

Research Article

The Predictive Power of Adverse Childhood Experiences on Trust in the Medical Profession among Residents of a Public Housing Facility

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Keywords

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- Attachment theory

Abstract

Attachment theory holds that experiences of childhood abuse or neglect negatively impacts individuals' trust in others, particularly care giving figures, into adulthood. Per attachment theory, this study explored the relationship between the experiences of childhood abuse or neglect and trust in the medical profession among adults drawn from a public housing facility. This cross sectional study employed the Adverse Childhood Experiences (ACEs) scale and the Trust in the Medical Profession Scale (TMPS) to examine the predictive power of ACE scores on trust in the medical profession. Results of a regression analysis ($N = 63$) indicated that ACE scores were indeed a moderate, negative predictor of trust in the medical profession. The negative relationship found between ACEs and trust in the medical profession suggests that lower trust in the medical profession may be a mediator of the well established relationship between ACEs and poor health, as lower trust in the medical profession has itself been linked to poor health outcomes. The study concludes with a discussion of the implications of the results on practice and research for those who have experienced ACEs.

ABBREVIATIONS

ACE–Adverse Childhood Experiences, TMPS–Trust in the Medical Profession Scale, SES– Socioeconomic Status

INTRODUCTION

Research has long shown that experiences of child abuse and neglect predict poor health outcomes in adulthood [1-6]. However, despite the sizable body of research demonstrating the link between child abuse and neglect and poor health, the mediators of the relationship between the two variables remain poorly understood. This study was designed to explore the relationship between child abuse and neglect and trust in the medical profession because of the importance of trust in providers to health care outcomes [7-9]. If a relationship exists between child abuse and neglect and trust in the medical profession, such as result suggests that trust in the medical

profession may play a role in linking child abuse and neglect to poor health. The theoretical linkage between child abuse and neglect and poor health via trust in the medical profession is supportable because other studies that have linked lower trust in the medical profession to healthcare avoidance, the failure to comply with treatment, and, ultimately, poorer health [7-9].

The Measurement of Childhood Abuse and Neglect

In 1991, Felitti et al. published a landmark study that quantitatively captured the relationship between child abuse and neglect and poor health [1]. Felitti, et al, captured the quantitative relationship between childhood abuse and neglect and poor health using the adverse childhood experiences (ACE) scale. The ACE scale numerically captures the degree and quality of an individuals' experience of childhood abuse and neglect. Research using the ACE scale has consistently demonstrated

a dose response relationship between ACEs and poor health outcomes such as greater disability, disease, and early mortality [1-6]. While the link between ACEs and poor health is well established, more research is needed to understand the etiology of this relationship. We theorize that, consistent with attachment theory, the relationship between ACEs and poor health is explained in part by the long term negative psychological impact of ACEs on an individual's trust of others, particularly those within the medical profession.

Attachment Theory

Attachment theory is a model developed by the combined efforts of Bowlby [10-11] and Ainsworth [12] to explain an individual's perceptions of others based on the quality of early care giving relationships experienced by the individual. Based on the quality of an individual's relationship with early caregivers, attachment theory posits that each individual develops a pattern of attachment to others that constitutes the individual's attachment style. Attachment styles range from *secure attachments*, characterized by trust of others, to *insecure attachments*, characterized by distrust [13]. In terms of medical care, secure attachment styles have been associated with the perception that medical personnel can be trusted, [13] with individuals with secure attachment styles being more active in the creation of care plans in partnership with their providers [14]. In contrast, those with insecure attachment have been characterized as having a high degree of distrust of others, which can include viewing medical caregivers as potentially threatening or hostile [15].

As noted above, the causal factor in the development of one's attachment style is thought to be the quality of the individual's relationship with early caregivers [10-12,16]. In cases of child abuse and neglect, the absence of quality care giving at an early age predisposes an individual to develop an insecure attachment style [10-12,16]. Insecure attachment styles that are developed in early childhood are problematic because, since early Freud [17], theorists have held that this influence of early childhood care giving has a carryover effect into an individual's adult relationships [18-19]. Such theorists suggest that experiences of child abuse and neglect have an associated negative impact on attachment styles that influences an individual's tendency to distrust others into adulthood [19].

Attachment theory and the impact of child abuse and neglect are thought to be relevant to the medical professional patient relationship because the medical professional patient relationship epitomizes a care giving relationship. In fact, others have interpreted the medical professional patient relationship through the lens of attachment theory [13-15]. If attachment theory has relevance to the medical profession patient relationship, ACE scores should predict lower trust in the medical profession as more ACEs should predict greater distrust of others characteristic of insecure attachment styles.

