

# Developmental trajectories of externalizing and internalizing behaviors in relation to changes in caregiver warmth, social support, and depression.

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## Research Questions

There is a well documented association between quality of caregiving and children's psychopathology. However, most studies measure parenting practices at one time point. Little is known about how quality of caregiving changes in relation to the changes in the risk/resilience factors in the caregiver's life, which in turn impact on children's development.

This study will examine:

- 1) Developmental trajectories of caregiver warmth, perceived social support, depression, and children's externalizing and internalizing problem behaviors over early childhood.
- 2) Whether changes in caregiver warmth is related to changes in caregivers' satisfaction of social support and depression
- 3) Whether changes in externalizing and internalizing behaviors are meaningfully predicted by changes in caregiver warmth, perceived support, and caregiver depression

## Sample

- Data are from the National Survey of Adolescent and Child Well-Being (NSCAW). NSCAW is the first nationally representative sample of children involved with the Child Protective Services system (CPS) in the US.
- NSCAW is a longitudinal study of the cohort of children age birth to 14 who had contact with the child welfare system within a 15 month period beginning in October, 1999. The NSCAW is intended to answer a range of fundamental questions about the outcomes for abused and neglected children and their involvement in the child welfare system.
- Data were collected from children and caregivers using face-to-face and CAPI interviews.
- Four waves of data are used. The sample is restricted to children who were not placed in out-of-home care and had the same caregiver answered the interview across time. In addition, because child outcome variables were only available from age 2 and above, only children between age 2 and 6 were included (N = 1192; 49.7% male).
- The NSCAW sampling design is a two-stage, stratified, clustered design with unequal selection of observations.

## Measures

- Caregiver warmth was reported by case worker (Home Observation for Measurement of the Environment Short Form; Caldwell & Bradley, 1984; alphas .61 - .68),
- Satisfaction with social support was reported by caregiver (Social Support Questionnaire; Sarason, Levine, Sarason, & Basham, 1983; alphas .93-.99),
- Depression was reported by caregiver (derived from the Mental Health subscale of the Short Form Health Survey; Ware, Kosinski, & Keller, 1998; alpha .79).
- Externalizing and internalizing behaviors were reported by caregiver (Child Behavior Checklist; Achenbach, 1991; alphas .90-.92).

## Analyses

- The panel data were restructured so that age is the unit of time rather than wave of data.
- Maximum likelihood for missing data (Arbuckle, 1996) is used to estimate parameters in the presence of missing repeated measures.
- Sampling weights, strata, and clusters are accounted for in estimation.
- Linear trajectory models (Bollen & Curran, 2006) are used to estimate trajectories for caregiver warmth, satisfaction of social support, depression, and children's externalizing and internalizing problem behaviors (Figure 1 and 2)
- Parallel process models (Figure 3.) were used to explore whether changes in child outcomes were related to changes in caregiver warmth, support, and depression.

## Results

Figure 1. Changes in caregiver warmth, satisfaction of support, and depression

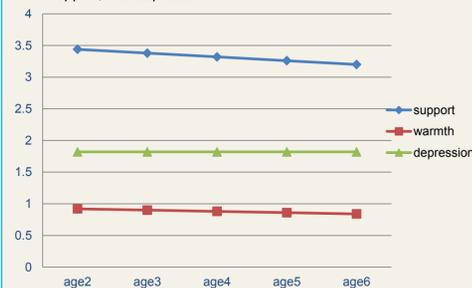


Table1. Parameter estimates and standard errors for Linear growth models of caregiver warmth, support and depression

	Warmth		Support		Depression	
	Estimate	SE	Estimate	SE	Estimate	SE
Fixed effect						
Intercept	.92***	.01	3.44***	.06	1.82***	.05
Slope	-.02***	.00	-.06***	.02	.00	.02
Random effect						
Variance						
Intercept	.01*	.01	.13***	.04	.26***	.08
Slope	.00	.00	.01	.01	.00	.02
Covariance						
Intercept-slope	.00	.00	.00	.02	.01	.03

