

# Child abuse experiences in adolescents with externalizing disorders

Rania H. El-Baz, Warda F. Abo-El-Ezz, Mohammed A.E. El-Hadidy, Hala A. El-Boraie

Department of Psychiatry, Faculty of Medicine, Mansoura University, Mansoura, Egypt

Correspondence to Hala A. El-Boraie, MD, Department of Psychiatry, Faculty of Medicine, Mansoura University, Mansoura, Egypt  
e-mail: halaboraie@yahoo.com

Received 27 April 2015

Accepted 02 August 2015

Egyptian Journal of Psychiatry

2016, 37:46–52

## Objectives

The purpose of this study was to explore the effect of experiencing childhood abuse on externalizing disorders in a sample of adolescents from Mansoura Adolescents Unit.

## Patients and methods

A total of 300 adolescents were included in the study; of them 100 were diagnosed as having externalizing disorders, whereas the other 200 were control adolescents from the outpatient clinic of Dermatology Department and Pediatric Hospital of Mansoura University. The Mini International Neuropsychiatric Interview for Children and Adolescents was used for diagnosis, and a questionnaire on child abuse experiences was administered for assessment of parental abuse (physical and psychological) and sexual abuse. Finally, the modified Global assessment of functioning scale was used to assess the outcome of externalizing disorders.

## Results

Paternal psychological abuse is significantly associated with attention deficit hyperactivity disorder (combined type), conduct disorder (CD), and substance use disorders (SUDs), whereas paternal physical abuse is significantly associated with CD and SUDs. Maternal physical abuse is associated with CD and oppositional defiant disorder, whereas maternal psychological abuse and sexual abuse are significantly associated with CD and SUDs. Therefore, paternal physical abuse is considered the only predictor of externalizing disorders.

## Conclusion

This study has implications for the assessment of effect of childhood abuse on externalizing disorders during adolescence. Children physically abused, especially by the father in the sample, appeared to be at a greater risk for externalizing disorders. However, all types of child abuse were associated with externalizing disorders.

## Keywords:

adolescents, child abuse, child maltreatment, externalizing disorders

Egypt J Psychiatr 37:46–52  
© 2016 Egyptian Journal of Psychiatry  
1110-1105

## Introduction

Adolescence is the period during which there is an increased risk for several mental health problems. The extensive work of McConaughy *et al.* (1992) has led to the widely accepted differentiation between internalizing and externalizing problems of adolescents. Their classification categorized these behaviors into two broad dimensions: internalizing (overcontrolled) and externalizing (undercontrolled) behaviors (Nezhad *et al.*, 2011). Externalizing disorders are generally disruptive, overt, and attention getting (Brook *et al.*, 2012) and include attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder (ODD), conduct disorder (CD), and substance use disorders (SUDs). In Egypt, behavior disorders represented 8.2% (in 1990) of diagnoses in all children attending the outpatient clinic of Ain Shams University Hospitals (Okasha, 1993). Child abuse is a major public health problem with a lifelong adverse effect on victims if there is no proper treatment. It is defined as any act(s) or failure of act(s)

by parent or caregiver that results in actual or potential harm to a child's health or development, including neglect and physical, psychological, and sexual abuse (World Health Organization, 2014). Modern studies explain how child abuse interacts with genes and environmental factors to affect the developing brain and neuronal network (Hart and Rubia, 2012; Bair-Merritt *et al.*, 2013).

A report published by UNICEF on studies conducted on child abuse in the Egyptian society revealed that 81% of children have been corporally punished at home and 91% corporally punished during the same period in schools (UNICEF, 2008). Multiple factors affect the impact of child maltreatment on victims; sex is one of the important factors (Evans *et al.*, 2008). Generally, male patients report more physical abuse compared with female patients (5–54 vs. 4–42%) (MacMillan *et al.*, 2013), and female patients report more sexual abuse compared with male patients (16–22 vs. 4–11%) (Pereda *et al.*, 2014). In addition, sex affects the level and type of impairment, as female adolescents are more

prone to suffer from post-traumatic stress disorder, suicide (Thompson *et al.*, 2004), depression (Moylan *et al.*, 2010), and cardiovascular disease (Scott-Storey, 2013). The effect of cultural factors on the prevalence of child abuse is hard to determine due to variability in defining child maltreatment across countries (Al-Eissa *et al.*, 2014). In general, Africa is considered to have the highest prevalence rate for all forms of child abuse, except for neglect, because of lacking data, whereas Asia has the lowest rate of sexual abuse (Stoltenborgh *et al.*, 2013).

