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Title: Adverse childhood experiences, adult anxiety and social capital among women in rural Kenya

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Abstract:

Hundreds of millions of people suffer anxiety disorders globally, demonstrating need for scalable and effective interventions. Adverse childhood experiences contribute to this mental health burden. The stress-buffering hypothesis, which posits social factors moderate prior adversity and subsequent mental health outcomes, provides one theoretical avenue to consider observations that group-based microfinance programs improve social capital.

We investigate associations between adverse childhood experiences, generalized anxiety among adults and social capital associated with participation in a group-based microfinance program in rural Kenya. Adult participants (n=400 women) responded to standardized measures of childhood adversity in June 2018, group-affiliated social capital and generalized anxiety in June 2019. Cumulative adverse childhood experiences predicted higher anxiety, which was statistically moderated by the presence of group-affiliated interpersonal trust. This study is the first to find social capital associated with participation in a group-based microfinance program statistically moderates expected associations between adverse childhood experiences and adult generalized anxiety. Future study should be conducted using a cluster-randomized control design to further assess the potential of this intervention method to ameliorate associations between past adversity and current mental health.

Keywords: generalized anxiety; Sub-Saharan Africa; Adverse Childhood Experiences; buffering hypothesis

Introduction

Globally, over 300 million people were living with an anxiety disorder in 2019, accounting for nearly 29 million disability adjusted life years (Yang, Fang, Chen, Zhang, Yin, Man, Yang & Lu, 2021). Anxiety disorders are among the most common mental health burden globally (Stein, Scott, de Jonge, & Kessler, 2017), and are 40% more common among women compared to men (Yang et al., 2021). Generalized anxiety disorder, marked by excessive worry, cognitive avoidance, and intolerance of uncertainty, is highly comorbid with depression, suicidality, and subtypes of anxiety (San Too et al., 2019; Pollack, 2005; Dugas, Marchand, & Ladouceur, 2005).

A recent systematic review found only one study within sub-Saharan Africa assessing associations between child maltreatment and adult anxiety, though this study produced similar results to data collected elsewhere (Gardner, Thomas & Erskine, 2019). Child maltreatment, including experiencing sexual abuse, physical abuse, and neglect, are consistent predictors of adult anxiety (Gardner et al., 2019). Global meta-analyses show the odds of experiencing anxiety as an adult increase 68%, 90%, 56%, and 34% for adults who report the presence of any maltreatment, sexual abuse, physical abuse and neglect during childhood (respectively; Gardner et al., 2019). Globally, 36% of children experience emotional abuse, 22% of children experience physical abuse, 16% of children experience neglect and 18% of girls experience sexual abuse (Gardner et al., 2019). Understanding how to mitigate the impact of child maltreatment on adult mental health is necessary, even while efforts continue to prevent child maltreatment altogether.

The “stress-buffering hypothesis” was first proposed by Cohen & Wills in 1985 as a potential explanation for why social support and network characteristics sometimes are associated with improved mental health outcomes for people experiencing distress (Cohen & Wills, 1985). Under the stress-buffering hypothesis, social support and related variables help people who have faced adversities in life access coping resources, reducing the impact of life adversities on mental health challenges. Statistically, Cohen &

Wills (1985) demonstrate the test for the stress-buffering hypothesis is one of statistical moderation. That is, when the assessed social support variable is present or higher, the relationship between adverse experience and subsequent mental health challenges will be weaker.

In contrast to the stress-buffering hypothesis, Cohen & Wills (1985) also propose a main effects model. In the main effects model, access to social resource access works independently of pathways between prior adversity and future stress. The central question regarding whether access to social resources is either a main effect or moderating effect relates to whether the association between prior adversity and future poor outcome significantly differs in magnitude when social resource access is higher.

