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Predicting Behavioral Dysfunctions of Youth Living in Violent Homes: A Rapid Assessment Triage Tool

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Introduction

Approximately one in three women worldwide are assaulted annually by an intimate partner.¹ Many of these women have children who witness the domestic abuse. When women are abused, child functioning is compromised through the conduit of poor maternal functioning,² and if the mother is abused during pregnancy, the impact on maternal³ and child functioning⁴ is far more severe. Negative impacts of domestic violence on children can be long-lasting. Children whose parent reported partner violence, psychological stress, or both and were followed up to 72 months of age were less likely to meet all expected developmental milestones compared with children whose parent did not report these stressors. The risk was greatest if the parent reported both partner violence and psychological stress.⁵ If child development and functioning are to be optimized, an assessment tool is required to triage youth who are exposed to domestic violence and are at risk for behavioral dysfunctions and developmental delays so that needed referral to services can be completed. Thus, the purpose of the current study was to develop and validate a screening tool to predict behavior dysfunction in children.

The American Academy of Pediatrics supports initiatives to intervene early when children are exposed to domestic violence so that negative and costly sequelae can be prevented.⁶ This study aims to give pediatricians and other health care and service professionals working in child and family health settings a brief assessment tool to predict which children recently exposed to domestic violence are in the greatest need of immediate referral and services, so as to minimize dysfunctional behavior problems and the adverse health consequences of exposure to violence.

Patients and Methods

A cross-sectional design is followed with data for 300 abused mothers and 300 children living with the abused mothers. The study was conducted in a large urban metropolis in the United States with a population exceeding 4 million. Shelters and justice services were the settings used because safe shelter and justice interventions are the services most commonly sought by abused women. Our eligible population consisted of English- or Spanish-speaking abused mothers seeking shelter or justice services for the first time through the office of the district attorney (DA) – specifically a protection order. These women had never used shelter services or applied

for a protection order in the past and had at least one child between the ages of 18 months and 16 years. Although the sample of 300 mothers and 300 children has been followed for several years, the data for this paper are drawn from the first interview of the 300 mothers.

Procedures

Following internal review board approval, recruitment began at five shelters for abused women and the DA office. Trained, bilingual (English and Spanish) researchers approached all women entering the shelter or applying for a protection order and established eligibility. Recruitment, eligibility screening, and entry into the study continued daily for 13 months at the five shelters and Monday through Friday at the DA office. Over the 13 months, 330 mothers met the eligibility criteria. A total of 19 eligible women refused to participate, usually because of a lack of time, and 11 women were missed (i.e., left the shelter or the DA office before screening). A total of 300 mothers met the eligibility criteria and agreed to participate.

Participants

The 300 mothers in the study ranged in age from 18 to 52 years (mean [M] = 30.65, standard deviation [SD] = 7.64), with the ages of the randomly chosen children ranging from 1.5 to 16.42 years (M = 6.88, SD = 4.23). Boys comprised 50.7% of the sample of children, and girls comprised the remaining 49.3%. The length of the relationship with the abuser ranged widely from less than 1 month to 25 years (M = 83.59, SD = 62.86). The greatest percentage of the sample self-identified as Spanish or Hispanic (n = 137; 45.7%), followed by Black (n = 78, 26.0%) and White (n = 32; 10.7%).

Some 81% of the mothers reporting taking their child for a health care visit within the preceding 4 months, during the same 4-month period when the mothers reported appreciable physical and sexual abuse from the intimate partner. When asked if their child had an illness or disability, 68 of the 300 mothers (23%) responded yes, with most of the child illnesses reported as chronic conditions, such as heart murmurs and asthma (n = 23, 34%), followed by attention deficit disorders (n = 12, 18%), speech delays (n = 11, 16%), mental disorders (n = 8, 12%), and other conditions, such as eczema and dyslexia (n = 14, 20%). Descriptive statistics for the predictor and outcome variables for shelter and DA women are shown in **Table 1**.

Measures

To establish temporal sequencing, the measure questions asked at entry into the study were prefaced with “during the last 4 months.” All measures were completed within 48 hours of contact with shelter or justice services. In addition to demographic characteristics, measures assessed the following: severity of abuse; danger of murder; mental health symptoms of depression, anxiety, somatization, and post-traumatic stress disorder (PTSD); social support; marginalization; self-efficacy; safety behaviors; and community resource use as reported by the abused woman. Women were asked to rate their perceived health state and the frequency with which their child had witnessed physical abuse; they were also asked whether their child had visited a health care provider within the last 4 months or had a chronic illness or disability, and whether external and internal behavioral dysfunctions as measured on the Child Behavior Checklist (CBCL) were present.^{7,8} The psychometrics of all instruments is offered elsewhere, as well as details on methods.⁹

Analysis

A set of predictor variables for the current study was chosen a priori. These were in line with Sameroff’s transactional model¹⁰ and Bronfenbrenner’s ecological model,¹¹ which propose that a child’s development is influenced by an intricate set of factors, including the child himself or herself, the immediate family, and the environment. The variables are conceptually related to child behavior problems, such as depression or PTSD among mothers,² and relevant child demographic information, such as age and gender¹² and the degree of child exposure to domestic violence.^{13,14} The 17 independent variables were collected at the time the abused mother sought protection and were used to predict both child internalizing and child externalizing behaviors independently, as defined by the CBCL.^{7,8} The outcomes of internalizing and externalizing behaviors were grouped into the categories of “normal” and “borderline clinical and clinical” based on clinical samples of large populations of youth. The borderline clinical and clinical categories were combined because of the relatively small percentage of children characterized as being within the borderline clinical category and are referred to as “clinical” throughout the results. In addition, abused women who went to an emergency shelter and abused women who sought a protective order were modeled separately to offer providers of shelter and providers of justice services tools tailored for abused women who access their services.