Victims of childhood maltreatment are at increased risk for a wide range of externalizing problems (Pears *et al.*, 2008) such as ADHD (Cohen *et al.*, 2001), CD (Murray and Farrington, 2010), ODD (Cohen *et al.*, 2001), delinquency (Williams *et al.*, 2010), and antisocial behavior (Jonson-Reid *et al.*, 2010).

### Rationale of the study

The need for this study stems from many observations. The first is that the Egyptian adolescent population is huge and constitutes nearly 40% of the Egyptian population (Central Agency for Public Mobilization and Statistics, 1992). Second, although extensive research has been conducted in the USA, less is known about adolescent mental health and its key correlates in developing nations, such as in our country Egypt. Third, studies on risk factors, such as child abuse, for psychiatric disorders in adolescents are given little attention.

### Patients and methods

The study was conducted at the outpatient clinic of Adolescent Unit of Psychiatry Department in Mansoura University Hospital, which serves Dakahlia Governorate and surrounding areas. It took place during the period from November 2012 to March 2014. This was a case-control cross-sectional study. Written informed consent was obtained from the adolescents and their parents. Adolescents were informed about the objectives of the study and they had the right to refuse to participate. The study included two groups: the patient group included 100 adolescents, whereas the control group included 200 adolescents from the outpatient clinic of Dermatology Department and Pediatric Hospital, Mansoura University Hospital. The research was approved by the research and ethics committee.

#### Inclusion criteria for the patient group

Adolescents from the outpatient clinic diagnosed as having one of the externalizing disorders (ADHD, CD,

ODD, and SUDs) based on *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., text revision (DSM-IV-TR) (American Psychiatric Association, 2000), those between 10 and 19 years of age, having IQ more than 80, and of both sexes were included in the study.

#### Exclusion criteria

Exclusion criteria were as follows: participants with IQ scores below 80 (because they were uncooperative and unable to complete some tools), presence of severe neurological disabilities, those who were illiterate, and those who refused to join the study.

#### Inclusion criteria for the control group

Individuals with acute and short-term medical illness that did not interfere with the psychological state, those with no history of psychiatric or neurological disorders, and of both sexes with age range of 10–19 years, similar to that of the patient group, were included in the study and were subjected to the same scales and tools as the patient group.

#### Measurements

- (1) Clinical assessment was carried out with a semistructured psychiatric interview based on the psychiatric sheet for children and adolescents of Mansoura University Hospital and then Mini International Neuropsychiatric Interview for Children and Adolescents was used (Sheehan *et al.*, 1998). It screens for 17 axis I disorders. The Arabic version of Mini International Neuropsychiatric Interview for Children and Adolescents was used (Ghanem *et al.*, 2000).
- (2) The Arabic version of the Wechsler Intelligence Scale for Children was used (Ismael and Malekal, 1993) to assess IQ. It is a battery comprising 11 subtests – each is scored individually – which is divided into two parts: the Verbal Scale Subtest for verbal IQ and the Performance Scale Subtests for performance IQ. The scores of both yield the average index of general intellectual functioning.
- (3) Assessment of childhood maltreatment was conducted using the questionnaire of child abuse experiences during childhood (Arabic version) (Mukheimer and Razeq, 2004). It is a self-administered questionnaire comprising 32 items about the father and the same for the mother; both include 16 items for physical abuse and 16 items for psychological abuse, and separate 10 items for sexual abuse. The items are scored as follows: always true = 4; sometimes true = 3; rarely true = 2; almost never true = 1.