There are multiple hypothesized mechanisms by which better access to social resources may buffer previous adversity and future poor outcomes. Research shows the risk of poor adult mental, physical, social and economic health substantially increases following childhood adversities – including forms of abuse, neglect and household dysfunction (Felitti et al., 1998; Hughes et al., 2017). Biological, cognitive, and psychosocial mediators have been proposed for the consistent relationship between childhood adversities and poor outcomes among adults, each of which is influenced by the presence of higher social resources (Fox et al., 2015; Aafies-van Doorn et al., 2020; Weems et al., 2021; Finlay et al., 2022). Neural reactivity to perceived threats is lower in the presence of reliable, competent, caring social others (Coan et al., 2017). Cognitive functioning is better and more durable among adults with better social relationships (Kuiper et al., 2016). Higher access to social resources predicts more positive emotions and subsequent behavioral, cognitive, and social outcomes (Mikulincer & Shaver, 2020). Thus, within the nexus of adverse childhood experiences and subsequent adult anxiety, better access to social resources may help compensate for earlier childhood deficits through biological, cognitive or psychosocial mechanisms.

Among the many studies lending empirical support to the stress-buffering hypothesis are those that find higher social support in adulthood statistically moderates associations between adverse childhood experiences and later life mental disorders. Von Cheong, Sinnott, Dahly and Kearney (2017) in Ireland found that perceived social support moderates the association of adverse childhood experiences and depression of older adults, aged 50-69 years. Similar findings were found from the Behavioral Risk Factor Surveillance System in the United States showing social and emotional support buffers the association between adverse childhood experiences and current depression among adults (Brinker & Cheruvu, 2017). A study among African American mothers demonstrated family social support moderates the association of maternal adverse childhood experiences and externalizing behaviors of their young children (Hatch, Swerbenski, & Gray, 2020).

Social capital, denoting access to resources within a social network, has been evaluated as a potential buffer of associations between adversity and health outcomes. In main effects models, higher social capital predicts better mental and physical health outcomes, including less anxiety (Ehsan, Klaas, Bastianen, & Spini, 2019). There is a paucity of interventions that focus on generating social capital, and scant experimental evidence assessing social capital as a potential buffer of the impact of adversities on mental health (Flores, Fuhr, Bayer, Lescano, Thorogood, & Simms, 2018). Evidence regarding the buffering potential of social capital is limited, though to the extent social capital registers integration within supportive social networks, and reliable access to informational, emotional and instrumental support, social capital should operate similarly to other social support variables. Trust and social cohesion are two indicators of access to social network resources, and often utilized as measures of cognitive social capital (Glanville & Story, 2018; An & Western, 2019).

Data support the hypothesis that social capital may buffer associations between adversities and undesired outcomes, but are largely restricted to cross-sectional, non-population based, or dyadic relationships. Cross-sectional data of older adults in Japan showed social capital may protect against cognitive decline in older age (Murayama et al., 2019). Research with American employees found workplace social capital statistically modifies associations between workplace stress and smoking (Sapp, Kawachi, Sorensen, LaMontagne, & Subramanian, 2010). Neighborhood social capital has been shown to moderate associations between maternal depression and adolescent behavioral problems (Delany-Brumsey, Mays & Cochran, 2014). Maternal stress has been shown to predict emotional over-eating among children, especially in the context of lower maternal social capital (Mandelbaum et al., 2020).

Within the past decade, research has shown that social capital is a common byproduct of group-based microlending processes (Sanyal, 2009; Goodman et al., 2021). Group-based microlending refers to a range of practices whereby groups of often marginalized participants, most commonly women, engage in financial behaviors to support access to small amounts of money for economic development purposes. Through increased affiliation networks, familiarity, and mutual dependence, social capital – conceptualized as the presence of interpersonal group trust, mutual benefit and normative influence – may grow through group-based microlending networks (Sanyal, 2014). The finding that social capital is an emergent property of group-based microlending practice is salient to global public health since there are over 175 million participants in such programs globally (D'espallier, Gue'rin, & Mersland, 2011).

Intervention Description

This study uses longitudinal cohort data from participants within a group-based microlending program set in semi-rural Kenya. The program, called Kuja Pamoja kwa Jamii (abbreviated *KPJ*; Come Together to Belong in English), uses a two-generational strategy to strengthen the capacity of families and communities to care for children returning from or at risk of migrating to life on the street (Goodman et al., 2021). The program recruits a focal family of a child who has been identified as living on the streets, and desiring to come back to the home environment. The focal family recruits between 25-29 other families to form an internal lending group, whereby members save $0.20-$0.50 each week to make available to other members as a low-interest loan. As others in the village recognize the benefits of participating in this group activity, they are invited to participate by forming their own groups of 25-30 members. The groups meet weekly, and rotate who may facilitate group procedures each week. Participants with numeracy skills record payments into and out from the pooled funds. Lessons each week cover a range of activities including business development, early childhood development, farming skills, rights of women, maternal/child health, and water access issues.

