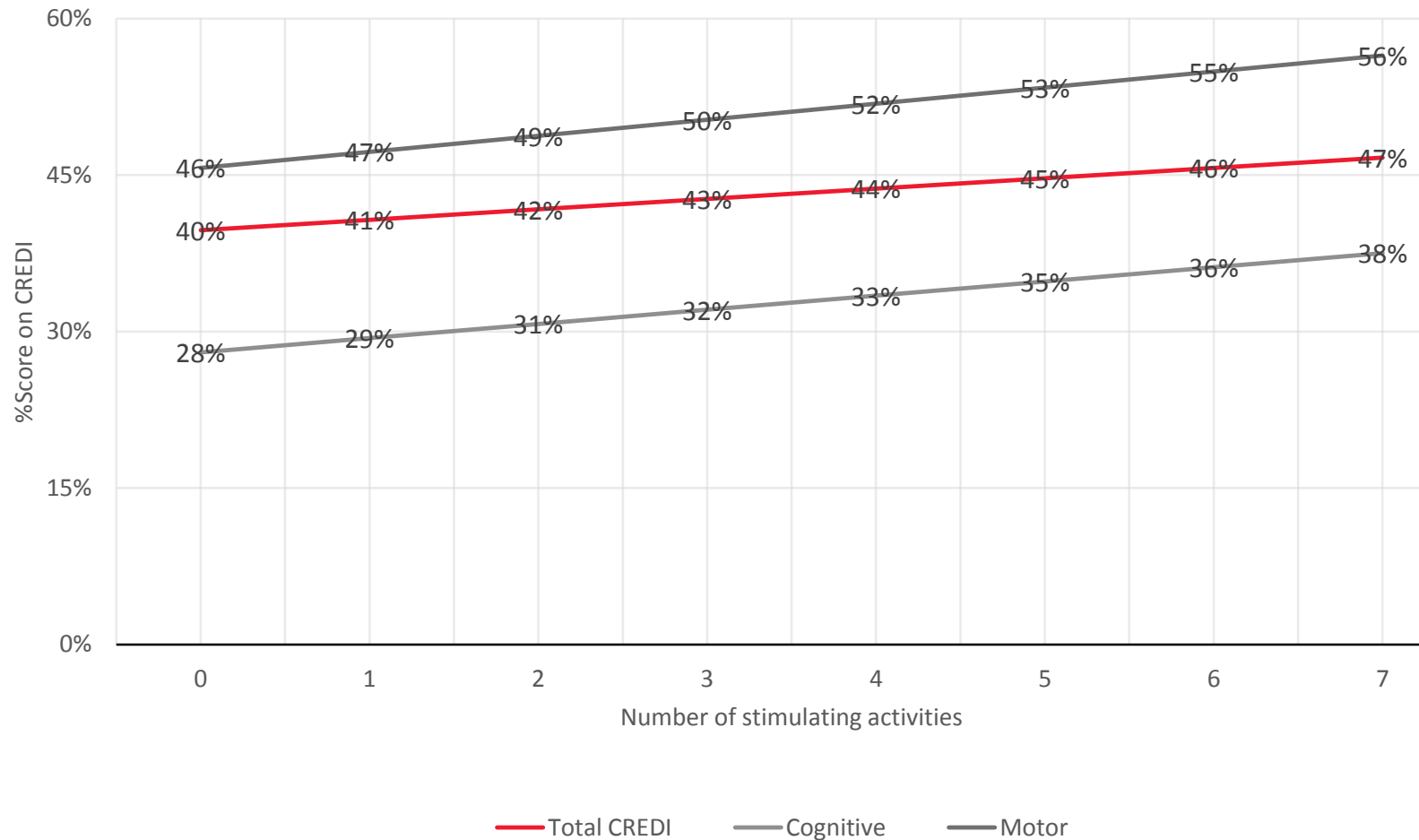
Significant relationships are noted after controlling for age, home learning environment, and, socio-economic status.



Programmatic Implications

0-3 Age Group

A greater number of stimulating activities is associated with better developmental outcomes



Prevalence of Protective Factors

3-5 Age Group

Caregiver Support Factors	Overall
Greater than 1:2 ratio of adults to children in the home	94%
Received remittance within 3 months	41%
Member of a support groups	40%
Clinic accessible nearby	75%

Stimulating Activities	Any Caregiver	Mother	Father
Reads to child	70%	41%	12%
Tells stories to child	68%	48%	8%
Sings to child	64%	48%	7%
Goes out with child	66%	52%	9%
Teaches child numbers	57%	35%	11%
Plays with child	56%	36%	8%
Teaches child letters	55%	35%	8%
Teaches child new things	50%	32%	8%
Draws with child	47%	29%	7%
Average total number	5.32	3.55	0.80

