

Senior Honors Thesis: The Influence of Childhood Maltreatment on Adult Empathic Concern

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Abstract

Abuse is expressed through physical, sexual, and emotionally detrimental acts. Victims of abuse often experience cumulative abuse, which is defined as more than one type of abuse (Scott-Storey, 2011). There are many deleterious potential outcomes of abuse, including lowered social competence (Manly, Cichetti, and Barnett, 1994). Social competence includes empathy as a core feature (Han & Kemple, 2006). The current study aimed to determine if experiencing cumulative abuse (physical, sexual, and emotional) in childhood lowers empathy expression in adulthood. A sample of 224 undergraduate individuals at a large Midwestern university completed the Adverse Childhood Experiences Questionnaire (ACES; Felitti et al., 1998) and Empathy Quotient (EQ; Baron-Cohen & Wheelwright, 2004). The individuals either reported no abuse history (N= 149) or that they experienced one (N= 52), two (N= 19), or three (N= 4) types of abuse; neglect was null. A One-way ANOVA was conducted and the researchers found that experiencing abuse (one, two, or three types) in childhood is not related to individuals' adult empathic concern. Factors that were not assessed could play a role in why cumulative abuse experience did not impact empathy. For instance, some protective factors supported for decreasing negative effects of traumatic exposure (Carver, 1998; Maheux & Price, 2016) could specifically serve to buffer the effects of child abuse on empathy development and expression. Future directions are discussed.

The Influence of Childhood Maltreatment on Adult Empathic Concern

Child abuse and neglect is pervasive within our society, with over 600,000 reports occurring in just one year (686,000 in 2012; Centers for Disease Control and Prevention, 2014). The effects of abuse are widespread, as it affects not only the victim, but society as a whole. A study conducted by the Centers for Disease Control and Prevention (Fang, Brown, Florence, and Mercy, 2012) assessed reported and projected costs of fatal and nonfatal child maltreatment in the United States and found one year's worth of confirmed cases to result in a lifetime cost of approximately \$124 billion due to health care, welfare, criminal justice, medical costs, and productivity losses. If abuse and neglect negatively affects us all to some degree, it is important to understand how and why these acts still occur. In the majority of reports, the parents are the ones acting out on children (80.3%; Centers for Disease Control and Prevention, 2014). Abuse intervention is a complex issue due to perpetrators often being those that are closest to the victim. There are many deleterious outcomes of these acts, expressed both immediately and delayed. Maltreated children tend to demonstrate increased depressive symptoms and social isolation (Christoffersen & DePanfilis, 2009). These symptoms persist throughout adulthood (Khan et al., 2015), and can disrupt social and cognitive development expressed in adulthood. Explicitly, this population is at a higher risk for distortions in their cognitive schemas, and this has shown to be related to higher acceptance of relationship violence in both men and women (Ponce, Williams, & Allen, 2004). These individuals are both more accepting of violence occurring to them as well as endorsing any violent acts themselves, suggesting a transmission of abusive behavior amongst generations (Cort, Toth, Cerulli, & Rogosch, 2011; Dixon, Browne, & Hamilton-Giachritsis, 2005). It is apparent that maltreatment has detrimental effects, so what

processes underlie its existence? A variety of social, demographic, psychological, and family system factors interact to culminate in parental or caregiver acts of maltreatment (Sidebotham & Heron, 2006). In particular, psychological and social constructs that have been investigated in the literature include parental empathy and sympathy, which are paramount in individuals' ability for perspective-taking (Sulpizio et al., 2015). Parents exhibiting deficits in empathetic and sympathetic responsiveness have been shown to be at higher risk for abusing their children (Miller & Eisenberg, 1988).

Empathy is a complex ability that involves an individuals' recognition of emotion, inferring a cause for said emotion, and the person's ability to share in that emotion (Decety & Jackson, 2004). Empathy begins to form in early development, as expressed through emotional contagion in infancy. By toddlerhood, empathy becomes more sophisticated when perspective-taking occurs (Hoffman, 2007). It is also supported that one's level of empathy tends to be fairly stable throughout the lifespan, excluding major disruptions (Knafo, Zahn-Waxler, Van Hulle, Robinson, & Rhee, 2008; Zahn-Waxler & Radke-Yarrow, 1990). Maltreatment can serve as a major disruption in a child's development through a multitude of ways; therefore, it is highly important that research be oriented towards understanding what this could mean regarding empathy development both in the short-term development of a child, but long-term as well.

Who does maltreatment affect?