Study Aim

This study aims to determine (1) whether adverse childhood experiences predict later anxiety among women participating in the KPJ program, (2) whether higher program-associated social capital predicts lower anxiety (i.e. test the "main effects" model) and whether program-associated social capital moderates associations between adverse childhood experiences and later anxiety (i.e. test the "stress-buffering" hypothesis).

Methods

Study design & Sample selection

Participants for this study were recruited in June 2018 during KPJ group meetings. In June 2018, there were 5 villages participating in the program, ranging in duration in the program from 0 to 16 months.

Women participating in the program were invited to draw a piece of paper from an opaque bag, with some pieces of paper indicating the women were selected ("1") and other pieces of paper indicating the women had not been selected ("0"). Seven women from each group were selected this way to participate. Five percent of the originally selected 470 women were replaced due to refusal. One year later, June 2019, these women were approached again and invited to participate in another round of interviews. Of the original 470 participants, 7.2% had dropped from the program, 1% were unavailable due to death, moving or terminal illness, and 5.2% were unavailable the week of the follow-up interviews. Thus, 400 women participating in the program were interviewed in June 2018 and June 2019. All interviewers were young women studying at nearby Chuka University.

Paper-based survey questionnaires were administered by women college students in the local language, Kimeru, using validated scales and indices translated into Kimeru and back translated into English for comparison and refinement. Interviews were conducted at the meeting location on the day of the usual weekly group activities. Data were double-entered into an electronic database (EpiData; Christiansen & Lauritsen, 2010).

Measures

Outcome measure

Generalized anxiety was measured using the 7-item Generalized Anxiety Disorder scale (GAD-7; Spitzer, Kroenke, Williams & Lowe, 2006). The GAD-7 prompts respondents to review their last 2 weeks, and identify the frequency with which respondents have experienced "feeling nervous, anxious or on edge," "not being able to stop or control worrying," "worry too much about different things" and other items related to excess and unproductive worry. The scale ranges from not at all (0) to nearly every day (3). The GAD-7 has been used in many different cultural and language contexts (Plummer, Manea, Trepel & McMillan, 2016), and had a strong single-factor solution with good reliability in the present context (α=0.81). Item totals were averaged and standardized for present analysis; consequently, the measure indicates frequency of symptoms of generalized anxiety rather than presence of diagnosed generalized anxiety. Generalized anxiety was measured during the second data collection period in 2019.

Exposure measure

Adverse childhood experiences were measured using a 8-item index of experiences potentially occurring before the participant turned 18 years. These 8 experiences included emotional abuse, physical abuse, sexual abuse, emotional neglect, parental death or desertion, witnessing intimate partner violence, living with someone who experienced depression or suicide, living with someone who was imprisoned, and living with someone who used illicit substances or excessive alcohol. Items were taken from the CDC-Kaiser ACE scale (Felitti et al., 1998). Responses to each item was binary, and combined to produce an index of cumulative exposure to adverse childhood experiences. These items were measured at the first time period in 2018.

Moderating measures

To assess whether social capital moderated the association between adverse childhood experiences and anxiety, we measured trust and group cohesion in 2019.

Trust was measured using two versions of an item from the World Values Survey: "generally speaking, would you say that most people ____(within your village / within your KPJ group)____can be trusted or you can't be too careful in dealing with people?" The item was recorded on a binary response option (trust vs. distrust). To assess whether any observed associations was due to dispositional trust or localized

to the specific KPJ group, we included two versions of the item – the first adapted to "people within your village" and the second adapted to "people within your KPJ group." This decision follows prior precedent to assess generalized trust or trust within a specific interpersonal setting. Previous research in Ghana using similar items demonstrated that interpersonal trust, but not generalized trust, is significantly associated with better subjective well-being (Sulemana, 2015). The trust item of the World Values Survey is positively correlated with experimentally tested trust, and predicts life satisfaction across countries with varying economic levels (Johnson & Mislin, 2012; Mikucka, Sarracino, & Dubrow, 2017).