Current Study

Consistent with the predictions of attachment theory, this study seeks to empirically test the theory that ACEs predict lower trust in the medical profession. To test this hypothesis,

this study drew on participants from a public housing facility. A public housing facility was selected as a research site because of the established link between socioeconomic status (SES) and child abuse and neglect [20]. Because of this established link, we expected that within a sample drawn from a public housing facility, there would be sufficient variability in ACE scores to explore the statistical relationship between ACEs and trust in the medical profession.

MATERIALS AND METHODS

Participants

A cross sectional study was conducted at a public housing facility in a medium sized city in the south central United States. All participants were over 18 years of age and residents of the facility. The study consisted of a paper and pencil survey that took about 15 minutes to complete. Staff of the public housing facility assisted in identifying participants who were informed of the opportunity to participate in a research project by completing a survey at the community center of the facility. Signs were also present around the facility to notify participants of the opportunity to participate. Individuals self selected and were offered a drink coupon from a local convenience store as an incentive for participation. Residents of the facility were provided a consent form prior to completing the survey that summarized the nature of the study and informed them that participation was voluntary. The Institutional Review Board of the research team's institution approved the protocol. Ninety one respondents returned surveys. Of the 91, 63 completed all items. Statistical analysis was performed to test for differences of age, gender, and minority status among respondents who were missing data and those who completed all items. No significant differences were found.

Scales

Trust in the Medical Profession Scale: The study used the Trust in the Medical Profession Scale (TMPS) to capture the criterion variable of trust in the medical profession. The TMPS is an 11 item measure developed by Hall and colleagues [21-22] that uses a 5 point Likert scale to capture a respondent's overall trust in the medical profession. The Likert scale ranges from 1 = not at all characteristic to 5 = very characteristic. Total scores on the TMPS range from 11 to 55, with a higher score indicating more trust in the medical profession. The TMPS has demonstrated internal consistency ($\alpha = .89$) and validity, characterized by correlations with the interpersonal physician trust scale ($r = .31$), satisfaction with health care scale ($r = .55$), and the following of doctors' recommendations ($r = .55$) [21-22].

Adverse Child Experiences Scale (ACE). The ACE Scale is a 10-item measure that captures the total number of ACEs experienced per respondent. Responses are captured in a "yes" or "no" format, with the number of categories of ACEs totaled to produce a score within a range of 0-10. ACE categories capture whether a respondent has experienced emotional, physical, or sexual abuse, emotional or physical neglect, witnessed domestic violence, grew up with a mentally ill or substance abusing household member, experienced the loss of a parent or divorce, or had a household member incarcerated [1].

Demographic variables: The demographic variables of minority status, gender, and age were also collected to determine if any such organismic variables were correlated with trust in the medical profession.

Analysis: All data analysis was performed using SPSS 19. A correlation and regression analysis was chosen as an analytic method because we sought to test ACEs as a predictor of trust in the medical profession. In preparation for a correlation and regression analysis, the independent demographic variable of minority status was dummy coded as white (0) vs. minority (1). The independent variable of gender was dummy coded as male (0) vs. female (1). ACEs were also dummy coded into two groups: no ACEs (0) vs. 1 or more ACEs (1). Dummy coding was not necessary for the independent variable of age as it was collected as a continuous variable in years. The statistical assumptions of regression were also assessed and met prior to the reporting of results [23].

RESULTS AND DISCUSSION

Descriptive Statistics

The sample consisted of an $N = 63$, with 83% of respondents reporting a female gender. The mean age of the sample was 34.9 years ($SD = 11.5$). Regarding ethnicity, 65% of respondents reported minority status. An overwhelming majority of our respondents (73%) were exposed to at least 1 ACE, with 30% reporting an ACE score ≥ 4 (Table 1). By contrast, in a national sample reported by the CDC, only 64% of respondents were exposed to 1 or more ACEs, and only 13% of respondents were exposed to ≥ 4 ACEs [24].

Inferential Statistics

The study began with zero order correlations of the variables of minority status, gender, age, ACEs and trust in the medical profession. Only ACEs had a statistically significant relationship with trust in the medical profession in a negative direction. (Table 2) Because ACEs were the only variable within the zero order correlations to exhibit a statistically significant relationship with trust in the medical profession, a simple regression model was then performed with ACEs as the predictor variable and trust in the medical profession as the criterion. Results indicated that ACEs were a significant negative predictor ($p = .004$) of trust in the medical profession via a negative relationship, accounting for 13% of variance ($R^2 = .126$) in trust in the medical profession. According to the accepted heuristics of the social sciences, the effect size of the variance accounted for in trust of the medical profession was moderate [25].

