

# **Impact of Relationship with the Caregiver and Positive Future Expectations on Behavioral and Emotional Resilience in Adolescents in Child Welfare**

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## **Statement of the Research Problem**

A positive relationship with the caregiver (Becker & Luthar, 2002; Luthar, Cicchetti & Becker, 2000; Luthar & Zigler, 1991; Masten & Coatsworth, 1998) and higher expectations of the future (Aspinwall & Taylor, 1992; Clausen, 1991; Wyman et al., 1992) have consistently been identified as protective factors for children and adolescents. However, it is not clear whether these relationships hold true for maltreated children. In fact, some research suggests that maltreated children may be negatively affected by greater attachment to their caregivers (Toth & Cicchetti, 1996). Considering that a key aim of the child welfare system is to protect children from maltreating caregivers, this paper investigates how the relationship with caregivers is related to adolescent hopefulness about the future, and behavioral and emotional resilience over time.

## **Research Background and Hypotheses**

### ***Importance of Research on Child Maltreatment***

Research on maltreatment is a national priority (Fantuzzo, Weiss, Atkins, Meyers, & Noone, 1998; Theodore & Runyan, 1999). Maltreated children may have more adverse outcomes than non-maltreated children (Green, 1981; Kinard, 1982; Perez & Widom, 1994; Shonk & Cicchetti, 2001; Vissing, Straus, Gelles, & Harrop, 1991). They are also more likely to be victimized (Tjaden & Thoennes, 2000), and more likely to perpetuate a cycle of violence. (Widom, 1989) Therefore, it is not surprising that the Department of Health and Human Services, in its directives on Healthy People 2010, and the Centers for Disease Control's National Center for Injury Prevention and Control, have included maltreatment in their research agenda (Whitaker, Lutzker, & Shelley, 2005).

### ***Relationship with Caregiver and Resilience in Adolescents***

The twin aims of the child welfare system – ensuring the safety and security of the child, and his/her well-being and permanence in a nurturing home – sometimes involve balancing different priorities. Although the child welfare system tries to consider the ‘best interests of the child’ in deciding about the placement or removal of children, what constitutes ‘best interest’ is not always clear. To make appropriate decisions, case workers need to understand the role of the primary caregivers in promoting resilience and enhancing hopefulness in children and adolescents.

A supportive relationship with an adult has consistently been identified as a protective factor for children (Becker & Luthar, 2002; Luthar, Cicchetti, & Becker, 2000; Masten & Coatsworth, 1998; Werner & Smith, 1982; 1992). Children who have a more optimal relationship with the caregiver are more likely to achieve academic success, have lower levels of substance use and show fewer internalizing and externalizing behaviors (Gray & Steinberg, 1999; Masten, 1986; Steinberg, 2001).

However, maltreated children are at risk of developing insecure or ambivalent relationships with their caregivers (Bowlby, 1969/1982). They may also develop negative representational models of themselves and their attachment figures (Oppenheim, Emde, & Warren, 1997). This insecure and disorganized attachment is associated with low regulatory control over impulses and negative attributions in interpersonal relationships (Cole & Putnam, 1992). Children who have experienced excessive discipline have been found to misinterpret social cues, perceive more antagonism, and use aggressive strategies to solve interpersonal problems (Weiss, Dodge, Bates, & Petit, 1992). Thus, research needs to investigate how quality of relationship between a maltreating caregiver and child is associated with behavioral and emotional problems in children.

### ***Future Expectations and Resilience in Adolescents***

Adolescents who have positive expectations of the future tend to regulate their behavior, maintain positive emotions and create opportunities for growth (Clausen, 1991; Wyman, Cowen, Work, & Kerley, 1993). Conversely, those who have low expectations of the future are likely to indulge in risk-taking behaviors such as alcoholism, drug use, delinquency and early sexual activity (Robbins & Bryan, 2004; Nurmi, 1991; Trommsdorf, 1986). Expectations for success in academics, employment and survival up to adulthood have been positively associated with lower depression and aggression in adolescence (DuRant, Cadenhead, Pendergrast, Slaverns, & Linder, 1994; Wyman et al., 1993).