Entitativity, a proxy for group cohesion, was measured using the single-item visual analogue scale developed by Gaertner & Schopler (1998). The scale presents six sets of five circles that move increasingly close to each other. The central circle represents the respondent, with the other four circles representing members of one's KPJ group. The sixth set includes an additional circle representing one's KPJ group, with all five circles fully enclosed in the group circle. Accordingly, there are 6 response options reflecting the dynamic from furthest apart to closest together and defined by membership within the KPJ group, with higher numbers reflecting a stronger sense of being an entity (group cohesion). This measure has been utilized widely with consistently high predictive reliability, and among various types of groups (Hornsey, Olsen, Barlow & Oei, 2012). Within group-support programs, this single-item visual analogue scale of entitativity predicts improved psychotherapeutic outcomes (Hornsey et al., 2012).

Control variable

Respondent age in years, years of completed formal education and wealth index were used to control for other socioeconomic factors. Wealth index was measured using an index of 8 potentially owned goods and services: electricity, radio, television, mobile phone, computer, refrigerator, watch and bicycle. Wealth indices are valid rapid measures of household wealth in sub-Saharan Africa (Hargreaves et al., 2007). Control variables were included from the second data collection period in 2019.

Data Analysis

Fixed effects linear regression modeled standardized GAD-7 using four different approaches, all including control variables. First, we analyzed associations between cumulative and separated adverse childhood experiences. We assessed ACEs separate and cumulatively to determine whether anxiety was predicted by a specific experience, or as a dose response to more accumulated childhood adversity. Second, we added the potentially moderating social capital variables. Third, we assessed for moderation between potential moderating variables that remained in the model by creating an interaction term between these variables and cumulative adverse childhood experiences. Significant interaction terms were depicted in graph format to understand the moderation better. We applied a moderation approach, rather than a mediation approach, to follow Cohen & Wills' (1985) proposal that moderation terms reveal potential buffering of a social support-related variable on the association between adversity and mental distress. Fixed effects were calculated to control for unobserved heterogeneity at the group and village levels.

Compliance with Ethical Standards

Ethical approval was provided by the ethics committee at Maua Methodist Hospital prior to data collection in 2018. All respondents provided informed consent prior to participating in the study and received no direct remuneration for their participation. Respondents were interviewed at the location of their weekly group meeting, but at least 50 meters away from other participants to preserve anonymity. There were no instances of respondents knowing the nursing students who conducted the interviews. The

Institutional Review Board at the University of Texas Medical Branch provided ethical exemption for the analysis and publication of deidentified data.

Results

Table 1 provides univariate descriptions of outcome, potential moderator, independent and control variables. The unstandardized outcome, anxiety, mean was 1.08 on a 4-point scale. The most common adverse childhood experience reported was emotional abuse (67%), and the least reported was sexual abuse (23%). The mean number of ACEs reported was 4.4. The most commonly experienced adverse childhood experience was emotional abuse (66.8%, 95%CI: 62.2-71.5%). The least commonly experience adverse childhood experience was sexual abuse, though more than 1 in 5 respondents reported this childhood experience.

Mean age was 42.6 years. Mean education was 4.4 years of formal schooling. The mean wealth index was 2.4.

<Insert Table 1 here>

Table 2 provides the two models regressing anxiety (standardized) on separate and cumulative ACEs. When considered separately, only living with someone who suffered from depression or suicide predicted increased anxiety in adulthood. When considered cumulatively, each additional adverse childhood experience increased the anxiety by 0.1 standard deviations.

<Insert Table 2 here>

General community trust did not predict levels of general anxiety, though group entitativity and interpersonal trust predicted lower levels of general anxiety. Respondents who trusted other members of their group reported

<Insert Table 3 here>

Figure 1 depicts the interaction between group trust and the ACE-anxiety association. Each quartile increase in cumulative ACEs predicts higher anxiety. The ACE-anxiety slope in the presence of group trust is significantly steeper than in the absence of group trust, as anxiety is substantially lower among women who have experienced fewer ACEs and who report group trust. Women who experienced the most ACEs have the same degree of anxiety regardless of whether they trust their KPJ group.