The relationships between each predictor variable and clinical levels of internalizing and externalizing behaviors were assessed by univariate categorical regression and are shown in **Table 1** as standardized beta weights. Continuous variables were modeled by using nonmonotonic cubic spline scaling with three interior knots based on preliminary inspection of receiver operating characteristic (ROC) curve analysis showing nonlinear relationships between the continuous predictors and outcomes.¹⁵ Beta weights associated with simple nonmonotonic categorical regression are shown in order to provide standardized values that can be assessed as a measure of effect size and to aid comparisons with the continuous variables. Consistent with the methods recommended by numerous authors, potential predictors were not eliminated based on the significance level of univariate analysis.^{16–18} Instead, in order to identify the subset of predictors with the highest prognostic ability for clinical internalizing and externalizing behaviors, categorical regression with optimal scoring and lasso (L_1) penalization was employed.¹⁹ L_1 -penalizing methods shrink the estimates of the regression coefficients toward 0 relative to the maximum likelihood estimates in order to reduce overfitting arising from small samples, collinearity, and high dimensionality. The amount of shrinkage is determined by the tuning parameter λ_1 , which is progressively increased to the value that shrinks all regression coefficients to 0. The least absolute shrinkage and selection method allows assessment of the relevance and robustness of individual explanatory variables but produces biased estimates for the regression coefficients. Therefore, once the optimal selected predictors were obtained by using the lasso with .632 bootstrap (100 samples), final model coefficients and scoring were conducted by using categorical regression with optimal scoring. Next, standard multiple logistic regression was used to obtain the predicted probability of clinical child behaviors from the score obtained from combining the set of optimal predictors into a regression equation. Model discrimination was assessed through the area under the curve (AUC) and the discrimination slope. Model calibration was assessed with the Hosmer-Lemeshow test and by assessing the stratification capacity.²⁰ Finally, model validation was addressed by bootstrapping the AUC and reporting the values and 95% confidence interval (CI) along with estimated minimum and maximum values to maximize statistical efficiency and directly validate the final model.²¹ IBM SPSS Statistics 21 (IBM, Armonk, New York, USA) was used for all analyses.

Results

Four separate models were developed to predict the clinical levels of child internalizing and child externalizing behaviors for shelter and DA women. All 17 predictor variables were entered into each categorical regression with optimal scoring and L_1 penalization.²⁰ All predictors were allowed to be nonmonotonic, and cubic splines were used for continuous predictors. Knots were placed by the CATREG program in IBM SPSS Statistics 21, which uses procedure-determined placement of the interior knots.²² For each model, the predictors identified in the optimal model (determined by applying iterative λ_1 penalizations with .632 bootstrap and identifying the iteration with the smallest estimate for the expected prediction error in the standardized data, as described in “Patients and Methods”) were retained. A second round of modeling was done while using the same procedure with only the variables from the optimal model in order to determine if a more parsimonious optimal model could be found. Once a stable set of predictors had been established, continuous variables were discretized into groups with uniform distribution in order to create categories that could be scored in a tool developed for frontline providers. The number of categories ranged from four to six based on the number of categories that optimized the correlation coefficient (R^2) of the overall model. The final predictors were then entered into a categorical regression with no penalization. Both the categorical predictors and discretized continuous variables were entered nonmonotonically. Beta weights and the optimal scores for each category of each predictor were multiplied in order to create a regression equation for each model. These values were linearly transformed in the final tools in order to eliminate negative values and decimal places ($[(\text{quantification score} * \text{beta}) + 1] * 100$).

The final scores after transformation are shown in the tools (**Figs. 1–4**). Final model beta coefficients and associated model statistics, including the AUC, are presented in **Table 2**. The AUC was quite high (.801–.903) for all four models, indicating good model discrimination. After 2000 cycles of bootstrapping, the average reduction in AUC was $<.001$ (95% CI change $<.01$), suggesting very minimal overfitting. Furthermore, the discrimination coefficients, or in other words the absolute differences in the average prediction for children with and without clinical level behaviors, were 49.5% (SE = 4.5%, $p < .001$) for the internalizing DA group, 25.6% (SE = 4.0%, $p < .001$) for the externalizing DA group, 30.0% (SE = 3.8%, $p < .001$) for the internalizing shelter group, and 27.4% (SE = 3.7%, $p < .001$) for the externalizing shelter group. In all cases, children with clinical level behaviors had significantly higher average predicted probabilities than did children in the normal range.

As shown in **Table 3**, all four models successfully stratified the population into clinically relevant risk categories, indicating good model calibration. The percentages of children in the DA group classified as very low risk (predicted probability of clinical behaviors <10%) were 23.3% (externalizing) and 36.7% (internalizing), whereas the percentages of children in the shelter group classified as very low risk were 12.7% (externalizing) and 11.3% (internalizing). Of the children in the shelter group, 100% did not display clinical levels of internalizing or externalizing behaviors, and of children in the DA group, 5% or fewer were classified as very low risk for displayed clinical behavior. Of the children classified as having the highest risk (predicted probability of clinical behaviors >75%), between 82% and 100%, across both shelter/DA and internalizing/externalizing behaviors actually presented with clinical level behaviors. When the predicted probability of a shelter child having clinical externalizing problems was between 50% and 75%, the probability that the child would truly have a clinical externalizing classification on the CBCL (sensitivity) was 61.5%, whereas the probability that a child would be in the normative range when he or she was actually in the normative range on the CBCL (specificity) was 76.5%. The sensitivity and specificity are provided for each range of predicted probabilities.

In summary, four models were assessed, and a predictive tool was developed for each one. The accuracy of all four models was good and suggests a useful tool for the assessment of risk of clinical level child behavior problems at the time a mother seeks protection from an emergency shelter or a protective order for children between 1 and 16 years of age. Because 81% of the children had seen a health care provider within 4 months of their mother seeking services, the predictive tool can be used when mothers are screened for abuse with a positive result during their child's health visit.

Key Predictors of Child Dysfunction in the Children of Mothers Seeking a Protection Order

The information needed to predict externalizing behavioral problems in a child whose mother seeks a protection order includes the following: (1) the number of times the child has witnessed abuse of the mother, (2) the length of time the mother has been in a relationship with the abuser, (3) the mother's perceived physical health, (4) the mother's perceived mental health, (5) the PTSD symptoms score, and (6) the tangible and emotional support scores. The information needed to predict a child's internalizing behavioral problems include the following: (1) the number of times the child has heard verbal abuse, (2) the child's gender, (3) the child's age, (4)

the length of time with the abuser, (5) the mother's perceived mental health, (6) the PTSD symptoms score, and (7) the emotional and tangible support scores.