There are various factors that influence families to be at higher risk for child maltreatment. Demographic factors consist of familial low socioeconomic status, ethnic minority status, limited maternal education, and family composition (primarily single parent households). Psychological factors shown to be highly correlated with maltreatment are maternal stress,

sociopathy and serious mental illness, low parental involvement and warmth, and child developmental disorders. Additionally, a general lack of resources serves to be a contributor to child maltreatment incidences (Brown, Cohen, Johnson, & Salzinger, 1998). While some of the factors function independently, it is often the case that they operate in concurrence (Lee & Goerge, 1999; Lindsay et al., 2008). The children that have the highest potential to be subjected to abuse are often younger than four years of age and have some variety of special need-- whether that is a physical or mental disability, health issues, or a chronic illness (CDC, 2015). Children with special needs can increase caregiver burden, resulting in stress (Spratt, Saylor, and Macias, 2007), which serves as a risk factor of its own. Rodriguez and Richardson (2007) investigated both cognitive factors and contextual factors involved in parental risk of maltreatment. Cognitive factors consisted of preexisting schemas, such as parents' external locus of control, low empathic perspective-taking, low attachment, and unreasonable developmental expectations of the child. Contextual factors measured were parental negative affect and stress. All cognitive factors excluding developmental expectations were markers for abuse risk. Negative affect and stress served as predictors for abuse across all cognitive factors. Essentially, when parents endure stress in addition to having negative cognitive schemas, including low empathy and attachment, they are at a heightened risk for endorsing maltreating behaviors.

Effects of childhood maltreatment

Childhood maltreatment has been shown to have a large array of negative consequences, seen throughout childhood, adolescence, and continuing into adulthood. In typical development, it is most commonly appropriate to see a positive, or prosocial toddler response to distressed agemates. This is often through concern, empathy, or shared sadness. Toddlers subjected to

abuse or harsh parental environments seem to have this mechanism disrupted; patterns of disturbing behavior, such as anger and physically violent responses have been noted in abused toddlers (Main & George, 1985; Stover et al., 2016). Perhaps this is an early marker of intergenerational transmission of aggression that can develop into abuse characteristics (Cort et al., 2011). Some of these characteristics can persist throughout development and manifest in the school setting, affecting adolescent achievement. In a study conducted by Nugent, Labram, and McLoughlin (1998), childhood sexual abuse alone had detrimental effects on adolescents' development of social behaviors, learning, bullying, and truancy. These factors combine to impair academic achievement, which has been shown to serve as a risk factor for maltreatment (Brown, 1998; Gilbert, 2009), further illustrating a cyclical nature that tends to exist in risk factors for maltreatment. Many adjustment issues tend to persist into adulthood. Most notably, adults that have been abused in childhood exhibit difficulty in emotional processing of both positive and neutral stimuli (Young & Widom, 2014), a symptom that has been observed in individuals with depression (Leppanen, Milders, Bell, Terriere, & Hietanen, 2004). In fact, research has demonstrated depression and posttraumatic stress disorder to be long-term effects of childhood maltreatment, in addition to a gamut of various psychopathologies, such as chronic anxiety, borderline personality disorder, and even dissociative identity disorder in some maltreatment cases (Allen, Cramer, Harris, & Rufine, 2015; Dorahy et al., 2015). It is apparent that maltreatment, especially if not buffered by protective factors, can have far-reaching negative consequences on an individual's developmental trajectory.

Empathy development and disturbance

Empathy is an emotional construct often recognizable early in a child's development. Its emergence and development can be traced even to the first few hours of life (Hutman & Dapretto, 2009). Empathy expression grows more complex within the first few months of infancy and continues to become a more intricate process throughout toddlerhood and adulthood (Hoffman, 2007). Empathy is measured through both affective and cognitive components. Affective empathy is perhaps the most common perception of empathy expression. Affective empathy is matching another's emotions (i.e., feeling as they feel) and cognitive empathy is better explained as being able to conceptualize how another person is affected by events [(i.e., imagining one's self in the same position that another is in) (Zahn-Waxler & Yarrow, 1990)]. Furthermore, empathy is most often illustrated through imitative behavior, emotional matching, and emotional contagion (Hutman & Dapretto, 2009). Imitation is the act of following another's reactions, whereas matching is slightly more advanced and expressed through one's ability to perceive another's external behaviors, furthermore showing ability to mimic and anticipate these behaviors through modes of gesturing, facial expressions, and speech patterns (Iacoboni, 2009). Emotional contagion is an affective process that occurs through mimicry leading to the convergence of a specific mood within an interacting group (Geangu, Benga, Stahl, & Striano, 2010).