<Insert Figure 1 here>

Discussion

This study aimed to determine whether reporting adverse childhood experiences among women in rural Kenya (1) predict later generalized anxiety; (2) whether social capital measures are associated with generalized anxiety; and (3) whether social capital moderates associations between adverse childhood experiences and later generalized anxiety.

We found that only one adverse childhood experience predicted higher anxiety a year later - reporting the presence of depression or suicide among household members. It is probable, though beyond the scope of this study to verify, that family genetic inheritance contributes to some of this association. Genetic analysis shows around 30% of current anxiety symptoms may be attributed to genetic factors (Purves et

al., 2020). Future research may endeavor to parse out contributions to anxiety that are genetically-linked or products of the social environment among people in rural sub-Saharan Africa.

When aggregated, adverse childhood experiences cumulatively predicted significantly higher generalized anxiety among respondents a year later. This observation supports nearly universal findings that early cumulative adversities may create "toxic stress" with repercussions throughout the lifespan (Shonkoff et al., 2012; Lindert, von Ehrenstein, Grashow, Braehler, & Weisskopf, 2014). The data add to observations from South Africa that adults in sub-Saharan Africa who report more child maltreatment experience higher levels of anxiety (Slopen, Williams, Seedat, Moomal, Herman & Stein, 2010). The finding supports the need to monitor not only specific adverse experiences but also cumulative totals of adversities. Previous research has found generalized anxiety produces substantial societal costs through decreased work productivity, increased demand of health services, and comorbidities with other mental and physical health conditions (Wittchen, 2002; Zhu, Zhao, Ye, Marciniak, & Swindle, 2009; Bereza et al., 2012). This study strengthens the need for further research on the societal costs of adverse childhood experiences, potentially generated through worse lifetime mental health.

Two forms of group-affiliated social capital – interpersonal trust and group cohesion – predicted decreased generalized anxiety. This finding is consistent with the *main-effects hypothesis* presented by Cohen & Wills (1985; Ehsan, Klaas, Bastianen, & Spini, 2019). Further research should consider whether these measures are impacted by group participation or if they merely reflect other underlying psychological constructs. Given other findings that group-based microlending organizations improve social capital (Goodman et al., 2021), it is likely group-affiliated social capital mediates some effect between group participation and improved mental health but it is beyond the scope of present data to make this assertion. This question warrants investigation within the context of a cluster randomized control trial, where researchers should also explore why this might be the case. Increased access to emotional, instrumental, and informational support may reduce generalized and specific anxieties, though this possibility requires further investigation.

Group-affiliated trust moderated associations between cumulative adverse childhood experiences and anxiety. Specifically, individuals with lower levels of adverse childhood experiences experienced less anxiety if they expressed trust of members of the microfinance group. Findings suggest influence of higher levels of adversity on anxiety may not be buffered by group trust – recognizing these data cannot establish causation in any direction. Findings do support the stress-buffering hypothesis at lower levels of childhood adversity. Secondary analysis showed group trust did not moderate associations between living in a household with someone experiencing depression or suicide and later anxiety. A cluster-randomized trial could support further investigations into adversity, group-affiliated social capital and anxiety.

Given the high frequency of reported adverse childhood experiences and their association with anxiety, it is a global priority to understand this association better. This understanding should be based within the cultural and social framework present within Kenyan society, and other countries across sub-Saharan Africa. Collectivist cultures may present buffer childhood adversities better, and this should be explored. However, as observed in these data and previously in Ghana, it is not generalized trust that predicts better mental health but interpersonal trust (Sulemana, 2015). As such, interventional efforts should seek to strengthen interpersonal trust and group cohesion. Data here suggest interventional efforts of this sort may also moderate associations between past adversity and present anxiety. One potential target for intervention and basic research is perceived control.