The PTSD score is measured with seven questions taken from the National Institute of Mental Health Diagnostic Interview Schedule for the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV).²³ Emotional and tangible support is assessed from the answers to three items about three people who have provided emotional support (i.e., respect, trust) and tangible support (i.e., money, transportation) during the last 4 months.^{24–26} For each raw score obtained from the risk factors, there are corresponding weighting totals to account for the varying degree of risk associated with a particular outcome on a given measure. A sum of the weighted obtained scores provides a prediction of risk for child dysfunction at the time mother seeks justice services. The time needed to complete the measures is about 5 minutes, and scoring can be completed by hand in approximately 1 to 2 minutes. The rapid assessment triage tools for the risk of externalizing and internalizing behavior problems in the children of mothers seeking justice services appear in **Figs. 1 and 2**, respectively.

Key Predictors for Child Dysfunction in the Children of Mothers Seeking Shelter

The information needed to predict externalizing behavioral problems in a child whose mother enters a shelter includes the following: (1) the mother's level of education, (2) the presence of an illness or disability in the child, (3) the child's gender, (4) the age of the child, (5) the mother's perceived mental health, (6) the PTSD symptoms score, and (7) the emotional support score. The information needed to predict internalizing behavioral problems in a child whose mother enters a shelter includes the following: (1) the mother's level of education, (2) the number of times the child has witnessed abuse of the mother, (3) the presence of an illness or disability in the child, (4) Spanish or Hispanic ethnicity, (5) the age of the child, (6) the length of time mother has been in a relationship with the abuser, (7) the mother's perceived mental health, (8) the PTSD symptoms score, (9) the emotional support score, and (10) the tangible support score.

The PTSD, emotional support, and tangible support scores are obtained as described above. For each raw score obtained from the risk factors, there are corresponding weighting totals to account for the varying degree of risk associated with a particular outcome on a given measure. A sum of the weighted obtained scores provides a prediction of the risk for

child dysfunction at the time the mother seeks shelter services. The time needed to complete the measures is about 5 minutes, and scoring can be completed by hand in approximately 1 to 2 minutes. The rapid assessment triage tools for the risk of externalizing and internalizing behavior problems in the children of sheltered women appear in **Figs. 3** and **4**, respectively.

Discussion

Of the 300 children living in violent homes whose mothers reported extensive physical and sexual abuse within the preceding 4 months, 81% had seen a health care provider within the same period of severe abuse to the mothers. A simple 5-minute triage tool revealed that of the children classified as having the highest risk for dysfunctional behavior (i.e., predicted probability of clinical behaviors >75%), between 82% and 100% actually displayed clinical level behaviors. Although the children in our study were the offspring of abused mothers seeking protection services, it is extensively reported that all children of abused mothers are at risk for behavioral problems and compromised development.^{27–30} The pediatric care setting offers a safe place for the assessment of mother and child safety, but the components of quality well-child preventive health care also include the assessment of intimate partner violence and of child behavior and development.⁶

When a mother reports abuse during a child health care visit, the rapid assessment triage tools can be used to gauge the immediate likelihood of clinical level dysfunctional behavior in the child. The literature suggests a link between the abuse of women and an increased risk for child abuse by the offender.^{31–34} Abused women frequently leave the abuser because of potential harm to the child. The data obtained with the rapid assessment triage tools may provide an abused mother with information on the likelihood of her child displaying dysfunctional behaviors and may also promote informed decision making by the mother related to child safety in the home. Because research suggests that all children of abused mothers are at risk, the regular screening of children who appear to be at no or low risk is considered optimal to identify emerging risks in these children.

The health risk behaviors of adolescents and young adults who have been exposed to intimate partner violence as children have been linked to alcohol and drug use,^{35–38} violence and/or delinquency,^{39–43} and sexual risk behaviors.⁴⁴ Thus, a second use of the rapid assessment triage tool screening tool score, in addition to the observation of child behavior during health care visits, is to provide clinicians with evidence of the immediate need for behavioral assessment/treatment by a specialist

and referral for an evaluation. Because the triage tools for shelter and DA women are very similar, the tools can be used in a health care practice to predict dysfunctional behavior in the children of mothers who report partner abuse within the last 4 months.

We found that 23% of abused mothers reported that their child had a chronic illness, and these children were at higher risk for dysfunctional behavior. Recent research documents greater shortening of chromosome-protecting telomeres in 9-year boys in unstable and stressful homes than in boys in advantaged homes.⁴⁵ The decreased length of telomeres is often considered to be a biomarker of chronic stress, and the connection between chronic stress and chronic health problems is well established. The risk that chronic illness will negatively impact a child's functioning may be exacerbated by exposure to domestic violence.⁴⁶ A secondary analysis of data from the National Survey of Child and Adolescent Well-Being⁴⁷ found that aggressive behavior problems in children were linked to the severity of abuse of women by a partner, through a path leading from the severity of assault to related impairment of maternal mental health. Impaired maternal mental health in turn was related to more aggressive child behavior, decreased maternal warmth, and increased child abuse. These findings suggest that severe abuse to the mother leads to an increase in child dysfunctional behaviors through impaired maternal mental health. Research documents that the dysfunctional behavior of the children of abused mothers is closely aligned with their mothers' functioning, which correlates with the frequency, severity, and type of abuse (i.e., physical, sexual) experienced by the mothers.² Clearly, if child safety, development, and functioning are to be promoted, mothers must be assessed at every child health care visit for abuse and the potential to pass the risk for dysfunctional behavior to their child. Implementing the use of the rapid assessment triage tools during clinical visits would be a first step in the assessment and intervention process to promote the positive development and behavioral functioning of children.

The Institute of Medicine stresses the importance of both screening for abuse and providing care.⁴⁸ The US Preventive Services Task Force recommends the routine screening of female patients for partner abuse and referral to intervention services.⁴⁹ This recommendation also applies to women with no signs or symptoms of abuse. Abuse screening is covered by the Affordable Care Act (ACA) and is available without charge if the patient is insured.⁵⁰ Child health care services provide an opportunity for screening mothers and assessing children at risk for behavioral disorders. Implementation of the rapid triage assessment tool can assist in streamlining a process for developing a plan of care for the mother-child

dyad that includes safety and also promotes positive child development and behavioral functioning based on risk factor assessment.

Limitations

Our methodology has limitations. Participants were limited to speakers of English or Spanish and may have underreported or minimized victimization or functioning status. Mothers may not be aware of certain aspects of their child's behavior or may not accurately recall the timing and type of the child's exposure to maternal abuse. We do not know if the child behaviors measured when mothers sought services for abuse were representative of child behaviors within the preceding 4 months, when 81% of the youth saw a health care provider. Despite these limitations, the researchers feel that the derived triage tools offer an evidence-based method with a high degree of predictability for the rapid assessment of child dysfunctional behavior when mothers report abuse during the preceding 4 months. It is important to consider that the predictor tools created from our data "fit" very well to our data. It is possible that with other samples, the exact measures, cutoffs, and percentage that is accurately predicted may be somewhat different. Of course, any tool developed will need further refinement and validation as it becomes more widely used.