Maltreatment has been linked to a pervading sense of hopelessness about the future in both adolescents and adults (Gladstone, Parker, Wilhelm, Mitchell, & Austin 1999; Hussey, Strom, & Singer, 1992). It has also been linked with depression (Lewinsohn, Gregory, Seeley, & Rohde, 1994; Rodriguez, 2006; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000) and re-victimization. (Messman-Moore, Long, & Siegfried, 2000). Grilo and his colleagues found that among two groups of adolescents who were admitted to an inpatient center for psychiatric problems, abused adolescents showed greater hopelessness about the future than non-abused adolescents (Grilo, Sanislow,

Fehon, Martino, & McGlashan, 1999). On the other hand, a qualitative study (Henry, 2001) found that children who were able to cope with maltreatment were those who were hopeful about the future. Positive expectations of the future may thus enable children to exhibit emotional and behavioral resilience.

### ***Relationship with Caregivers and Future Expectations***

This research also considers the interface between nature of relationship with the caregiver and children's expectations of the future. Caregivers provide adolescents with role models and expose them to a vision of the future that may encourage pro-social behavior. They may also model values, goals, beliefs and problem-solving strategies that nurture hopefulness about the future. Adolescents who have a positive relationship with their caregiver tend to have higher expectations of the future (Nurmi, 1991; Trommsdorff, 1983). Conversely, those who have a non-optimal relationship with their caregivers may have limited expectations of their future (Seginer & Halabi-Kheir, 1998). However, a review of literature did not yield studies about the nature of relationship with a caregiver and expectations of the future in the context of maltreatment.

### ***Study Hypotheses***

This study has four main hypotheses. First, a more optimal relationship with the caregiver will be associated with fewer emotional and behavioral problems. Second, higher expectations of the future will be associated with fewer emotional and behavioral problems. Third, higher expectations of the future will partially mediate the effect of relationship with the caregiver on behavioral and emotional resilience in adolescents. Finally, relationship with the caregiver and adolescents' expectations of the future will be associated with a change in behavioral and emotional problems over a period of time (3 years).

## **Methodology**

### ***Source of Data***

This is a secondary analysis of quantitative data from the National Survey of Child and Adolescent Well-being (NSCAW) – the first national study of the US child welfare system to collect data from children and families. The study was mandated by the U.S. Congress in the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PL104-193) to answer questions about the outcomes of abused and neglected children and their experiences in the child welfare system (Dowd et al., 2004).

### ***The NSCAW Sample***

The sample frame for the NSCAW study included all U.S. children who had a Child Protective Services (CPS) investigation and resided in states that allowed first contact with the child to be made by NSCAW representatives. Four states that required child welfare workers to be the first persons to interview families with allegations of maltreatment were excluded from the study. The data includes 6,228 children from birth to fourteen years at the time of sampling. It includes two sample frames: the Child Protective Services sample (N=5,501) and the Long-term Foster Care sample (N=727). The present study is based on the CPS sample.

The NSCAW data was collected over five waves. This study used data from Wave 1 (collected between 11/1999-4/2001) and Wave 4 (collected between 8/2002 and 2/2004). Children in the CPS sample who were between the ages of 11 and 15 at Wave 1 were chosen for the study. Thus the sampling frame for the current study includes adolescents who were investigated by the Child Protective Services for maltreatment and were between the ages of 11 and 15 at the time of initial sampling.

### ***Sample Selection and Weights***

The NSCAW data is based on a complex sampling design and thus requires the use of weights to enable generalization to the overall population (Dowd et al., 2004). These weights control for non-independence within Primary Sampling Units (PSUs); and for the unequal selection of key groups within the sample (domains).

The sample was selected using a two-stage stratified design. Firstly, the U.S. was divided into nine sampling strata, eight of which represented the eight states with the largest child welfare caseloads and the ninth consisted of the remaining 38 states and the District of Columbia. Within each stratum were the PSU clusters. A PSU was defined as the geographical area that included the population served by a single child welfare agency and included all US counties that were large enough to support at least one interviewer-workload or 60 or more cases per year. Eight domains (mutually exclusive and comprehensive categories of children) were considered when sampling. These were cross-classifications of four child characteristics – whether the children were receiving services, age of the child (less than a year old or more than a year old), placement in, or outside the home and type of abuse/neglect.