Limitations

The present study is bolstered by a longitudinal design, wherein self-reported childhood adversities predicted anxiety one-year later. However, there is still the possibility of residual confounders exerting influence on self-reporting rates of adverse childhood experiences and anxiety. Given the moderating influence of interpersonal group trust on the association between adverse childhood experiences and anxiety, self-reporting biases would vary by interpersonal group trust but not other measures of social capital and it is not clear why this would be the case. Causation is not established by longitudinal data. It is unethical to randomize allocation of children to adversities to follow their experience of anxiety in later life. Whether, and how, group interpersonal trust causally moderates the association between childhood adversities and later anxiety is not established by present data; it is possible to randomly allocate program participation at a village-level and assess moderating effects of interpersonal trust. More robust study of this sort requires a larger budget.

Conclusion

This study contributes to the existing literature in three ways. First, data show earlier reports of adverse childhood experiences predict later anxiety among women in rural Kenya. This finding is consistent with a wealth of research in a variety of settings, though this study is one of few to assess for this association among women in rural sub-Saharan Africa. Second, group-affiliated social capital predicts lower anxiety among women participating in a complex group-based microfinance intervention in a main effects statistical model. Third, as predicted by the stress-buffering hypothesis, at least one form of social capital moderates the association between adverse childhood experiences and adult anxiety. Group-affiliated interpersonal trust was associated with lower adult anxiety among respondents with fewer adverse childhood experiences. Further research is required to assess the potential causative benefits of the complex group-based microfinance intervention to pathways between stressors and improved mental health. This study highlights the possibility that globally popular group-based microfinance schemes may promote mental health directly through improving mental health and indirectly by demoting the impact of adversity on mental health.

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Table 1: Univariate description of model variables

		Mean	%	95% CI	
Anxiety		1.08		1.01	1.15
Trust, community	398		22.86%	18.72%	27.01%
Trust, KPJ	398		55.03%	50.12%	59.93%
Entitativity, KPJ	395	5.3		5.19	5.4
Emotional abuse, ACE	395		66.84%	62.17%	71.50%
Physical abuse, ACE	395		35.95%	31.20%	40.70%
Sexual abuse, ACE	394		23.35%	19.15%	27.55%
Emotional Neglect, ACE	394		37.31%	32.51%	42.11%
Parental divorce, ACE	393		33.42%	28.73%	38.10%
Parental death or desertion, ACE	393		56.38%	51.44%	61.30%
Witness IPV, ACE	389		50.00%	45.00%	55.00%
Live with someone who had					
Substance Use Disorder	397		62.22%	57.43%	67.01%
Depression or Suicide	396		39.39%	34.56%	44.23%
Been Imprisoned	397		41.56%	36.69%	46.43%
Cumulative, ACEs	398	4.44		4.24	4.64
Age, years	395	42.59		41.14	44.04
Education level	398	4.09		3.77	4.42
Wealth index	398	2.4		2.26	2.53

Notes: Univariate descriptions of model variables. Anxiety was measured using GAD-7. Moderator variables include generalized trust, interpersonal trust, and group entitativity. Belonging measured on 4-point scale. Expectation of mutual support measured on 6-point scale. Entitativity measured on 6-point scale. Measures that prompted respondents to consider the broader community are marked such, as are measures that prompted respondents to only consider their KPJ group. Adverse Childhood Experiences, measured a year earlier than other variables, are described. Separate ACEs are described by percentage reported as present before 18 years of age, and cumulative ACE score provided as an index out of 10.

Table 2: Standardized Anxiety regressed on Adverse Childhood Experiences

	Coef.	95% CI		Coef.	95% CI	
Emotional abuse, ACE	0.03	-0.23	0.28			
Physical abuse, ACE	0	-0.27	0.27			
Sexual abuse, ACE	0.21	-0.07	0.49			
Emotional Neglect, ACE	0.09	-0.15	0.34			
Parental divorce, ACE	0	-0.25	0.26			
Parental death or desertion, ACE	0.03	-0.2	0.27			
Witness IPV, ACE	0.17	-0.08	0.42			
Live with someone who had						
Substance Use Disorder	0.15	-0.1	0.39			
Depression or Suicide	0.3*	0.06	0.54			
Been Imprisoned	0.01	- 0.23	0.25			
Cumulative, ACEs				0.1***	0.04	0.15
Education level	-0.04*	0.09	0	0.04*	0.09	0
Age, years	0	-0.01	0.01	0	-0.01	0.01
Wealth index	-0.05	-0.14	0.04	-0.07	0.15	0.02