Support Factors & Stimulating Activities and Child Development Outcomes

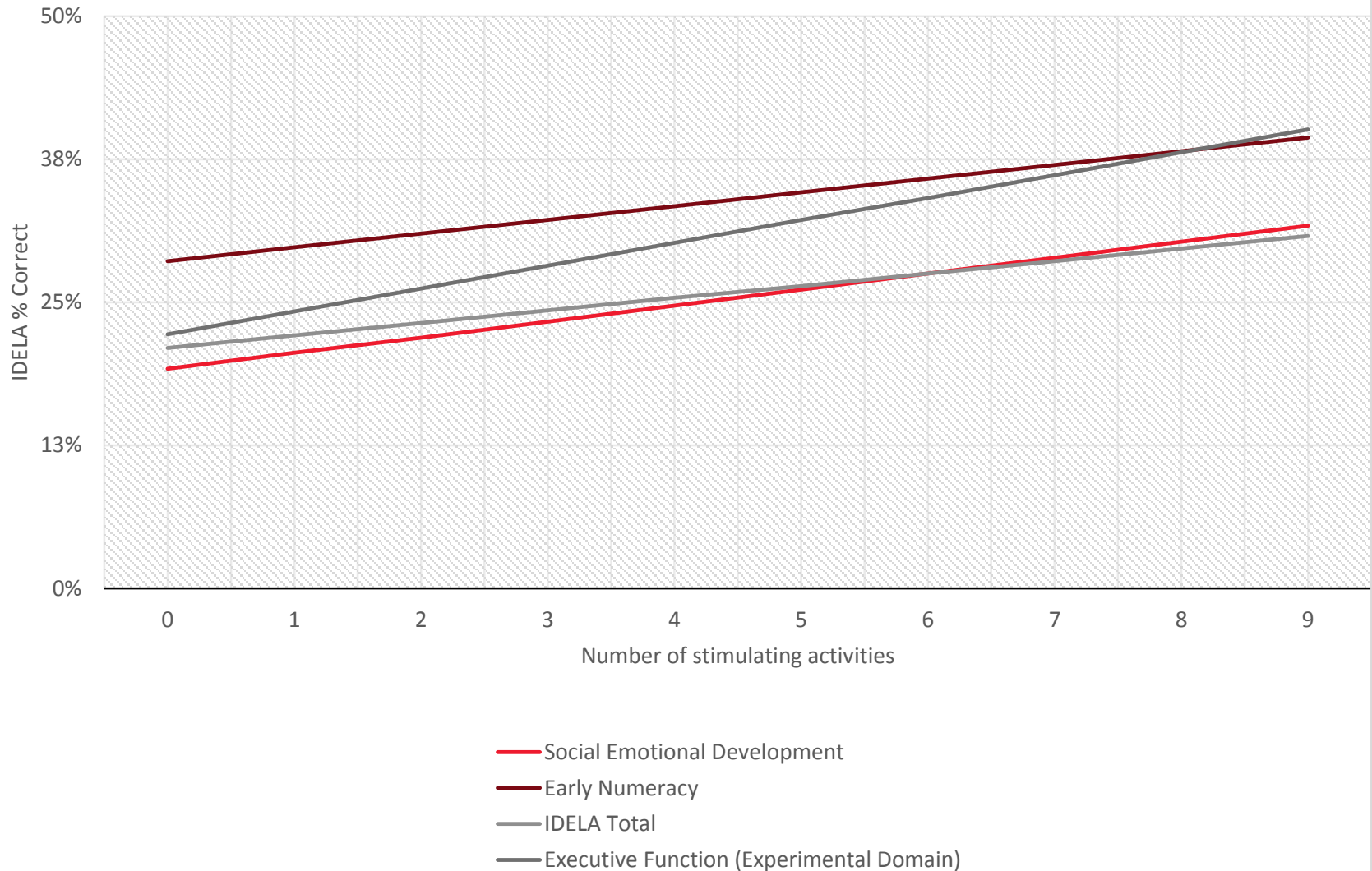
3-5 Age Group

Outcome	Positive relationships: Caregiver support	Positive relationships: Home engagement
Total IDELA	At least one caregiver per 2 children, Member of support group	Stimulating activities (any CG), Stimulating activities (mother)
Motor Development	At least one caregiver per 2 children	
Early Literacy	At least one caregiver per 2 children	Stimulating activities (mother)
Early Numeracy	Member of support group	Stimulating activities (mother)
Social Emotional Development	Member of support group	Stimulating activities (any CG)
Executive Function		Stimulating activities (any CG)
Approaches to Learning		Stimulating activities (any CG)

Significant relationships are noted after controlling for age, home learning environment, adversity, and, socio-economic status.

Programmatic Implications

A greater number of stimulating activities is associated with improved developmental outcomes





Conclusion and Recommendations



Conclusion

- Some adverse factors appear to have stronger negative relationships with developmental outcomes than others.
- **Considering some adverse factors as programmatic outcomes** would be appropriate (e.g. child hit or yelled at / lack of affection).
- Children and caregivers face wide-ranging adversities, but **impact on developmental outcomes of cumulative adversity is not clear.**
- Future work **may consider adverse factors individually** rather than as part of a cumulative index.



Recommendations

RECOMMENDATIONS FOR THE 0-3 AGE GROUP

- Provide additional support for families experiencing adversity
- Focus on positive discipline and child protection
- Consider adverse factors uniquely rather than a sum of identical factors
- Stimulation is key for everyone

RECOMMENDATIONS FOR THE 3-5 AGE GROUP

- Refine our measurement of executive function
- Focus on positive discipline and child protection
- Stimulation is key for everyone

Thank you



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