These processes are, at the basic neurobiological level, functional due to mirror neurons. Mirror neurons in the brain fire and tend to have a covert effect of leading our muscles to imitate the expression and bodily positioning of another (Corradini & Antoinetti, 2013). The biological basis of empathy does not stop with just mirror neurons-- there is an entire empathy circuit in the

brain composed of several brain regions working in concert. In fact, there are at least ten interconnected brain regions involved in the development and expression of empathy (Baron-Cohen, 2011). It is best to dichotomize these regions in the role they play in empathy development and expression. For more “cognitive” empathy functions, (i.e., visualizing yourself in someone else’s shoes and feeling how you imagine they would feel), the medial prefrontal cortex, superior temporal sulcus, temporal poles, and ventromedial prefrontal cortex operate with one another. “Affective” empathy is driven by a more emotional experience, thus two regions important for understanding, encoding, and expressing emotional experiences are involved-- the amygdala and insula (Dvash & Shamay-Tsoory, 2014). Empathy is a very ingrained process and being able to assess it at the biological and neural level as well as presentation at the affective interpersonal level are important to fully understand its function.

The use of functional magnetic resonance imaging (fMRI) has obtained valuable information regarding the neurological components of empathy (Baron-Cohen, 2014). Using fMRI, researchers have discerned the regions that are activated when an individual responds empathically (Nummenmaa, Hirvonen, Parkkola, & Hietanen, 2008; Schnell, Bluschke, Konradt, & Walter, 2011). Behavioral empathy is assessed at both the objective and subjective level. Through use of the Multifaceted Empathy Test (MET), individuals respond to a series of photos showcasing various emotions and respond to questions assessing both cognitive and affective empathy regarding how they suspect that individual is feeling and how they feel for that individual in return (Dziobek et al., 2008).

Understanding empathy functioning is important because it drives our need to connect with others and the ability to which we are able to do so effectively. As humans, we are heavily

influenced by our social environment and the threat of severed social bonds or isolation can be extremely detrimental to our well-being in most cases (Lieberman, 2013). Impairments in empathy not only lead to poor interpersonal skills and, sometimes, social isolation, but is implicated in the development of pathological disorders, such as borderline personality disorder (BPD), narcissism and antisocial personality disorder, major depressive disorder (MDD), and schizophrenia. Additionally, autism spectrum disorder (ASD) is marked with impaired empathy (Baron-Cohen, 2014; Thoma, Friedmann, & Suchan, 2013).

Due to such early expression of empathy (Hutman & Dapetto, 2009), research has determined that genes, such as the oxytocin receptor gene (*OXTR*; Wu, Li, & Su, 2012), Dopamine D4 receptor (*DRD4*; Uzefovsky, 2014), and vasopressin V1b receptor (*AVPR1B*; Wu, Shang, & Su, 2015), play a role in our level of “baseline” empathy. In addition to genetic factors, an individual’s environment is crucial in shaping their empathy development. Tong and colleagues (2012) assessed the influence of home environment and the parent-child relationship on empathy development in toddlers. A total of 176 Japanese parent-child dyads participated in two phases of experimentation, when the child was nine, then eighteen months old. Families were assessed on child rearing attitudes as well as child’s affective empathy during nonemotional tasks with the parent. It was made apparent that the degree of parent-child interaction, stable parenting practices, parental attitude, and mother mental health status were correlated with toddler empathy. Factors such as low parental warmth, attachment, disordered parenting practices or maternal mental illness serve to influence disrupted empathy in the early stages of development. These factors are also implicated in maltreatment risk (Brown, Cohen, Johnson, & Salzinger, 1998).

Current Study

The current study aims to assess the relation between experiencing cumulative abuse in childhood and the expression of empathy in adulthood. Empathy development can be impaired through many factors central to negative caregiver-child interactions and attachment (Brown, Cohen, Johnson, & Salzinger, 1998; Rodriguez & Richardson, 2007). Such negative interactions and low attachment have been supported to be pertinent in deleterious outcomes, such as acts of maltreatment (Egeland & Sroufe, 1981). Childhood maltreatment has been linked to decreased empathy in children and adults (Locher et al., 2014; Main & George, 1985; Straker & Jacobson, 1981). Maltreatment severity and frequency have shown to have long-term effects regarding adolescents' social competence (Manly, Cicchetti, & Barnett, 1994). Maltreatment encompasses both abuse and neglect but since neglect is such a pervasive and insidious phenomenon, the current study aimed to focus on acts of commission (abuse) rather than acts of omission (neglect). Cumulative abuse was measured in amount of abuse types one suffered in childhood (none, one, two, or three types) and it served as a predictor of adulthood empathy. We believe that as cumulative abuse increases we will see empathy to be more impaired in adulthood.