*Notes: Two models show fixed effects regression coefficients modeling standardized GAD-7 on adverse childhood experiences separately (Model 1) and cumulatively (Model 2). * p<0.05. *** p<0.001.*

Table 3: Social Capital moderation of ACE-Anxiety association

	Model 1			**Model 2**		
	Coef	95% CI		Coef	95% CI	
Trust, general community	-0.1	-0.36	0.15			
Trust, KPJ	-0.27**	-0.47	-0.08	-0.76**	-1.23	-0.29
Entitativity, KPJ	-0.19***	-0.27	-0.1	-0.38**	-0.62	-0.14
ACEs, cumulative	0.09***	0.04	0.13	-0.19	-0.44	0.07
Cumulative ACEs x Group Trust				0.11*	0.01	0.21
Cumulative ACEs x Entitativity				0.04	-0.01	0.09
Age, years				0	-0.01	0.01
Education level				-0.04*	-0.08	-0.01
Wealth index				-0.06	-0.13	0.01

Notes: Fixed effects regression of standardized GAD-7 on social capital variables, with moderation testing. * p<0.05. ** p<0.01. *** p<0.001. Model 1 evaluates associations between ACEs, Anxiety and includes the three social capital measures. Model 2 assesses potential moderation of the ACEs-Anxiety association by social capital variables significantly associated with anxiety.

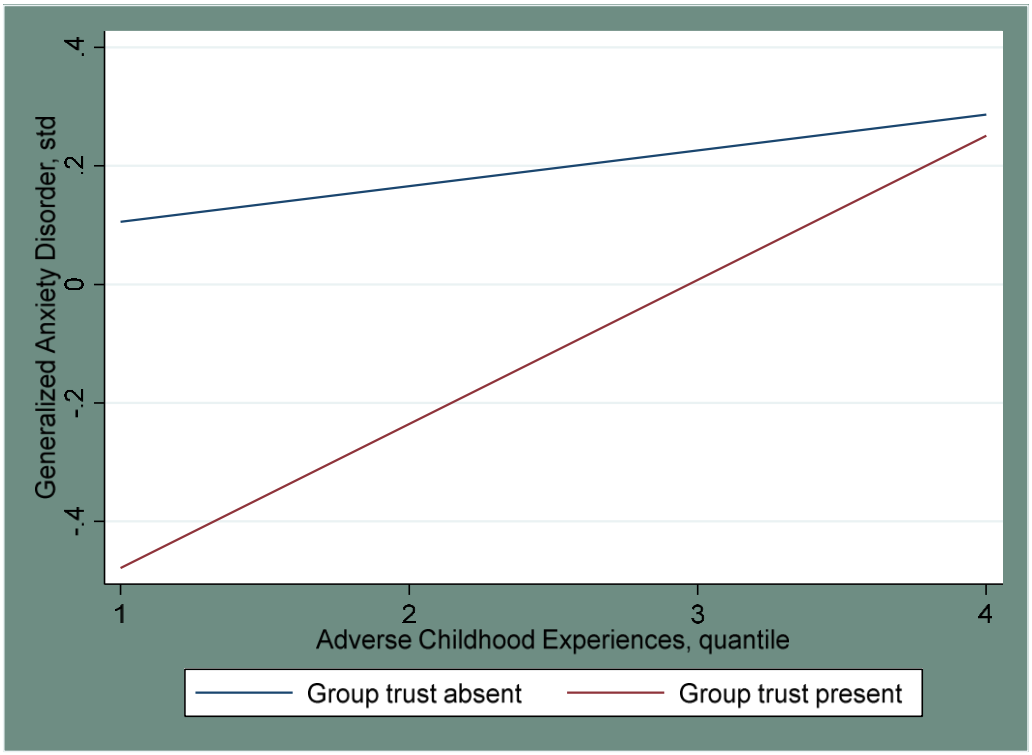

Figure 1: Group trust moderates associations between Adverse Childhood Experiences (T1) and Generalized Anxiety (T2)