Children who were perpetrators of abuse rather than victims and those who were siblings of children already selected for the study were not included in the sample. The design over-sampled infants, sexual abuse cases and cases receiving ongoing services after investigation to provide adequate power to specific analyses.

### ***Human Subjects Considerations***

The NSCAW study underwent a rigorous and lengthy process of approval by a number of Institutional Review Boards (IRBs) in every state. Considering the vulnerability of the participants being studied, particular attention was paid to consent forms, mandatory reporting requirements, payments to participants, and data release plans. Participants were equitably selected on the basis of predetermined methodological criteria. Moreover, certain sensitive and confidential sections of both the caregiver and child interview were administered by way of the Audio Computer-Assisted Self Interview (ACASI) format (Dowd et al., 2004), lowering the impact of the interviewer in determining the responses of the participants and enhancing confidentiality. All these steps helped ensure that the participants were not harmed or taken advantage of as a result of this research. The present study was ruled as exempt from review by the IRB at the University at Albany because it was based on secondary data.

### ***Measures***

***Future expectations.*** The measure of future expectations was adapted from the Expectations about Employment, Education, and Life Span scale from the Adolescent Health Survey (Bearman, Jones, & Udry, 1997). This self-report measure contains

questions on a 5-point scale ranging from 1 (no chance); to 2 (some chance); 3 (about 50/50); 4 (pretty likely) and 5 (it will happen). These items had low internal consistency ( $\alpha=.51$ ), suggesting that they may tap into different dimensions of future expectations. Therefore, three items (chances that you would live to be at least 35; chances that you will graduate from school; chances that you will have a good job) which had the highest loadings on a single factor ( $\alpha=.59$ ) were summed to represent expectations of the future.

***Relationship with caregiver.*** This is measured with the help of an abridged version of the Rochester Assessment Package for Schools-Self Report for Middle School students (RAPS-SM) (Connell, 1990; Lynch & Cicchetti, 1991). This scale contains items that are indicative of sub-scales of emotional security provided by the caregiver, caregiver involvement, autonomy-support, and structure provided. The alpha for the 12 items on this scale for the NSCAW sample was .88 (Dowd et al., 2004). A sum score of these 12 items was created with higher values indicating a more optimal relationship with the caregiver.

***Behavioral problems.*** Behavioral problems were measured by adolescents' self-reports on the Externalizing behavior problems scale of the Youth Self Report (YSR; Achenbach & Rescorla, 2001). The YSR and its parent-report version, the Child Behavior Checklist (CBCL), are widely used and have good psychometric properties. The cross informant reliability between parent and child on CBCL and YSR for externalizing behavior is .56. The Cronbach's alpha for YSR's externalizing behavior scale is .90 (Achenbach & Rescorla, 2001). Lower levels of behavioral problems are considered an indicator of behavioral resilience. Other studies (Buckner, Mezzacappa, & Beardslee, 2003; Herrenkohl, Herrenkohl, & Egolf, 1994; Spaccarelli & Kim, 1995; Weed, Keogh, & Borkowski, 2006) have also measured behavioral resilience using the behavior problem scales of the CBCL/YSR.

***Depression.*** The Child Depression Inventory (CDI) (Kovacs, 1992) consists of 27 items, each rated on a 3-point Likert-type scale with higher scores indicating probable symptoms. The internal consistency of the CDI is good (.81 for 7- to 12-year-olds and .87 for 13- to 15-year-olds) (Dowd et al., 2004). Test-retest reliability of the CDI is between .38 and .87 (Kovacs, 1992). Lower level of depression was considered an indicator of emotional resilience.

Change in behavioral and emotional problems. A variable indicative of change in behavioral problems was created by calculating the difference on behavioral problems between Time 2 and Time 1 (Wave 1 and Wave 4 of the NSCAW data). Similarly a change score on difference between Time 2 and Time 1 was created for child depression indicative of change in emotional problems.