Method

Participants

For the current study, 224 undergraduates were recruited primarily through psychology and introductory speech courses at a large Midwestern university. Individuals completed a pre-screening questionnaire prior to participation; both individuals that did and did not endorse a trauma history participated in this study. When prompted on questions of childhood abuse, 149 did not claim to experience any type of abuse (emotional, physical, or sexual); 52 experienced

one type of abuse, 19 experienced two types of abuse, and 4 individuals encountered three types of abuse in childhood. The sample was primarily female (181; 75.1%) freshman and sophomore students (77.6%), with an overall majority of Caucasian individuals (71.4%). Most of the individuals were 19 years old, but ages ranged from 17 to 54 years old. All participants received course credit for participating in this research.

Procedure

Data were collected in three waves, from January 2014 to December 2015. Individuals participated through the online research study system, SONA. A prescreening questionnaire was implemented to identify individuals that self-reported trauma exposure. All students that completed the prescreening questionnaire were able to access the study and participate through the SONA system. If the individual was interested in participation, he/she signed up for the study via SONA and completed a battery of online self-questionnaires at his/her convenience. All individuals provided informed consent online prior to participation. The participants took approximately two hours to complete the study. Upon completion, the individuals were debriefed and granted course credit for their participation.

Measures

Childhood abuse

The current study utilized the Adverse Childhood Experiences Questionnaire (ACES; Felitti et al., 1998) to assess childhood abuse. The ACES Questionnaire is a 156-item measure of the cumulative impact of multiple exposures to trauma. The ACES assesses themes of family dysfunction, physical, sexual, and emotional abuse, and instances of witnessing or being exposed to other forms of violence such as peer violence or witnessing community violence. For the

current study, we only analyzed items under the categories of physical abuse, emotional abuse, and sexual abuse. Respondents indicated whether they had or had not (yes/no) been exposed to these various forms of trauma and specified how many times or how many individuals had subjected them to certain experiences detailed in the questionnaire. Individuals received one point for each type of trauma endorsed (ranging from 0-7 points, across the categories). High ACES scores (4 or more traumatic experiences) have shown to be indicative of an increased risk for negative long-term health related outcomes. The ACES Questionnaire has been found to be a reliable and valid measure in past studies (Felitti et al., 1998).

Empathy

The Empathy Quotient (EQ) measure designed by Baron-Cohen and Wheelwright (2004) was implemented to assess individuals' self-reported empathy. The Empathy Quotient consists of 60 total items, 40 of which measure empathy and 20 simply serve as filler items. Responses exist on a four-point continuum, ranging from "*Strongly Disagree*" to "*Strongly Agree*." Previous research has indicated the EQ to be a reliable and valid measure (Baron-Cohen & Wheelwright, 2004).

Analysis

The researchers conducted a One-way Analysis of Variance (ANOVA) to determine if experiencing various numbers of childhood abuse types served as a predictor for adulthood empathy levels. There were four group levels in total (i.e., no abuse, one type of abuse, two types of abuse, or three types of abuse). Additionally, an independent samples t-test was conducted to compare empathy levels in the abuse and no abuse groups.

Results

Both the control and abuse groups were assessed using a One-way ANOVA to determine if amount of cumulative abuse endured in childhood was associated with impaired empathy in adulthood. Analyses revealed that various amounts of childhood abuse did not result in significantly differing empathy levels in adults, $F(3,220) = .632, p = .595$ (Tables 1 and 2). These results were also illustrated in the independent samples t-test, $t(222) = .074, p = .941$ (Tables 3-5).

Discussion

The hypothesis that cumulative abuse in childhood is linked to lower levels of empathy in adulthood was not supported in this study. Many factors may be interacting to result in the outcome of this study; specifically, there could be other variables contributing to this relation that were not measured, such as factors that serve to buffer effects of abuse on long-term empathy development and expression. Additionally, population characteristics and study design methodology must be considered as well. Even so, the current study makes a positive contribution to the child abuse literature with a focus on the nature of cumulative abuse and its long-term outcomes, specifically related to empathic concern. It has great implications for current research being conducted as well as future directions.