- (4) For measuring the outcome of externalizing disorders, the modified Global assessment (mGAF) (Smith *et al.*, 2011) of functioning scale was used. Therefore, this scale gives a more detailed criteria and scoring system (0–90). Lower scores indicate severe impairment and a midrange score of 50 represents ‘serious symptoms’ or ‘serious impairment in social, occupational, or school functioning’.
- (5) Income was measured with the average annual Egyptian household income, according to the Central Agency for Public Mobilization and Statistics (2012).

**Statistical analysis**

The collected data were computed and analyzed using Microsoft excel program and statistical package for social science program, version 22 (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. IBM Corp, Armonk, NY). The results were tabulated, grouped, statistically analyzed, and described using descriptive and analytical statistics using the following tests:

- (a) mean and SD (1 ± SD) was used for continues variables;
- (b) absolute and relative frequencies for quantitative variables;
- (c) one-way analysis of variance test was used when comparing the several means to determine the interaction of several independent variables with each other and the effect on a dependent variable. The Bonferroni post-hoc test method is used for performing multiple comparisons and for controlling the pairwise error rate;
- (d) Pearson’s correlation coefficient was used to correlate variables with each others; and
- (e) multiple linear regression (multivariable linear regression) was carried out to study the relationship between a dependent variable and one or more explanatory variables (or independent variable).

**Results**

In this study, the mean age of the cases with externalizing disorders (*n* = 100) was 13.79 ± 3.10 years and that of controls (*n* = 200) was 15.28 ± 2.38 years. In the patient group, the percentage of male patients (*n* = 84) was 84% [odds ratio (OR) = 1.85, 95% confidence interval (CI) = 1.551–2.197] and that of female patients (*n* = 16) was 16% (OR = 0.249, 95% CI = 0.184–0.468), whereas in the control group the percentage of male participants (*n* = 91) was 45.5% and that of female participants (*n* = 109) was 54.5%, as the male population was 1.85 times more prone to externalizing disorders compared with the female population. Our study declared that

26% of externalizing disorders were from urban areas, whereas 74% were from rural areas. In the control group 53.5% of them were from urban areas and 46.5% were from rural areas (Table 1).

The most prevalent diagnoses of the externalizing disorder group were ADHD-combined type (30%), CD (23%), SUDs (20%), and ADHD-inattentive type (10%). Further, 13% of cases showed comorbidity of externalizing disorders (7% ADHD-combined type comorbid with CD, 4% ADHD-inattentive type comorbid with CD and 2% CD comorbid with SUDs) (Table 2).

**Table 1 Sociodemographic data of the whole sample**

Sociodemographic data	Patient group (N = 100) [n (%)]	Control group (N = 200) [n (%)]	P value
Age (mean ± SD) (years)	13.79 ± 3.10	15.28 ± 2.38	<0.00004***
10–13	53 (53)	54 (27)	
14–16	26 (26)	80 (40)	
17–19	21 (21)	66 (33)	
Sex			
Male	84 (84)	91 (45.5)	<0.00003***
Female	16 (16)	109 (54.5)	
Residence			
Urban	26 (26)	107 (53.5)	<0.00003***
Rural	74 (74)	93 (46.5)	
Education			
Primary	37 (37)	18 (9)	
Preparatory	21 (21)	63 (31.5)	
Secondary/vocational school	38 (38)	107 (53.5)	
First year of university	4 (4)	12 (6)	
Income/year (mean)	17 484	25 596	<0.0006***
<10 000	39 (39)	29 (14.5)	
10 000–<20 000	33 (33)	68 (34)	
20 000–<30 000	13 (13)	38 (19)	
30 000–<50 000	7 (7)	51 (25.5)	
≥50 000	8 (8)	14 (7)	
Modified Global assessment (mean ± SD)	46.94 ± 5.517	85.18 ± 2.648	<0.00001***

\*\*\*P < 0.001.

**Table 2 Externalizing disorders in the patient group**

Externalizing disorders	Frequency (n = 100) [n (%)]
ADHD	30 (30)
AD	10 (12)
SUD	20 (20)
Conduct disorder	23 (23)
ODD	4 (4)
Conduct with AD	4 (4)
Conduct with SUD	2 (2)
ADHD with conduct disorder	7 (7)

ADHD, attention deficit hyperactivity disorder; ODD, oppositional defiant disorder; SUD, substance use disorder.