Control variables. Gender, income, age, and race were measured by NSCAW developed questions. Severity of maltreatment and who was responsible for the most serious maltreatment, were measured through caseworker reports on the most serious maltreatment.

### ***Data Analysis***

All analyses were conducted using the complex samples package of SPSS 16 after considering national, domain and stratum weights. Multiple linear regression was used

for all inferential analyses. All analyses controlled for severity of maltreatment, whether the primary caregiver was involved in maltreatment, family income, adolescents' gender and age.

The incremental F test was used to compare the full models with the nested models. The difference in R<sup>2</sup> was obtained by using the formula:  $F = \frac{(R^2_{\text{Full}} - R^2_{\text{Reduced}}) / (K_{\text{Full}} - K_{\text{Reduced}})}{(1 - R^2_{\text{Full}}) / (N - K_{\text{Full}} - 1)}$ . Here, R<sup>2</sup> Full was the value of the R<sup>2</sup> for the equation with the larger number of predictors; R<sup>2</sup> Reduced was the R<sup>2</sup> of the equation with the smaller number of predictors, K Full was the number of predictors in the full model and, K Reduced was the number of predictors in the smaller model, and N was the number of subjects in the sample.

The change scores method (Allison, 1990) was used to analyze differences in behavioral and emotional problems between Time 1 and Time 2. Change scores are a reliable method of understanding differences in outcome variables over time (Sharma & Gupta, 1986; Zimmerman & Williams, 1982; Williams & Zimmerman, 1996).

## Results

### *Characteristics of the Sample*

By including all adolescents aged 11 to 15 years, the unweighted sample consisted of 1,178 cases which represent 586,031 children or 24.5 % of the overall child welfare population aged 0 to 15 years (see Table 1). The sample was 57.1 % female and 42.9 % male. The age range of adolescents at the time of the first interview was 11 to 15 years. Their mean age was 12.72 years. Income of the families of adolescents was measured in a categorical range rather than in discrete values. 42.8% of the adolescents lived in families earning below \$15,000 per annum. The mean annual income of families in which adolescents lived was in the range of \$20,000-\$24,999. 54.3% of adolescents were Caucasian; 27.3% identified themselves as African American, 4% considered themselves American Indian, 1.8% stated they were Asian and 0.5% said they were Hawaiian. 16.4% of adolescents did not know or refused to answer the question about race while 4.3% of the adolescents identified themselves as belonging to more than one race.

### *Relationship with the Caregiver, Future Expectations and Behavioral and Emotional Resilience*

Expectations of the future and relationship with the caregiver were each significantly associated with both behavioral and emotional resilience even after controlling for predetermined variables. As shown in Table 2, every unit increase in expectations of the future lowered emotional problems by 1.69 units and behavioral problems by 1.59 units. Similarly, every unit improvement in the quality of relationship with the caregiver was associated with a 2.03 unit drop in emotional problems and 1.42 drop in behavioral problems. The overall explained variance of the models predicting behavioral problems was 0.19 for future expectations and .16 for relationship with caregiver. The total variance explained for the models on emotional problems was .33 from relationship with caregiver and .24 from future expectations. All analyses controlled

for severity of abuse, whether the primary caregiver was involved in maltreatment, family income, adolescents' gender and age.

***Partial Mediation of Relationship with Caregiver on Behavioral and Emotional Problems by way of Future Expectations***

Relationship with the caregiver was significantly associated with expectations of the future ( $B=.35$ ;  $p<.001$ ). Further, the nature of relationship with caregiver and future expectations were significantly associated with the outcome variables even after controlling for each other. The nature of relationship with the caregiver ( $B= -1.64$ ) and expectations of the future ( $B=-1.12$ ) were significantly associated with emotional problems. Similarly, nature of relationship with the caregiver ( $B=-1.00$ ) and future expectations ( $B=-1.27$ ) were also significantly associated with behavioral problems after controlling for each other. As suggested by Baron and Kenny (1986), there was a reduction in unstandardized coefficients of relationship with the caregiver after the inclusion of future expectations in the models predicting emotional problems and behavioral problems.