Note. \*p < .05, \*\*p < .01, \*\*\*p < .001

Figure 2. Changes in externalizing and internalizing behaviors from age 2 to 6

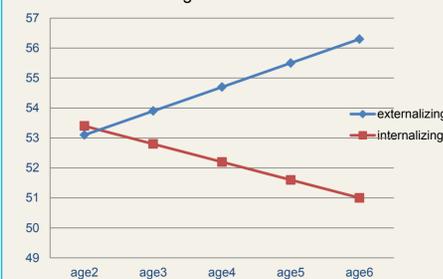


Table2. Parameter estimates and standard errors for Linear growth models of children's externalizing and internalizing behaviors

	Externalizing		Internalizing	
	Estimate	SE	Estimate	SE
Fixed effect				
Intercept	5.31***	.06	5.34***	.07
Slope	.08***	.02	-.06***	.02
Random effect				
Variance				
Intercept	.56***	.11	.50***	.10
Slope	.02†	.01	.03*	.01
Covariance				
Intercept-slope	.01	.03	-.01	.03

Note. †p < .10, \*p < .05, \*\*p < .01, \*\*\*p < .001

•Regarding the mean effect for the whole group, there were significant declines in caregiver warmth and satisfaction of social support; whereas caregiver depression remained stable over time.

•For the individual trajectories, there were significant baseline differences in caregiver warmth, support, and depression; however, none of the random slopes were significant, suggesting individuals did not differ in their rate of change over time.

•Similarly, a significant increase was found in children's externalizing behaviors and a significant decrease was found in internalizing behaviors. In addition, individuals differed in their baseline externalizing/internalizing levels, and the rate of change over time.

Figure 3. Parallel process model between caregiver depression and children's externalizing behaviors

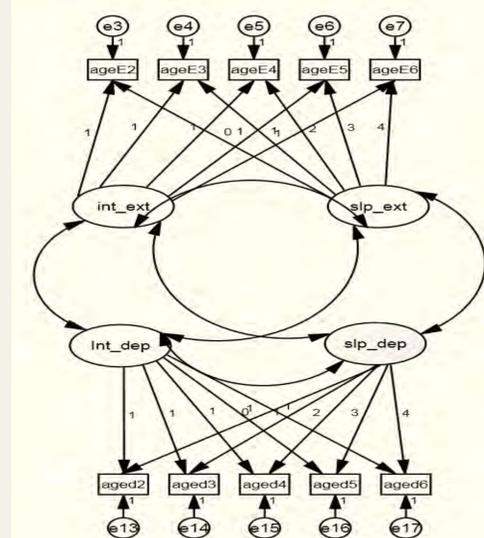


Table3. Covariance between children's behavior outcomes and caregiver warmth, support, and depression

	Int_EXT	Slp_EXT	Int_INT	Slp_INT
Int_Dep	.25***	-.02	.21***	-.03†
Slp_Dep	.01	.01†	.00	.02***
Int_Sup	-.08	-.01	-.05	.00
Slp_Sup	.00	-.01	.00	-.01
Int_Warm	-.02†	.00	-.01	.00
Slp_Warm	.00	.00	-.01	.00

Note. †p < .10, \*p < .05, \*\*p < .01, \*\*\*p < .001

Six parallel process models were conducted between children's externalizing /internalizing behaviors and caregiver warmth, satisfaction of social support, and depression. The results were presented in Table 3.

• For externalizing behaviors, higher caregiver depression in age2 was related to higher externalizing behaviors; increase in depression was marginally related to increase in externalizing behaviors over time. In addition, higher warmth in age 2 was marginally related to lower externalizing behaviors.

• For internalizing behaviors, higher caregiver depression in age 2 was related to higher internalizing behaviors; increase in depression over time significantly related to increase in children's internalizing behaviors from 2 to 6.

• We also conducted parallel process models between caregiver warmth and their perceived support and depression. However, none of the covariance were significant.

## Conclusion

This study found that increase in children's externalizing and internalizing problem behaviors were meaningfully related to increase in caregivers' depression from age 2 to 6.

Future analyses will be needed to include other individual and contextual risk/protective factors (e.g., child's temperament, family SES, marital status, etc.) to explore the possible mechanisms through which maltreatment impact on children's development over time.

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