On using the analysis of variance test for comparing the means of child abuse experiences in different diagnoses in the patient group, we found that ADHD (combined type) is significantly associated with paternal psychological and physical abuse. However, CD is significantly associated with all types of child abuse experiences, paternal psychological and physical abuse, maternal psychological and physical abuse, and sexual abuse. However, SUDs are significantly associated with paternal physical and psychological abuse, maternal psychological abuse, and sexual abuse. In contrast, ODD is associated only with maternal physical abuse, and ADHD-inattentive type is not significantly associated with any type of child abuse (Table 3).

A correlational analysis was performed between the explanatory variables and dependent variables (Table 4). All measured child abuse types are positively and significantly intercorrelated with each other, whereas they all negatively and significantly correlated with mGAF of externalizing disorders, except maternal physical abuse.

Multiple regression analysis was performed to explore childhood maltreatment as a risk factor associated with externalizing disorders. In the analysis,  $F(1,94) = 13.389$  with  $P < 0.001$  which indicates a significant effect of paternal physical abuse on the outcome of externalizing disorders (mGAF) ( $b = 0.353, P < 0.001$ ), whereas other types of child maltreatment revealed no significant effect on externalizing disorders (Table 5).

## Discussion

In the current study, we adopted the hypothesis that there is an association between externalizing problems

in adolescents and experiences of childhood abuse. An adolescent's experience of childhood abuse is an important factor that affects psychological and mental health. Child abuse or maltreatment, including physical, sexual, and psychological abuse, which may be due to watching violence between parents and multiple forms of neglect such as low parental supervision or lack of appropriate monitoring (UNICEF, 2008).

In this study, there is a significant difference between the age of the externalizing disorder group ( $13.79 \pm 3.10, P < 0.001$ ) and the control group ( $15.28 \pm 2.38, P < 0.001$ ). Externalizing disorders are more common during young age, because youngsters have a greater tendency to express their emotions and react to stresses through greater impulsivity and misbehavior. The male population was 1.85 times more prone to externalizing disorders compared with the female population (OR = 1.85, 95% CI = 1.551–2.197,  $P < 0.001$ ). In the sample, the ratio of boys-to-girls was 4 : 1 for risk of externalizing disorders. This may be attributed to the fact that boys mature more slowly compared with girls and are more likely to have difficulty regulating their thoughts, feelings, and impulses, and tend to express their emotions externally that makes them more likely to have externalizing disorders.

Similar to the results reported in this study, various researchers (Prinz *et al.*, 2006; Burt *et al.*, 2009) have suggested that boys present more externalizing problems compared with girls. Studies conducted in Brazil (Bandeira *et al.*, 2006; Nunes *et al.*, 2013) and Iran (Sajjadi *et al.*, 2013) also reported that boys exhibit behavioral problems more frequently compared with girls. However, some studies found that there was no sex difference identified in externalizing problems

**Table 3 Childhood abuse experiences among patients with externalizing disorders**

Childhood abuse experiences	ADHD (combined type)	ADHD (inattentive type)	CD	SUD	ODD
Paternal psychological abuse	5.134**	2.625	15.001**	8.825**	12.525
Paternal physical abuse	3.600*	0.803	12.587**	6.530**	7.730
Maternal psychological abuse	3.435	1.020	13.595**	2.465**	11.565
Maternal physical abuse	0.433	0.500	12.390**	0.955	12.955**
Sexual abuse	0.762	0.273	5.197**	1.845**	2.545

ADHD, attention deficit hyperactivity disorder; CD, conduct disorder; ODD, oppositional defiant disorder; SUD, substance use disorder; \* $P = 0.003$ ; \*\* $P < 0.001$ .

**Table 4 Correlation of child abuse experiences with externalizing disorders**

Variables	1	2	3	4	5
Paternal psychological abuse –					
Paternal physical abuse	0.81***				
Maternal psychological abuse	0.54***	0.49***			
Maternal physical abuse	0.39***	0.44***	0.72***		
sexual abuse	0.42***	0.50***	0.47***	0.42***	
Modified Global assessment	-0.24**	-0.38***	-0.20*	-0.17	-0.214*

X \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ .

**Table 5 Multiple regression analysis of child abuse experiences**

Variable	b	SE	95% confidence interval	Significance
Paternal physical abuse	-0.353	5.232	0.123-0.414	0.000006***

\*\*\* $P < 0.001$ .

(Marturano *et al.* 2005; Saud and Tonelotto, 2005; Nunes *et al.*, 2013; Korhonen, 2014).

Residence is one of the important factors affecting the emergence of psychiatric morbidity. In the current study, 26% of participants from the patient group were from urban areas (OR = 0.486, 95% CI = 0.341–0.693), whereas 74% were from rural areas (OR = 1.591, 95% CI = 1.319–1.922). We claimed that externalizing disorders are more prevalent in rural than in urban areas and may be due to ignorance, negative attitude, and stigma about mental illness and seeking medical or psychiatric consultation lately.

This study found that low average income is related to externalizing disorders. In a study conducted on African children up to grade 8, Ayer and Hudziak (2009) found that low socioeconomic status is associated with externalizing disorders; Bøe *et al.* (2014) also reported similar results. In contrast, Korhonen (2014) revealed that there were no socioeconomic differences between groups.

Child abuse in this study was measured by means of five categories (paternal physical abuse, paternal psychological abuse, maternal physical abuse, maternal psychological abuse, and sexual abuse). All these types are significantly associated with externalizing disorders in adolescents, but only paternal physical abuse is considered a significant predictor of externalizing disorders. The current study revealed that ADHD (combined type) is significantly associated with paternal psychological and physical abuse. However, CD, is significantly associated with all types of child abuse experience. SUDs are significantly associated with paternal physical and psychological abuse, maternal psychological abuse, and sexual abuse. In contrast, ODD is associated only with maternal physical abuse, and ADHD-inattentive type is not significantly associated with any type of child abuse.

Child abuse can lead to increased aggression that is mediated by inability of the child to regulate emotions (Ayer and Hudziak, 2009). Maltreatment is considered a severe early stress, and repeated stressful events can affect gene expression (Bøe *et al.*, 2014) and brain development, thus increasing risk for numerous psychological health problems (Heim *et al.*, 2010).

Similar relations between physical abuse, ranging from spanking to more severe and harsh physical punishment, and externalizing problems have been reported in other countries such as in Sub-Saharan Africa (McEwen, 2012; Choi and Oh, 2014; Leyton and Stewart, 2014) and other countries worldwide (Ani and Grantham-McGregor, 1998; Hermenau *et al.*, 2011).

A study by Hecker *et al.* (2014) on 409 children (52% boys) from grade 2 to 7 had a mean age of 10.49 ( $SD = 1.89$ ) years. Nearly all children had experienced physical abuse at some point during their lifetime both in family and school contexts. Half of the respondents reported having experienced corporal punishment within the last year from a family member. This study revealed that physical abuse by parents or by caregivers was positively related to children's externalizing problems.

Physical abuse correlated positively with all externalizing disorders, whereas correlated negatively with prosocial behavior (Leyton and Stewart, 2014). Longitudinal studies suggest that physical abuse of a child predicts aggression and antisocial behavior during adolescence and adulthood (Ani and Grantham-McGregor, 1998; Hermenau *et al.*, 2011). This association may be due to the imitation of parental behavior and internalizing it, followed by expression of this aggressive behavior. Different types of child abuse (physical, psychological, and sexual) were associated with numerous psychiatric disorders, including externalizing disorders (Hecker *et al.*, 2014) and may be related to criminal activity in adulthood (Connor *et al.*, 2004; Schilling *et al.*, 2007).

The relation between ADHD and childhood maltreatment is bidirectional as a history of child abuse increases ADHD symptoms, as well as ADHD increases risk for maltreatment due to externalizing behaviors and dysfunctional peers and family relations (Aebi *et al.*, 2014). ADHD-inattentive type that is not associated with any type of child abuse may emphasize the effect of biological causes rather than psychological causes (Briscoe-Smith and Hinshaw, 2006).