Our findings support the belief that individuals with a childhood abuse history are not doomed to a sequelae of negative consequences. Past research has illustrated various protective factors that serve to moderate the effects that abuse can have on an individual, both in the short-term and long-term (Carver, 1998; Maheux & Price, 2016). Just as there are factors that operate within and outside of abuse that can lead to greater maladaptive outcomes (Brown, Cohen, Johnson, & Salzinger, 1998), there are factors that aid to buffer against long-term detriment.

Resiliency can be fluid over time, as it varies in concordance to environmental or situational factors (Herrenkohl, Herrenkohl, and Egolf, 1994). Due to assumptions that must be made about an individual attending college (i.e., financial capability, ability to perceive and accomplish goals, time management skills, balancing tasks of varying difficulty, autonomy), most college students have a moderately high level of functioning and demonstrate some level of resiliency (Yeager & Dweck, 2012). In our current sample, all participants were college undergraduates at a Midwestern university. We were not able to recruit community members to diversify our sample in terms of demographics including education level, age, socioeconomic status, and ethnicity. Therefore, our sample was fairly homogenous.

As mentioned prior, the populations most at risk for abuse occurrences are low SES families and ethnic minorities (Brown, Cohen, Johnson, & Salzinger, 1998). Our study did not fully capture these populations because a much larger percentage of college students hail from median to high income households than low SES backgrounds. A study conducted by the Pell Institute (2015) found that 82 percent of 18 to 24 year olds from the top family income quartile (greater than \$108,000) participated in college, compared with just 45 percent of those in the bottom quartile (less than \$34,000). This disparity likely occurred within our college sample. Additionally, an overwhelming majority of our sample was Caucasian and the remaining 21.1 percent of the sample was comprised of Hispanic/Latino (6.2%), African American (5%), Native American (4.6%), Asian American (1.2%) and individuals reporting “Other” ethnicities (4.1%). Effects could have potentially been seen had our minority sample been more representative.

Representation continued to be a complication within our sample. When the 224 participants were identified as either having or not having an abuse history, it was found that the

comparison groups were not evenly distributed. Specifically, the control group (N= 149) was twice the size of the abuse history group (N= 75). Additionally, the abuse groups became further skewed once broken down to individuals having experienced one form of abuse (N= 52), two forms of abuse (N= 19), or three forms of abuse (N= 4). Due to these limitations, it could be argued that these groups would not serve to be representative of the larger population of individuals that have experienced cumulative childhood abuse.

Another contributing factor that may be important to the lack of relation between cumulative child abuse and adult empathy seen in this study was the implemented methodology. As mentioned before, there are other methods of measuring the processes of empathy (fMRI, MET) as it is a complex process that can be expressed through affect, cognition, and motor acts (Van et al., 2016). If the current study was able to implement a more objective measure of empathy instead of, or in addition to, use of self-report, we could have potentially gained more information to elucidate empathy functioning in these individuals.

The current study revealed that empathic concern did not show variation in response to experiencing different numbers of abuse types in childhood. This should be investigated further in future research. If the same findings occur in a larger, more representative sample, it is important to understand how empathy is maintained despite experiencing various forms of abuse in childhood. Potential buffers have important implications regarding fostering a positive outlook in child victims as well as helping them form an internal locus of control and increasing intervention efforts that are empirically supported to be effective in leading to positive long-term outcomes for victims and families.

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Appendix

ANOVA

EQ_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	250.945	3	83.648	.632	.595
Within Groups	29138.894	220	132.450		
Total	29389.839	223			

Table 1.

Descriptives

EQ_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
No abuse	149	43.0134	11.24661	.92136	41.1927	44.8341	11.00	67.00
1 type of Abuse	52	42.2500	11.24570	1.55950	39.1192	45.3808	11.00	61.00
2 types of abuse	19	45.6316	13.64311	3.12994	39.0558	52.2073	14.00	60.00
3 types of abuse	4	38.2500	14.36141	7.18070	15.3978	61.1022	17.00	47.00
Total	224	42.9732	11.48011	.76705	41.4616	44.4848	11.00	67.00

Table 2.

Group Statistics

	abyn	N	Mean	Std. Deviation	Std. Error Mean
EQ_Total	.00	149	43.0134	11.24661	.92136
	1.00	75	42.8933	12.00740	1.38650

Table 3.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
EQ_Total	Equal variances assumed	.870	.352	.074	222
	Equal variances not assumed			.072	140.123

Table 4.

Independent Samples Test

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence ...
Lower					
EQ_Total	Equal variances assumed	.941	.12009	1.62898	-3.09016
	Equal variances not assumed	.943	.12009	1.66471	-3.17111

Table 5.