Using an incremental F test, the difference between the full model which included both future expectations and relationship with the caregiver in predicting emotional problems and the model that included only relationship with the caregiver and other control variables predicting emotional problems was tested. A comparison of these two models using the incremental F test showed that the addition of future expectations to the equation significantly improved the explained variance ( $p <.001$ ). Similarly, a comparison of the full model with future expectations and relationship with the caregiver in predicting behavioral problems and the model in which only relationship with the caregiver and control variables were associated with behavioral problems showed that the addition of future expectations provided significantly more explanatory power to the equation in predicting behavioral problems ( $p<.001$ ).

***Relationship with the Caregiver, Future Expectations, and Change in Behavioral and Emotional Resilience***

Relationship with the caregiver was associated with lower rates of emotional ( $B= -.87$ ;  $p<.001$ ) and behavioral problems ( $B=-.47$ ;  $p=.04$ ) over a period of time. Expectations of the future were independently associated with lower behavioral ( $B=-.48$ ;  $p=.03$ ) and emotional problems ( $B=-.91$ ;  $p=.005$ ). The overall variance explained of each of the models was modest ( $R^2=.17$  for emotional problems and  $R^2=.10$  for behavioral problems) but significant.

**Implications for Social Work Practice**

This study provides evidence that adolescents who have a more optimal relationship with the caregiver are likely to have positive expectations of the future and fewer emotional and behavioral problems. It highlights the critical role of caregivers in promoting resilience in adolescents and suggests that interventions aimed at improving the quality of relationship between caregivers and adolescents are likely to enhance adolescents' expectations about the future, and their behavioral and emotional resilience. Further, this study suggests that expectations of the future partially mediated the impact

of relationship with the caregiver on behavioral and emotional resilience. In other words, a more optimal relationship with a caregiver was associated with fewer behavioral and emotional problems both directly and through its impact on expectations of the future.

This research supports the case for resilience-focused interventions in children and families in the welfare system. Although the goal of social work is to promote competence in clients (Germain & Gitterman, 1996), child welfare services are generally geared towards problem alleviation (Hegar & Hunzekar, 1988) rather than competence-promotion. The results of this study indicate that focusing on protective factors such as a more optimal relationship with the caregiver and higher expectations of the future can improve the outcomes for maltreated children and adolescents.

This study highlights the importance of evaluating the parent-adolescent relationship, as an important component of the design of interventions and service delivery. It suggests that interventions aimed at improving the caregiver-adolescent relationship are likely to promote positive adaptation in adolescents. Moreover, it also suggests that disruptions in a supportive caregiver-adolescent relationship in the form of removal of the adolescent from the home could negatively affect the behavioral and emotional well-being of adolescents.

This study also shows that despite adverse life experiences, a majority of maltreated adolescents in child welfare had relatively positive relationships with their caregivers and relatively high expectations of the future. However, this study also highlighted certain at risk groups of adolescents. For instance, about 6% of children in this study (an estimated population of 33,927) believed that they had little or no chance of surviving to the age of 35. These children who fear an imminent danger to their lives may be most at risk of adverse outcomes. Social workers have a crucial role in identifying these children and providing interventions to ensure their safety and address their psychological trauma.

The findings of this study need to be placed within the larger framework of questions about the ability of the welfare system to deal with family preservation (Pelton, 1997) and the policing functions of the child welfare system. Systemic constraints may make it difficult for social workers to implement empowering interventions in the welfare system that involve caregivers and adolescents in the decision-making process (Hegar & Hunzekar, 1988). This research reinforces the case for involving caregivers and their children in the intervention process could enhance the efficacy of interventions. It also suggests that parent support services and interventions aimed at enhancing parenting efficacy can lead to more positive outcomes in adolescents.

Based on this research, a strong case can be made for early identification of problems and interventions to boost resilience in families. Early and appropriate interventions to enhance caregiver-child relationships and enable adolescents to be more hopeful of the future despite their experiences of maltreatment may help foster behavioral and emotional resilience in adolescents over time. Such interventions may also reduce long-term costs associated with likelihood of conduct problems in adolescents developing into adult criminal behavior.