A history of physical and/or sexual abuse is also linked with adolescent SUDs (Bukstein and Lutka-Fedor, 2007). Some researchers have identified increased symptoms of substance use in maltreated versus normally treated youth, (Odgers *et al.*, 2008) but others have not observed this pattern (Cohen *et al.*, 2001). Many researchers have proposed that childhood maltreatment may play a role in the etiology of antisocial personality disorders and persistent adult antisocial behavior (Caspi *et al.*, 2002), and, in young adults, it is associated with higher psychopathy scores

(Horwitz *et al.*, 2001). Physical abuse appears to be more strongly related to adult antisocial behavior than is neglect or emotional abuse (Cohen *et al.*, 2001). The effects of maltreatment may be mediated by other environmental risk factors, such as other stressful situations.

The difference in types of child abuse that affect externalizing disorders during adolescence may explain the core of psychodynamics of each disorder, which confirms the variance in the nature of these disorders even if they are included in the same category.

### Recommendations

- (1) More extensive studies are required using longitudinal design, which are more relevant and are used to confirm causality.
- (2) Using multiple informants (adolescent, parents, and teachers) in gathering data instead of single informant.
- (3) This study may be beneficial in encouraging early detection and prevention efforts as regards adolescents' psychopathology. Findings reported in this study showed that externalizing disorder outcomes are correlated with all types of child abuse.
- (4) Preventive programs are more effective by family and public awareness. They may be required to help prevent adolescents from developing externalizing disorders. Preventative strategies could focus on positive parenting and nonviolent caregiving measures.

### Acknowledgements

#### Conflicts of interest

None declared.

### References

Aebi M, Linhart S, Thun-Hohenstein L, Bessler C, Steinhausen HC, Plattner B (2014). Detained male adolescent offender's emotional, physical and sexual maltreatment profiles and their associations to psychiatric disorders and criminal behaviors. *J Abnorm Child Psychol* [Epub ahead of print].

Al-Eissa MA, AlBuhairan FS, Qayad M, Saleheen H, Runyan D, Almuneef M (2015). Determining child maltreatment incidence in Saudi Arabia using the ICAST-CH: a pilot study. *Child Abuse Negl* 42:174–182.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders, text revision*. 4th ed. . Washington, DC: American Psychiatric Association.

Ani CC, Grantham-McGregor S (1998). Family and personal characteristics of aggressive Nigerian boys: differences from and similarities with Western findings. *J Adolesc Health* 23:311–317.

Ayer L, Hudziak J (2009). Socioeconomic risk for psychopathology: the search for causal mechanisms. *J Am Acad Child Adolesc Psychiatry* 48:982–983.

Bair-Merritt M, Zuckerman B, Augustyn M, Cronholm PF (2013). Silent victims – an epidemic of childhood exposure to domestic violence. *N Engl J Med* 369:1673–1675.

Bandeira M, Rocha S, Souza T, del Prette Z, del Prette A (2006). Problem behavior in elementary school students: occurrence characteristics and

relationship with social and learning difficulties skills. *Estud Psychol* 11:199–208.

Briscoe-Smith AM, Hinshaw SP (2006). Linkages between child abuse and attention-deficit/hyperactivity disorder in girls: behavioral and social correlates. *Child Abuse Negl* 30:1239–1255.

Brook JS, Zhang C, Balka, EB, Brook DW (2012). Pathways to children's externalizing behavior: a three-generation study. *J Genet Psychol* 173:175–197.

Bukstein OG, Lutka-Fedor T (2007). Principles of assessment for adolescents with substance use disorders. In: E Gilvarry, P McArdle, eds *Alcohol, drugs and young people*. Newcastle Upon Tyne, UK: Mac Keith Press; 127–135.

Burt S, McGue M, Iacono W (2009). Non-shared environmental mediation of the association between deviant peer affiliation and adolescent externalizing behaviors over time: results from a cross-lagged monozygotic twin differences design. *Dev Psychol* 45:1752–1760.

Bøe T, Sivertsen B, Heiervang E, Goodman R, Lundervold A, Hysing M (2014). Socioeconomic status and child mental health: the role of parental emotional well-being and parenting practices. *J Abnorm Child Psychol* 42:705–715.