Conclusions

Further research on testing the triage tool in pediatric care facilities with mothers who report recent partner abuse is needed for finer tool accuracy and predictability. However, we feel that the derived tools offer an evidence-based method with a high degree of predictability for the rapid assessment of dysfunctional behavior in children between 1 and 16 years of age when mothers report recent abuse. Abused women, health and service providers, and policy makers can use the tool to maximize the safety and well-being of children, initiate referrals and interventions, and potentially interrupt child behavioral dysfunctions.

Table 1. Descriptive Statistics and Bivariate Analysis

	Shelter Group									
	CBCL Internalizing					CBCL Externalizing				
	Normative ^a	Borderline/ Clinical ^a	<i>p</i>	Beta ^b	<i>p</i>	Normative ^a	Borderline/ Clinical ^a	<i>p</i>	Beta ^b	<i>p</i>
<i>Child variables</i>										
Child age, years	3.8 (2.6-7.7)	6.6 (3.8-10.6)	**	.322	***	5.2 (3.1-8.7)	5.6 (3.1-9.6)	–	.124	**
Child's gender: boy	30 (38%)	43 (61%)	**	.226	**	47 (48%)	32 (62%)	+	.037	–
Child heard verbal abuse:	24 (30%)	11 (16%)	*	.227	***	17 (17%)	7 (14%)	–	.182	**
Never										
1-10 times	31 (39%)	24 (34%)				48 (49%)	22 (42%)			
>10 times	24 (30%)	36 (51%)				33 (34%)	23 (44%)			
Child saw physical abuse:	41 (52%)	32 (45%)	–	.105	++	49 (50%)	21 (40%)	+	.211	**
Never										
1-10 times	30 (38%)	27 (38%)				41 (42%)	21 (40%)			
>10 times	8 (10%)	12 (17%)				8 (8%)	10 (19%)			
Child tried to stop abuse:	46 (58%)	34 (48%)	–	.123	*	61 (62%)	27 (52%)	–	.185	**
Never										
1-10 times	26 (33%)	26 (37%)				29 (30%)	21 (40%)			
>10 times	7 (9%)	11 (16%)				8 (8%)	4 (8%)			
Child has illness or disability	15 (19%)	22 (31%)	++	.139	++	14 (14%)	17 (33%)	**	.124	++
<i>Mother variables</i>										
White	11 (14%)	19 (27%)	++	.160	*	12 (14%)	18 (28%)	*	.168	*
Black	28 (35%)	19 (27%)	–	.093	+	29 (34%)	18 (28%)	–	.069	–
Hispanic	46 (58%)	45 (63%)	–	.053	–	52 (61%)	39 (60%)	–	.012	–
Mother education:	35 (44%)	25 (35%)	–	.093	+	36 (42%)	24 (37%)	–	.055	–
Some HS										
HS/GED	12 (15%)	12 (17%)				13 (15%)	11 (17%)			
Some college	32 (41%)	34 (48%)				36 (42%)	30 (46%)			
Months in relationship with abuser	48 (36-108)	72 (36-126)	++	.185	***	60 (36-108)	72 (36-120)	–	.177	***
Physical health ^c	3 (2-4)	4 (3-4)	++	.153	***	3 (2-4)	4 (3-4)	++	.229	***
Mental health ^c	3 (2.5-4)	4 (3-4.5)	**	.256	***	3 (2-4)	4 (3-4)	**	.330	***
PTSD symptomatology	5 (3.5-6)	6 (5-7)	***	.326	***	5 (3-7)	6 (5-7)	**	.263	***
Tangible support	3 (2.6-3.8)	3.2 (2.3-4)	–	.228	***	3.25 (2.7-4)	2.8 (2.3-3.5)	++	.257	***
Emotional support	3.5 (3.1-3.8)	3.5 (3-3.9)	–	.135	***	3.5 (3.1-3.9)	3.5 (3-3.8)	–	.173	***
Told support people about abuse	3.3 (2.2-4)	4 (2.5-4)	++	.331	***	3.7 (2.3-4)	4 (2.3-4)	–	.163	***

(continued)

Table 1. Descriptive Statistics and Bivariate Analysis (continued)

					DA Group						
					CBCL Internalizing		CBCL Externalizing				
<i>Child variables</i>											
Child age, years	5.8 (2.8-10.6)	7.5 (4.4-10.7)	+	.267	***	6.7 (3.7-10.9)	6.8 (3.3-9.6)	—	.109	**	
Child's gender: boy	47 (48%)	32 (62%)	+	.129	++	48 (46%)	31 (69%)	**	.213	**	
Child heard verbal abuse:	17 (17%)	7 (14%)	—	.105	++	20 (19%)	4 (9%)	—	.139		
Never											
1-10 times	48 (49%)	22 (42%)				49 (47%)	21 (47%)				
>10 times	33 (34%)	23 (44%)				36 (34%)	20 (44%)				
Child saw physical abuse:	49 (50%)	21 (40%)	+	.166	*	48 (46%)	22 (49%)	—	.138	*	
Never											
1-10 times	41 (42%)	21 (40%)				47 (45%)	15 (33%)				
>10 times	8 (8%)	10 (19%)				10 (10%)	8 (18%)				
Child tried to stop abuse:	61 (62%)	27 (52%)	—	.110	++	65 (62%)	23 (51%)	—	.102	+	
Never											
1-10 times	29 (30%)	21 (40%)				32 (31%)	18 (40%)				
>10 times	8 (8%)	4 (8%)				8 (8%)	4 (9%)				
Child has illness or disability	14 (14%)	17 (33%)	**	.216	**	16 (15%)	15 (33%)	*	.205	*	
<i>Mother variables</i>											
White	24 (25%)	12 (23%)	—	.016	—	25 (24%)	11 (24%)	—	.007	—	
Black	31 (32%)	10 (19%)	+	.132	++	30 (29%)	11 (24%)	—	.042	—	
Hispanic	54 (55%)	38 (73%)	*	.176	*	63 (60%)	29 (64%)	—	.042	—	
Mother education: Some HS	27 (28%)	14 (27%)	+	.183	***	32 (31%)	9 (20%)	*	.240	***	
HS/GED	23 (24%)	9 (17%)				26 (25%)	6 (13%)				
Some college	36 (37%)	27 (51.9%)				36 (34%)	27 (60%)				
College degree	12 (12%)	2 (3.8%)				11 (11%)	3 (7%)				
Months in relationship with abuser	60 (36-120)	84 (51-120)	++	.245	***	60 (36-120)	72 (48-108)	—	.171	***	
Physical health ^c	3 (2-4)	3 (3-4)	+	.138	***	3 (2-4)	3 (3-4)	+	.132	**	
Mental health ^c	3 (2-4)	4 (3-4)	**	.291	***	3 (2-4)	4 (3-4)	*	.247	***	
PTSD symptomatology	5 (3-6)	6 (5-7)	***	.381	***	5 (3-6)	6 (5-7)	*	.326	***	
Tangible support	3.5 (3-4)	3.5 (2.9-3.8)	—	.220	***	3.5 (2.8-4)	3.5 (3.2-3.8)	—	.240	***	
Emotional support	3.5 (3.2-3.8)	3.6 (3.2-3.8)	—	.193	***	3.5 (3.2-3.8)	3.7 (3.3-3.8)	—	.182	***	
Told support people about abuse	4 (3-4)	3.7 (2.7-4)	—	.101	*	4 (2.7-4)	3.7 (2.7-4)	—	.093	*	