Social workers need to develop a clear understanding of resilience-promoting processes. This understanding may promote triaging of services, possibly directing more



intensive or restrictive intervention to the less resilient families while providing parenting supports, resources and training to caregivers who are willing but unable to provide effective nurturance.

Social workers also need to advocate for the most vulnerable persons in society and ensure that marginalized persons are not portrayed as being without resources or strengths. Promoting access to resources and timely services may enable families to surmount personal and structural challenges. This will not only promote change within families but also help break the cycle of violence and enable adolescents to actualize their potential despite their traumatic experiences.

Table 1

*Demographic characteristics of sample (Unweighted N=1178; Weighted population size=586,031)*

	<b>Estimated Population %</b>	<b>95% C.I.<sup>a</sup> %</b>	<b>Unweighted Sample size N</b>
<b><i>Gender</i></b>			
Male	42.9	36.8 – 49.2	496
Female	57.1	50.8 – 63.2	682
<b><i>Race of adolescent<sup>b</sup></i></b>			
White	54.3	46.0 – 62.4	618
African American	27.3	20.9 – 34.8	369
American Indian	4.0	2.4 – 6.5	69
Asian	1.8	0.7 – 4.6	18
Hawaiian	0.5	0.2 – 1.6	9
Don't know/refused	16.4	10.8 – 26.0	173
<b><i>Family Income</i></b>			
<5000	5.8	3.2 – 10.4	39
5000 – 9,999	17.4	13.5 – 22.2	151
10,000 – 14,999	19.6	15.1 – 25.1	154
15,000 – 19,999	10.4	7.7 – 14.0	134
20,000 – 24,999	10.3	6.8 – 15.2	115
25,000 – 29,999	9.4	6.7 – 13.1	82
30,000 – 34,999	5.4	3.7 – 7.8	68
35,000 – 39,999	3.7	2.0 – 6.6	49
40,000 – 44,999	5.0	2.7 – 9.1	48
45,000 – 49,999	2.8	1.6 – 4.6	41
50,000 or more	10.2	7.1 – 14.4	118
<b><i>Age (Wave 1)</i></b>			
11 years	21.7	17.4 – 26.7	268
12 years	21.7	15.9 – 28.8	244
13 years	27.2	21.2 – 34.2	284
14 years	22.0	16.9 – 28.0	284
15 years	7.4	5.2 – 10.5	98

<sup>a</sup> C.I.= Estimated Confidence Interval in the population.

<sup>b</sup> Percentages do not add up to 100 due to multiple response.  
Unweighted Ns may vary due to missing responses.

Table 2  
*Effect of Relationship with caregiver and Future expectations on Emotional and Behavioral problems*