Caspi A, McClay J, Moffitt TE, Mill J, Martin J, Craig IW, Poulton R (2002). Role of genotype in the cycle of violence in maltreated children. *Science* 297:851–854.

Central Agency for Public Mobilization and Statistics (1992). Annual report, Cairo, Egypt: CAPMAS

Central Agency for Public Mobilization and Statistics (2012). Egyptian family's average annual income is LE25,000, agency reports. Available at: <http://www.egyptindependent.com/news/egyptian-family-s-average-annual-income-le25000-agency-reports>. [Last accessed on 2015 Mar 29].

Choi JY, Oh KJ (2014). Cumulative childhood trauma and psychological maladjustment of sexually abused children in Korea: mediating effects of emotion regulation. *Child Abuse Negl* 38:296–303.

Cohen P, Brown J, Smailes E (2001). Child abuse and neglect and the development of mental disorders in the general population. *Dev Psychopathol* 13:981–999.

Connor H, Tyers C, Modood T, Hillage J (2004). *Why the difference: a closer look at ethnic minority students and graduates. Research report No. 552*. London, UK: DFES.

Evans SE, Davies C, DiLillo D (2008). Exposure to domestic violence: a meta-analysis of child and adolescent outcomes. *Aggress Violent Behav* 13:131–140.

Ghanem M, Ibrahim M, Elbeherly A, Elmerghany H (2000). The translation group of the Arabic version of the Mini International Neuropsychiatric Interview for Children (MINI-KID) by Sheehan DV *et al.*, 1998. Department of Neuropsychiatry, Ain Shams University, Cairo, Egypt

Hart H, Rubia K (2012). Neuroimaging of child abuse: a critical review. *Front Hum Neurosci*. Available at: <http://dx.doi.org/10.3389/fnhum.2012.00052>. Article 52. [Last accessed on 2015 Mar 29].

Hecker T, Hermenu K, Isele D, Elbert T (2014). Corporal punishment and children's externalizing problems: a cross-sectional study of Tanzanian primary school aged children. *Child Abuse Negl* 38:884–892.

Heim C, Shugart M, Craighead WE, Nemeroff CB (2010). Neurobiological and psychiatric consequences of child abuse and neglect. *Dev Psychobiol* 52:671–690.

Hermenu K, Hecker T, Ruf M, Schauer E, Elbert T, Schauer M (2011). Childhood adversity, mental ill-health and aggressive behavior in an African orphanage: changes in response to trauma-focused therapy and the implementation of a new instructional system. *Child Adolesc Psychiatry Ment Health* 5:29.

Horwitz AV, Widon CS, McLaughlin J, White HR (2001). The impact of childhood abuse and neglect on adult mental health: a prospective study. *J Health Soc Behav* 42:184–201.

Ismael MM, (1993). *The Wechsler Intelligence Scale for Children (WISC) the Arabic version*. Cairo, Egypt: The Egyptian Anglo library.

Jonson-Reid M, Presnall N, Drake B, Fox L, Bierut L, Reich W, Constantino JN (2010). Effects of child maltreatment and inherited liability on antisocial development: an official records study. *J Am Acad Child Adolesc Psychiatry* 49:321–332.

Korhonen M (2014). *Developmental perspectives of adolescence adjustment for maternal depressive symptoms*. Tampere, Finland: Acta Universitatis Tamperensis; Tampere University Press.

Leyton M, Stewart S (2014). Substance abuse in Canada childhood and adolescent pathways to substance use disorders. Ottawa, ON: Canadian Centre on Substance Abuse (CCSA).