The result is significant because this study is the first to establish ACEs as a predictor of lower trust in the medical profession. Data revealing ACEs as a predictor of lower trust in the medical profession suggests a better theoretical understanding of the established relationship between ACEs and poor health: to the extent that lower trust in the medical profession influences health outcomes via treatment seeking behaviors and adherence, the negative relationship between ACEs and poor health may be influenced by distrust of the medical profession. Such an interpretation is predicted by attachment theory, and supports another recent study that indicates an insecure attachment

Table 1: Percentage of ACEs by category in our sample compared to a national sample [24].

Number of Adverse Childhood Experiences (ACE Score)	Homeless adolescent sample ($N = 63$)	National Sample ($N=17,337$)
0	27	36
1	18	26
2	16	16
3	6	10
4 or more	30	13

Abbreviations: Adverse Childhood Experiences (ACE)

Note: Numbers are rounded to the nearest whole percentage.

Table 2: Zero order correlations between the variables ($N = 63$).

Variable	1	2	3	4	5
1. Age					
2. Gender: Male (0) vs. Female (1)	-.223*				
3. Minority Status: White (0) vs. Minority (1)	.179	.117			
4. ACEs: No ACEs (0) vs. ≥ 1 ACEs (1)	.097	.006	-.109		
5. Trust in the Medical Profession	-.068	-.059	-.068	-.355**	

Note. * $p < .05$; ** $p < .01$.

style, associated with distrust of medical providers, predicted discomfort with cooperating with providers and greater perceptions by patients of barriers between providers and patients [26].

Future Directions and Limitations

Our results have both practice and research implications. Regarding practice, while some mediators of the relationship between ACEs and poor health are likely environmental and beyond the power of the individual clinician to resolve, growing research suggests that trust in the medical profession is subject to clinical intervention. For instance, Martin and colleagues [27] revealed that a medical professional's communication style is a predictor of trust in the provider, suggesting that communication skills training programs targeting emotion handling and rapport building are promising strategies to gain more trust from ACE victims. Additional trust building intervention techniques already used in some mental health practices include desensitization efforts to help abuse victims manage their suspicions of providers [28]. Furthermore, interventions that de-emphasize the hierarchical nature of the medical professional-patient relationship may also moderate the negative relationship between ACEs and trust in the medical profession. One such intervention could include the incorporation of peer support programs into medical practices treating ACE victims [29]. Fully incorporating such intervention elements into all forms of healthcare delivery may reduce the negative impact of ACEs on long term health by reducing distrust in medical professionals.

Regarding research, future studies involving a larger sample would enable researchers to better discriminate which ACEs are the strongest predictors of lower trust in the medical profession.

For example, because of our small sample, respondents were grouped according to the presence of 1 or more ACEs versus 0 ACEs. Within a larger sample, individuals could be subdivided into unique groupings of ACEs for an examination of certain combinations of ACEs and their predictive power on trust in the medical profession. Moreover, additional studies are needed to determine the stability of the predictive model of ACEs on trust in the medical profession. Although there is no theoretical reason to think that the relationship between ACEs and trust in the medical profession is not generalizable, further research is needed to confirm the stability of the model.

Additional studies are also needed to test the theorized mediation effect of trust in the medical profession on ACEs and poor health. To do so, an overall health outcome variable would need to be captured, such as subjective perceptions of health or objective manifest variables such as cardiovascular risk, mortality, etc. in order to study their relationship to ACEs and trust in the medical profession. Such research would determine if trust in the medical profession indeed mediated the established relationship between ACEs and such health outcomes. When considering the sizable research establishing the relationship between ACEs and poor health, combined with this study indicting the predictive power of ACEs on lower trust in the medical profession, we have confidence in the proposed mediation model. However, additional testing is needed to fully support the theory. Moreover, even if lower trust in the medical profession proves to be a mediator between ACEs and poor health as the data suggests, additional studies are needed to determine the relative strength of lower trust in the medical profession as a predictor of poor health in relation to other environmental variables such as nutrition, stable housing, ability to pay for care, etc. It may be that samples taken from individuals of a higher SES with access to such resources would reveal that a resource rich living environment is a buffer of the relationship between ACEs and trust in the medical profession.

CONCLUSION

Our results introduce another variable to consider when contemplating the correlation between poor health and ACEs: trust in the medical profession. Our results are consistent with the theory relationship between ACEs and poor health may be mediated by trust in the medical profession. Such a finding is particularly important to medical professionals serving in community health settings delivering care to populations lower in SES where ACEs are known to occur at higher rates [20]. Thus, the negative impact of ACEs on trust in the medical profession is likely more acute in lower SES communities, a fact to be taken into account by medical professionals serving such communities. Despite the sobering nature of our results, we are hopeful because while many of the environmental factors contributing to the poor health of ACE victims are beyond the control of medical professionals within a clinic, medical professionals have the ability to develop better practice models that increase trust. Our data suggests a need to expand the use of such approaches in all healthcare practices that serve ACE victims.

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