Predictors	Estimate (S. E)	Wald F(df); p	R <sup>2</sup>
<b><i>Relationship with caregiver on Emotional problems</i></b>			
<b>Relationship with caregiver</b>	<b>-2.03 (0.20)</b>	<b>100.83 (1,83); &lt;.001</b>	<b>-</b>
<b>Severity of Abuse</b>	<b>1.13 (0.47)</b>	<b>5.71 (1, 83); .02</b>	<b>-</b>
Whether the mother is abuser <sup>a</sup>	1.78 (1.00)	3.18 (1,83); .08	-
Gender <sup>b</sup>	-0.71(0.94)	0.58 (1,83); .54	-
Income	-0.08 (0.14)	0.30 (1,83); .58	-
Age	0.16 (0.24)	0.44 (1,83); .51	-
<b>Overall model</b>		<b>20.28 (6,78); &lt;.001</b>	<b>.33</b>
<b><i>Relationship with caregiver on Behavioral problems</i></b>			
<b>Relationship with caregiver</b>	<b>-1.42 (0.24)</b>	<b>35.75 (1,83); &lt;.001</b>	<b>-</b>
Severity of Abuse	0.64 (0.54)	1.40 (1,83); .24	-
Whether the mother is abuser <sup>a</sup>	2.15 (1.40)	2.33 (1,83); .13	-
Gender <sup>b</sup>	1.46 (1.22)	1.41 (1,83); .24	-
Income	-0.06 (0.19)	0.10 (1,83); .75	-
<b>Age</b>	<b>0.81 (0.35)</b>	<b>5.30 (1,83); .02</b>	<b>-</b>
<b>Overall model</b>		<b>8.68 (6,78); &lt;.001</b>	<b>.16</b>
<b><i>Future expectations on Emotional problems</i></b>			
<b>Future expectations</b>	<b>-1.69 (0.26)</b>	<b>43.16 (1,83); &lt;.001</b>	<b>-</b>
Severity of Abuse	0.51 (0.48)	1.11 (1, 83); .29	-
Whether the mother is abuser <sup>a</sup>	1.30 (1.07)	1.47 (1,83); .23	-
<b>Gender<sup>b</sup></b>	<b>-2.87 (0.97)</b>	<b>8.80 (1,83); .004</b>	<b>-</b>
Income	0.02 (0.17)	0.01 (1,83); .93	-
Age	0.30 (0.27)	1.21 (1,83); .27	-
<b>Overall model</b>		<b>9.16 (6,78); &lt;.001</b>	<b>.24</b>
<b><i>Future expectations on Behavioral problems</i></b>			
<b>Future expectations</b>	<b>-1.59 (0.27)</b>	<b>35.59 (1,83); &lt;.001</b>	<b>-</b>
Severity of Abuse	0.04 (0.44)	0.01 (1,83); .93	-
Whether the mother is abuser <sup>a</sup>	1.91 (1.25)	2.34 (1,83); .13	-
Gender <sup>b</sup>	0.13 (1.02)	0.02 (1,83); .90	-
Income	0.01 (0.17)	0.01 (1,83); .93	-
<b>Age</b>	<b>0.87 (0.34)</b>	<b>6.71 (1,83); .01</b>	<b>-</b>
<b>Overall model</b>		<b>8.27(6,78); &lt;.001</b>	<b>.19</b>

<sup>a</sup> Reference group is other perpetrators

<sup>b</sup> Reference group is girls

Table 3  
*Association of Relationship with the Caregiver and Expectations of the Future with Change in Emotional and Behavioral problems*

Predictors	Estimate (S. E)	Wald F(df); p	R <sup>2</sup>
<i>Change in Emotional problems</i>			
<b>Relationship with caregiver</b>	<b>-0.87 (0.22)</b>	<b>15.17(1, 82); &lt;.001</b>	-
<b>Future expectations</b>	<b>-0.91 (0.31)</b>	<b>8.42 (1,82); .005</b>	-
Severity of Abuse	0.04 (0.46)	0.01 (1,82); .93	-
Whether the mother is abuser <sup>a</sup>	-0.33 (1.21)	0.07 (1, 82); .79	-
Gender <sup>b</sup>	0.50 (1.11)	0.20 (1, 82); .66	-
Income	-0.13 (0.19)	0.52 (1, 82); .47	-
Age	0.27 (0.39)	0.47 (1, 82); .49	-
<b>Overall model</b>		<b>4.13 (7, 76); &lt; .001</b>	<b>.17</b>
<i>Change in Behavioral problems</i>			
<b>Relationship with caregiver</b>	<b>-0.47 (0.23)</b>	<b>4.33(1,82); .04</b>	-
<b>Future expectations</b>	<b>-0.48(0.22)</b>	<b>4.70(1,82); .03</b>	-
Severity of Abuse	-0.32 (0.46)	0.50(1,82); .48	-
Whether the mother is abuser <sup>a</sup>	-0.86 (1.07)	0.65(1,82); .42	-
Gender <sup>b</sup>	1.17 (1.01)	1.32(1,82); .25	-
Income	-0.16 (0.12)	1.46(1,82); .23	-
<b>Age</b>	<b>1.09 (0.36)</b>	<b>9.04(1,82); .003</b>	
<b>Overall model</b>		<b>2.88(7,76); .01</b>	<b>.10</b>

<sup>a</sup> Reference group is other perpetrators

<sup>b</sup> Reference group is girls

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