Abbreviations: H.S. = high school; GED = General Educational Development test; PTSD = Post-traumatic stress disorder.

^aBivariate relationships were assessed linearly (using Mann-Whitney U tests due to non-normal distributions) for continuous variables (shown as median [interquartile range]). For categorical variables, bivariate relationships were assessed using crosstabs with χ^2 tests and are shown as n (%). ^bBetas are shown for simple categorical regression with non-monotonic cubic spline scaling with 3 interior knots for continuous variables and for categorical variables. ^cCompared with people of the same age. * $p < .20$, ** $p < .10$, * $p < .05$, ** $p < .05$, *** $p < .001$.

Table 2. Model Coefficients and Performance

	DA Group		Shelter Group	
	Externalizing Beta (SE) [‡]	Internalizing Beta (SE) [‡]	Externalizing Beta (SE) [‡]	Internalizing Beta (SE) [‡]
<i>Child variables</i>				
Child heard verbal abuse	—	—	—	.16 (.07)*
Child saw physical abuse	—	.16 (.07)**	.19 (.08)**	—
Child has illness or disability	.17 (.08)*	.17 (.08)*	—	—
Child's gender: boy	.17 (.08)*	—	—	.16 (.08) [†]
Child's age, y	.13 (.07)*	.21 (.07)***	—	.23 (.08)***
<i>Mother variables</i>				
Spanish/Hispanic ethnicity	—	.16 (.08)*	—	—
Mother education	.17 (.07)**	.07 (.06)	—	—
Months in relationship with abuser	—	.17 (.07)**	.13 (.07)*	.13 (.07)**
Physical health compared with other people same age	—	—	.17 (.08)**	—
Mental health compared with other people same age	.19 (.07)***	.21 (.07)***	.20 (.08)***	.18 (.07)***
PTSD symptomatology	.24 (.08)***	.36 (.08)***	.21 (.08)***	.21 (.08)**
Tangible support	—	.20 (.07)***	.20 (.08)**	—
Emotional support	.14 (.07)**	.26 (.08)***	.14 (.07)**	—
Told support people about abuse	—	—	—	.19 (.07)***
<i>F</i>	2.17**	3.30***	1.84*	2.26**
<i>R</i> ²	.24	.42	.26	.29
Adjusted <i>R</i> ²	.13	.30	.12	.16
Hosmer-Lemeshow χ^2 (<i>p</i>)	12.82 (.118)	6.33 (.610)	10.24 (.249)	16.27 (.039)
AUC (95% CI)	.80 (.73, .88)	.90 (.85, .95)	.81 (.74, .88)	.81 (.74, .88)
Bootstrap AUC (95% CI) [†]	.80 (.73, .87)	.89 (.84, .97)	.80 (.73, .87)	.81 (.73, .87)

Abbreviations: DA, district attorney; SE, standard error of the mean; PTSD, post-traumatic stress disorder; AUC, area under the curve; CI, confidence interval.

[‡] Coefficients are standardized estimate of SE (bootstrap 1000).

[†] Bootstrap sample = 2000, random seed, web program developed by Skalská and Freylich.²¹

p* < .10, *p* < .05, ****p* < .01, *****p* < .001.

Table 3. Risk Stratification Table Assessing Models by Predicted Probabilities of Clinical Outcomes in Children

Predicted Probabilities, %	Children, n (%)	Children in Clinical Range, n (%)	Children in Normative Range, n (%)	Sensitivity, % (LR+)	Specificity, % (LR-)
Shelter Externalizing					
<10	19 (12.7)	0 (0.0)	19 (100)	–	–
10-25	28 (18.7)	6 (21.4)	22 (78.6)	100.0 (1.3)	21.2 (0.0)
26-50	40 (26.7)	16 (40.0)	24 (60.0)	90.8 (1.6)	44.7 (0.2)
50-75	40 (26.7)	24 (60.0)	16 (40.0)	61.5 (2.6)	76.5 (0.5)
>75	23 (15.3)	19 (82.6)	4 (17.4)	26.2 (5.6)	95.3 (0.8)
Shelter Internalizing					
<10	17 (11.3)	0 (0.0)	17 (100.0)	–	–
10-25	27 (18.0)	2 (11.1)	24 (88.9)	100.0 (1.3)	21.5 (0.0)
26-50	41 (27.3)	19 (46.3)	22 (53.7)	95.8 (2.0)	51.9 (0.1)
50-75	37 (24.7)	26 (70.3)	11 (29.7)	69.0 (3.4)	79.8 (1.4)
>75	28 (18.7)	23 (82.1)	5 (17.9)	32.4 (5.1)	93.7 (1.7)
DA Externalizing					
<10	35 (23.3)	2 (5.7)	33 (94.3)	–	–
10-25	42 (28.0)	8 (19.0)	34 (81.0)	95.6 (1.4)	31.4 (0.1)
26-50	42 (28.0)	15 (35.7)	27 (64.3)	77.8 (2.2)	63.8 (0.4)
50-75	24 (16.0)	13 (54.2)	11 (45.8)	44.4 (4.2)	89.5 (0.6)
>75	7 (4.7)	7 (100.0)	0 (0.0)	15.6 (–)	100.0 (0.8)
DA Internalizing					
<10	55 (36.7)	3 (5.5)	52 (94.5)	–	–
10-25	27 (18.0)	4 (14.8)	23 (85.2)	94.2 (2.0)	53.1 (0.1)
26-50	23 (15.3)	8 (34.8)	15 (65.2)	86.5 (3.7)	76.5 (0.2)
50-75	16 (10.7)	10 (62.5)	6 (37.5)	71.2 (8.7)	91.8 (0.3)
>75	29 (19.3)	27 (93.1)	2 (6.9)	51.9 (25.4)	98.0 (0.5)

Abbreviations: LR+, positive likelihood ratio; LR–, negative likelihood ratio; DA, district attorney.