MacMillan HL, Tanaka M, Duku E, Vaillancourt T, Boyle MH (2013). Child

- physical and sexual abuse in a community sample of young adults: results from the Ontario Child Health Study. *Child Abuse Negl* 37:14–21.
- Marturano E, Toller G, Elias L (2005). Gender, adversity, and socioemotional problems related to school distress. *Estud Psychol (Campinas)* 22:371–380.
- McConaughy SH, Stanger C, Achenbach TM (1992). Three-year course of behavioral/emotional problems in a national sample of 4–16-year-olds. *J Am Acad Child Adolesc Psychiatry* 31:932–940.
- McEwen BS (2012). Brain on stress: How the social environment gets under the skin. *PNAS* 109:17180–17185.
- Moylan CA, Herrenkohl TI, Sousa C, Tajima EA, Herrenkohl RC, Russo MJ (2010). The effects of child abuse and exposure to domestic violence on adolescent internalizing and externalizing behavior problems. *J Fam Violence* 25:53–63.
- Mukheimer A, A Razeq (2004). *Questionnaire of child abuse experience during childhood*. Egypt: Anglo Egyptian Library.
- Murray J, Farrington DP (2010). Risk factors for conduct disorder and delinquency: key findings from longitudinal studies. *Can J Psychiatry* 55:633–642.
- Nezhad MA, Khodapanahi MK, Yekta M, Mahmoodikahriz B, Ostadghafour S (2011). Defense styles in internalizing and externalizing disorders. *Procedia Soc Behav Sci* 30:236–241.
- Nunes S, Faraco A, Vieira M (2013). Attachment and parental practices as predictors of behavioral disorders in boys and girls. *Paidéia (Ribeirão Preto)* 23:369–377.
- Ogden CL, Moffitt TE, Broadbent JM, Dickson N, Hancox RJ, Harrington H, Caspi A (2008). Female and male antisocial trajectories: from childhood origins to adult outcomes. *Dev Psychopathol* 20:673–716.
- Okasha A (1993). Psychiatry in Egypt. *Psychiatric Bulletin* 17:548–551.
- Pears KC, Kim HK, Fisher PA (2008). Psychosocial and cognitive functioning of children with specific profiles of maltreatment. *Child Abuse Negl* 32:958–971.
- Pereda N, Guilera G, Abad J (2014). Victimization and polyvictimization of Spanish children and youth: results from a community sample. *Child Abuse Negl* 38:640–649.
- Prinz P, Onghena P, Hellinckx W (2006). A cohort sequential multivariate latent growth curve analysis of normative CBCL aggressive and delinquent problem behavior: associations with harsh discipline and gender. *Int J Behav Dev* 30:444–459.
- Sajjadi H, Kamal S, Rafiey H, Vameghi M, Forouzan A, Rezaei M (2013). A systematic review of the prevalence and risk factors of depression among Iranian adolescents. *Glob J Health Sci* 5:16–27.
- Saud L, Tonelotto J (2005). Social behaviour in schools: gender differences between and series. *School Educ Psychol* 9:147–157.
- Schilling AE, Aseltine RH, Gore S (2007). Adverse childhood experiences and mental health in young adults: a longitudinal survey. *BMC Public Health* 7:30.
- Scott-Storey KA (2013). Abuse as a gendered risk factor for cardiovascular disease: a conceptual model. *J Cardiovasc Nurs* 28:E1–E8.
- Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavas J, Weiller E, *et al.* (1998). The Mini-International Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry* 59:22–33.
- Smith GN, Ehmann TS, Flynn SW, MacEwan GW, Tee K, Kopala LC, *et al.* (2011). The assessment of symptom severity and functional impairment with DSM-IV axis V. *Psychiatr Serv* 62:411–417.
- Stoltenborgh M, Bakermans-Kranenburg MJ, van Ijzendoorn MH (2013). The neglect of child neglect: a meta-analytic review of the prevalence of neglect. *Soc Psychiatry Psychiatr Epidemiol* 48:345–355.
- Thompson MP, Kingree JB, Desai S (2004). Gender differences in long-term health consequences of physical abuse of children: data from a nationally representative survey. *Am J Public Health* 94:599–604.
- UNICEF (2008). The situation of children and women in Egypt. Available at: <http://www.unicef.org/egypt/overview.html>
- Williams JH, van Dorn RA, Bright CL, Jonson-Reid M, Nebbitt VE (2010). Child maltreatment and delinquency onset among African American adolescent males. *Res Soc Work Pract* 20:253–259.
- World Health Organization (2014). Child maltreatment: fact sheet. Available at: <http://www.who.int/mediacentre/factsheets/fs150/en/>. [Last accessed on 2015 Mar 29].