For items 1-5, check the box next to the response given. Then circle the corresponding points assigned.

		Points	Points from box on left				
1. WHAT IS YOUR HIGHEST LEVEL OF EDUCATION?	Less than HS <input type="checkbox"/>	86					
	HS/GED <input type="checkbox"/>	82					
	Some College <input type="checkbox"/>	120					
	College Degree <input type="checkbox"/>	93					
2. DOES YOUR CHILD HAVE AN ILLNESS OR DISABILITY?	No <input type="checkbox"/>	91					
	Yes <input type="checkbox"/>	134					
3. CHILD GENDER	F <input type="checkbox"/>	83					
	M <input type="checkbox"/>	116					
4. CHILD AGE (YEARS)	1 - 2 yrs <input type="checkbox"/>	85					
	3 - 6 yrs <input type="checkbox"/>	114					
	7 - 10 yrs <input type="checkbox"/>	106					
	11 - 16 yrs <input type="checkbox"/>	87					
5. DURING THE LAST 4 MONTHS, COMPARED TO OTHER PEOPLE YOUR OWN AGE, YOUR MENTAL HEALTH IS?	Excellent <input type="checkbox"/>	62					
	Very Good <input type="checkbox"/>	113					
	Good <input type="checkbox"/>	117					
	Only Fair <input type="checkbox"/>	93					
	Poor <input type="checkbox"/>	116					
6. PTSD – Please tell me ways the abuse may have affected you during the last 4 months.			No = 0; Yes = 1				
a. Have you made a special effort to avoid thinking or talking about what happened?							
b. Have you been much less interested in doing things that were important to you, such as seeing friends, reading books, or watching TV?							
c. Have you felt distant or cut off from others?							
d. Have you felt "numb" or as if you no longer had strong feelings about anything or loving feelings for anyone?							
e. Did you notice a change in the way you think about or plan for the future?							
f. Have you had trouble falling or staying asleep?							
g. Have you been jumpy or easily startled, such as by sudden noises?							
Total Score (sum a through g):							
0-3 Total Score = 55 pts 4-5 Total Score = 99 pts		Points from box on left:					
6 Total Score = 122 pts 7 Total Score = 113 pts							
For item 7, circle the response given. Then enter the numeric value of the response given. Sum the numeric values below then divide by 12. Locate the average sum and put the points assigned in the blank box.							
7. SOCIAL SUPPORT – Thinking of three people who have helped you the most during the last four months...	NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	A LOT	Numeric value of response	
	a. How much does (Person 1) make you feel liked or loved?	0	1	2	3		4
	b. Second person?	0	1	2	3		4
	c. Third person?	0	1	2	3		4
	d. How much does (Person 1) make you feel respected?	0	1	2	3		4
	e. Second person?	0	1	2	3		4
	f. Third person?	0	1	2	3		4
	g. How much can you confide in (Person 1)?	0	1	2	3		4
	h. Second person?	0	1	2	3		4
	i. Third person?	0	1	2	3		4
	j. How much does (Person 1) agree with you?	0	1	2	3		4
	k. Second person?	0	1	2	3		4
	l. Third person?	0	1	2	3		4
Sum of Responses (Total Score):							
Total Score DIVIDED BY 12 (Average Score):							
0-3 Avg Score = 87 pts 3.01-3.4 Avg Score = 85 pts 3.41-3.67 Avg Score = 96 pts 3.68-3.84 Avg Score = 115 pts 3.85-4 Avg Score = 118 pts					Points from box on left:		

Sum all gray boxes above to get the WEIGHTED TOTAL	Weighted Total	Interpretation	Recommendation
	663 or Less	No/Minimal Risk (<10%)	Ongoing Screening
	664 - 703	Low/Some Risk (11-25%)	
	704 - 741	Moderate Risk (26-50%)	
	742 - 780	High Risk (51-75%)	Referral for Services
	781 or More	Extreme Risk (>75%)	

Figure 1. Externalizing Behavior Tool for DA Group

For items 1-7, check the box next to the response given. Then circle the corresponding points assigned.		Points	Points from box on left			
1. WHAT IS YOUR HIGHEST LEVEL OF EDUCATION?	Less than HS	<input type="checkbox"/>	97			
	HS/GED	<input type="checkbox"/>	105			
	Some College	<input type="checkbox"/>	104			
	College Degree	<input type="checkbox"/>	80			
2. DURING THE LAST 4 MONTHS, HOW MANY TIMES HAS YOUR CHILD WITNESSED PHYSICAL ABUSE?	Never	<input type="checkbox"/>	103			
	1 - 10 Times	<input type="checkbox"/>	86			
	10 + Times	<input type="checkbox"/>	137			
3. DOES YOUR CHILD HAVE AN ILLNESS OR DISABILITY?	No	<input type="checkbox"/>	92			
	Yes	<input type="checkbox"/>	133			
4. ARE YOU SPANISH OR HISPANIC?	No	<input type="checkbox"/>	80			
	Yes	<input type="checkbox"/>	113			
5. CHILD AGE (YEARS)	1 - 2 yrs	<input type="checkbox"/>	61			
	3 - 6 yrs	<input type="checkbox"/>	112			
	7 - 10 yrs	<input type="checkbox"/>	119			
	11 - 16 yrs	<input type="checkbox"/>	94			
6. HOW LONG WERE YOU IN A RELATIONSHIP WITH THE ABUSER (YEARS)?	Up to 3 years	<input type="checkbox"/>	77			
	3 to < 5 years	<input type="checkbox"/>	98			
	5 to < 10 years	<input type="checkbox"/>	125			
	10 or more years	<input type="checkbox"/>	103			
7. DURING THE LAST 4 MONTHS, COMPARED TO OTHER PEOPLE YOUR OWN AGE, YOUR MENTAL HEALTH IS?	Excellent	<input type="checkbox"/>	54			
	Very Good	<input type="checkbox"/>	109			
	Good	<input type="checkbox"/>	118			
	Only Fair	<input type="checkbox"/>	106			
	Poor	<input type="checkbox"/>	84			
8. PTSD -- Please tell me ways the abuse may have affected you during the last 4 months.			No = 0; Yes = 1			
a. Have you made a special effort to avoid thinking or talking about what happened?						
b. Have you been much less interested in doing things that were important to you, such as seeing friends, reading books, or watching TV?						
c. Have you felt distant or cut off from others?						
d. Have you felt "numb" or as if you no longer had strong feelings about anything or loving feelings for anyone?						
e. Did you notice a change in the way you think about or plan for the future?						
f. Have you had trouble falling or staying asleep?						
g. Have you been jumpy or easily startled, such as by sudden noises?						
Total Score (sum A through G):						
0-3 Total Score = 39 pts 4-5 Total Score = 86 pts 6 Total Score = 128 pts 7 Total Score = 135 pts			Points from box on left:			
For items 9 and 10, circle the response given. Then enter the numeric value of the response given. Sum the numeric values below then divide by the total number of items. Locate the average score and put the points assigned in the gray box.						
9. SOCIAL SUPPORT -- Thinking of three people who have helped you the most during the last four months...						
	NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	A LOT	Numeric value of response
a. If you needed to borrow \$10, a ride to the doctor, or other immediate help, how much could (First person) help	0	1	2	3	4	
b. Second person?	0	1	2	3	4	
c. Third person?	0	1	2	3	4	
d. If you were confined to bed for several weeks, how much could (First person) help you?	0	1	2	3	4	
e. Second person?	0	1	2	3	4	
f. Third person?	0	1	2	3	4	
Sum of Responses A through F (Total Score):						
Total Score DIVIDED BY 6 (Average Score):						
0-2.99 Avg Score = 107 pts 3-3.49 Avg Score = 75 pts						
3.5-3.99 Avg Score = 127 pts 4 Avg Score = 84 pts						Points from box on left:
10. SOCIAL SUPPORT -- Thinking of three people who have helped you the most during the last four months...						
	NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	A LOT	Numeric value of response
a. How much does (Person 1) make you feel liked or loved?	0	1	2	3	4	
b. Second person?	0	1	2	3	4	
c. Third person?	0	1	2	3	4	
d. How much does (Person 1) make you feel respected?	0	1	2	3	4	
e. Second person?	0	1	2	3	4	
f. Third person?	0	1	2	3	4	
g. How much can you confide in (Person 1)?	0	1	2	3	4	
h. Second person?	0	1	2	3	4	
i. Third person?	0	1	2	3	4	
j. How much does (Person 1) agree with you?	0	1	2	3	4	
k. Second person?	0	1	2	3	4	
l. Third person?	0	1	2	3	4	
Sum of Responses A through L (Total Score):						
Total Score DIVIDED BY 12 (Average Score):						
0-3.40 Avg Score = 50 pts 3.41-3.67 Avg Score = 118 pts						
3.68-3.84 Avg Score = 127 pts 3.85-4 Avg Score = 107 pts						Points from box on left:
Sum all gray boxes above to get the WEIGHTED TOTAL		Weighted Total	Interpretation	Recommendation		
		977 or Less	No/Minimal Risk (<10%)	Ongoing Screening		
		977 - 1005	Low/Some Risk (11-25%)	Referral for Services		
		1006 - 1033	Moderate Risk (26-50%)			
		1034 - 1075	High Risk (51-75%)			
		1076 or More	Extreme Risk (>75%)			

Figure 2. Internalizing Behavior Tool for DA Group

For items 1-5, check the box next to the response given. Then circle the corresponding points assigned.		Points	Points from box on left					
1. DURING THE LAST 4 MONTHS, HOW MANY TIMES HAS YOUR CHILD WITNESSED PHYSICAL ABUSE?	Never <input type="checkbox"/>	93						
	1 -10 Times <input type="checkbox"/>	92						
	10 + Times <input type="checkbox"/>	149						
2. HOW LONG WERE YOU IN A RELATIONSHIP WITH THE ABUSER (MONTHS)?	2 - 40 months <input type="checkbox"/>	111						
	41 - 71 months <input type="checkbox"/>	79						
	72 - 119 months <input type="checkbox"/>	106						
	120 + months <input type="checkbox"/>	103						
3. DURING THE LAST 4 MONTHS, COMPARED TO OTHER PEOPLE YOUR OWN AGE, YOUR PHYSICAL HEALTH IS?	Excellent <input type="checkbox"/>	68						
	Very Good <input type="checkbox"/>	47						
	Good <input type="checkbox"/>	111						
	Only Fair <input type="checkbox"/>	107						
	Poor <input type="checkbox"/>	108						
4. DURING THE LAST 4 MONTHS, COMPARED TO OTHER PEOPLE YOUR OWN AGE, YOUR MENTAL HEALTH IS?	Excellent <input type="checkbox"/>	68						
	Very Good <input type="checkbox"/>	47						
	Good <input type="checkbox"/>	111						
	Only Fair <input type="checkbox"/>	107						
	Poor <input type="checkbox"/>	108						
5. PTSD – Please tell me ways the abuse may have affected you during the last 4 months.			No = 0; Yes = 1					
a. Have you made a special effort to avoid thinking or talking about what happened?								
b. Have you been much less interested in doing things that were important to you, such as seeing friends, reading books, or watching TV?								
c. Have you felt distant or cut off from others?								
d. Have you felt "numb" or as if you no longer had strong feelings about anything or loving feelings for anyone?								
e. Did you notice a change in the way you think about or plan for the future?								
f. Have you had trouble falling or staying asleep?								
g. Have you been jumpy or easily startled, such as by sudden noises?								
Total Score (sum A through G):								
0-3 Total Score = 68 pts 4 Total Score = 133 pts			Points from box on left:					
5 Total Score = 83 pts 6 Total Score = 97 pts 7 Total Score = 116 pts								
For items 6 and 7, circle the response given. Then enter the numeric value of the response given. Sum the numeric values below then divide by the total number of items. Locate the average score and put the points assigned in the gray box.								
6. SOCIAL SUPPORT – Thinking of three people who have helped you the most during the last four months...		NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	A LOT	Numeric value of response	
	a. If you needed to borrow \$10, a ride to the doctor, or other immediate help, how much could (First person) help you?	0	1	2	3	4		
	b. Second person?	0	1	2	3	4		
	c. Third person?	0	1	2	3	4		
	d. If you were confined to bed for several weeks, how much could (First person) help you?	0	1	2	3	4		
	e. Second person?	0	1	2	3	4		
	f. Third person?	0	1	2	3	4		
	Sum of Responses A through F (Total Score):							
	Total Score DIVIDED BY 6 (Average Score):							
	0-1.99 Avg Score = 112 pts 2-2.99 Avg Score = 124 pts						Points from box on left:	
	3-3.5 Avg Score = 90 pts 3.51-4 Avg Score = 72 pts							
	7. SOCIAL SUPPORT – Thinking of three people who have helped you the most during the last four months...		NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	A LOT	Numeric value of response
		a. How much does (Person 1) make you feel liked or loved?	0	1	2	3	4	
b. Second person?		0	1	2	3	4		
c. Third person?		0	1	2	3	4		
d. How much does (Person 1) make you feel respected?		0	1	2	3	4		
e. Second person?		0	1	2	3	4		
f. Third person?		0	1	2	3	4		
g. How much can you confide in (Person 1)?		0	1	2	3	4		
h. Second person?		0	1	2	3	4		
i. Third person?		0	1	2	3	4		
j. How much does (Person 1) agree with you?		0	1	2	3	4		
k. Second person?		0	1	2	3	4		
l. Third person?		0	1	2	3	4		
Sum of Responses A through L (Total Score):								
Total Score DIVIDED BY 12 (Average Score):								
0-2.5 Avg Score = 86 pts 2.51-3.25 Avg Score = 105 pts						Points from box on left:		
3.26-3.5 Avg Score = 115 pts 3.51-3.9 Avg Score = 81 pts 3.91-4 Avg Score = 111 pts								
Sum all gray boxes above to get the WEIGHTED TOTAL	Weighted Total		Interpretation		Recommendation			
	636 or Less		No/Minimal Risk (<10%)		Ongoing			
	637 - 676		Low/Some Risk (11-25%)		Screening			
	677 - 714		Moderate Risk (26-50%)		Referral for			
	715 - 755		High Risk (51-75%)		Services			
756 or more		Extreme Risk (>75%)						

Figure 3. Externalizing Behavior Tool for Shelter Group

For items 1-5, check the box next to the response given.
Then circle the corresponding points assigned.

		Points	Points from box on left
1. DURING THE LAST 4 MONTHS, HOW MANY TIMES HAS YOUR CHILD HEARD VERBAL ABUSE?	Never <input type="checkbox"/>	72	
	1 -10 Times <input type="checkbox"/>	107	
	10 + Times <input type="checkbox"/>	110	
2. CHILD GENDER	Female <input type="checkbox"/>	84	
	Male <input type="checkbox"/>	117	
3. CHILD AGE (YEARS)	1 - 2 years <input type="checkbox"/>	62	
	3 years <input type="checkbox"/>	92	
	4 years <input type="checkbox"/>	116	
	5 - 7 years <input type="checkbox"/>	123	
	8 - 10 years <input type="checkbox"/>	114	
	11 - 15 years <input type="checkbox"/>	113	
4. HOW LONG WERE YOU IN A RELATIONSHIP WITH THE ABUSER (MONTHS)?	2 - 29 months <input type="checkbox"/>	93	
	30 - 47 months <input type="checkbox"/>	116	
	48 - 71 months <input type="checkbox"/>	92	
	72 - 107 months <input type="checkbox"/>	121	
	108 - 155 months <input type="checkbox"/>	85	
	156+ months <input type="checkbox"/>	100	
5. DURING THE LAST 4 MONTHS, COMPARED TO OTHER PEOPLE YOUR OWN AGE, YOUR MENTAL HEALTH IS?	Excellent <input type="checkbox"/>	79	
	Very Good <input type="checkbox"/>	52	
	Good <input type="checkbox"/>	103	
	Only Fair <input type="checkbox"/>	120	
	Poor <input type="checkbox"/>	98	
6. PTSD – Please tell me ways the abuse may have affected you during the last 4 months.			No = 0; Yes = 1
a. Have you made a special effort to avoid thinking or talking about what happened?			
b. Have you been much less interested in doing things that were important to you, such as seeing friends, reading books, or watching TV?			
c. Have you felt distant or cut off from others?			
d. Have you felt "numb" or as if you no longer had strong feelings about anything or loving feelings for anyone?			
e. Did you notice a change in the way you think about or plan for the future?			
f. Have you had trouble falling or staying asleep?			
g. Have you been jumpy or easily startled, such as by sudden noises?			
Total Score (sum A through G):			
0-4 Total Score = 91 pts 5 Total Score = 66 pts 6 Total Score = 97 pts 7 Total Score = 126 pts			Points from box on left:

For item 7, circle the response given. Then enter the numeric value of the response given. Sum the numeric values below then divide by 3. Locate the average score and put the points assigned in the gray box.

	NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	A LOT	Numeric value of response
7. SOCIAL SUPPORT – Thinking of three people who have helped you the most during the last four months...						
a. Have you shared the abuse with (First Person)?	0	1	2	3	4	
b. Second person?	0	1	2	3	4	
c. Third person?	0	1	2	3	4	
Sum of Responses A through C (Total Score):						
Total Score DIVIDED BY 3 (Average Score):						
0-1 Total Score = 114 pts 1.01-3 Total Score = 84 pts 3.01-3.99 Total Score = 42 pts 4 Total Score = 110 pts						Points from box on left:

Sum all gray boxes above to get the WEIGHTED TOTAL	Weighted Total	Interpretation	Recommendation
	627 or Less	No/Minimal Risk (<10%)	Ongoing Screening
	628 - 669	Low/Some Risk (11-25%)	
	670 - 708	Moderate Risk (26-50%)	Referral for Services
	709 - 748	High Risk (51-75%)	
	749 or more	Extreme Risk (>75%)	

Figure 4. Internalizing Behavior Tool for Shelter Group

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