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A longitudinal investigation of the family stress model in South Africa

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Abstract

Scholars across disciplines underscore the importance of exploring the cascading impacts economic disadvantage has on parenting practices and adolescent well-being. While scholarship identifies multi-level consequences such disadvantage has on parenting practices and adolescent mental health, there is a lack of empirical insight into these consequences on families residing in low- and middle- income countries (LMICs) with attention to socio-cultural influences. This study leverages the family stress model (FSM) to examine the association between economic distress, community violence exposure, and parenting practices (parental monitoring, positive parenting, and corporal punishment) on adolescent externalizing behaviors among 236 adolescents-caregiver dyads in South Africa. It further expands the FSM framework to investigate whether attitudes towards corporal punishment impact the relationship between exposure to corporal punishment and adolescents' externalizing behaviors, over time. Finally, we test these associations between adolescents and caregivers, separately, to understand whether these relationships vary by informant. Prospective longitudinal data was analyzed among adolescents and caregivers using multiple linear regression. Results were somewhat inconsistent with previous scholarship, with adolescent-reported parental monitoring emerging as the only significant parenting practice associated with externalizing behavior over time. Additionally, attitudes towards corporal punishment moderated the relationship between corporal punishment and externalizing behavior, only among adolescents over time. Among caregivers, no significant associations emerged between parenting practices and adolescent externalizing behaviors, over time. Programmatic and empirical implications are discussed from these findings.

Keywords: Family stress model, financial distress, adolescence, South Africa, attitudes

1.Introduction

The deleterious impacts of economic disadvantage on the health and well-being of adolescents are well-documented globally (Chaudry & Wimer, 2016; Nurius et al., 2015). While literature consistently supports the direct linkages economic disadvantage has on adolescents' health and well-being, increasing scholarship focuses on quantifying the cascading impacts economic disadvantage has on the broader influences salient for adolescents' development such as parenting practices, peer relationships, and community safety. The family stress model is one such theory that provides evidence as to the ways in which economic disadvantage confers multi-level disparities especially among minoritized individuals. Specifically, the family stress model posits that economic disadvantage leads to compromised parenting practices, which ultimately impacts children's development (Castillo et al., 2020; Gershoff et al., 2002, 2018; Krishnakumar et al., 2014; Lokot et al., 2020; Nomaguchie & Milkie, 2020; Schenck-Fontaine et al., 2020).

The family stress model is a particularly useful framework for understanding parenting practices through a global perspective given its emphasis on exploring the impact that broader indicators of disadvantage have on harsh and positive parenting practices. Indeed, a growing number of countries have passed bans on corporal punishment against children in schools and homes over the last decade (Elgar et al., 2018) to combat the high rates of corporal punishment reported globally (Cuartas et al., 2019). Consequently, policymakers have sought to implement effective programming that simultaneously reduces harsh parenting practices and bolsters supportive parenting with attention to cultural and structural factors that impact such practices. These research, practice, and policy goals have been further solidified with the UN's Sustainable Development Goals, which name eliminating violence against children in schools, homes, and in

their communities as critical to achieving health and equity for youth by 2030 (Cappa & Petrowski, 2020; World Health Organization [WHO], 2016).

Despite the global policy initiatives enacted over the last several years, there remains a dearth of empirical research longitudinally investigating the multifaceted processes contextualizing parenting practices and subsequent adolescent well-being, over time, in LMICs relative to HICs (Bornstein et al., 2023; Gershoff et al., 2002; Gershoff, 2013; Gershoff & Grogan-Kaylor, 2016; Lansford et al., 2014, 2016; Lokot et al., 2020; Masarik & Conger, 2017). Indeed, as identified in Cuartas's (2023) rapid review, a recent narrative review of prospective studies investigating corporal punishment and child outcomes (Heilmann et al., 2021) found that fewer than 5% of the studies reviewed included children in low- and middle-income countries (LMICs; Cuartas, 2023). Currently, only one study to date investigates this relationship longitudinally among adolescents in sub-Saharan Africa (Zietz et al., 2022), despite this region comprising the world's fastest growing adolescent population with one-fourth of its total population aged 10-19 (UNICEF, 2022). South Africa specifically represents an important context within SSA for understanding this relationship given the disproportionately high rates of HIV/AIDs among adolescents and caregivers that confer significant comorbid mental health challenges among adolescents (Zanoni et al., 2016). This is further compounded by the ongoing effects of apartheid, including resource deprivation and other forms of adversities children and adolescents experience, such as parental loss, community violence exposure, and food insecurity (Cluver et al., 2015).

While there is relatively consistent research identifying the impact economic disadvantage has on parenting practices (Conrad et al., 2019; Masarik & Conger, 2017), and the subsequent negative effects corporal punishment in particular has on children's mental health

(Cuartas, 2023), burgeoning studies also find that various socio-cultural factors play a critical role in what impacts parenting practices and how these, in turn, contribute to developmental outcomes. For instance, empirical studies find that perceived justness of harsh parenting can dampen the potential harm it has on children's development (Lokot et al., 2020). Other studies find that low-resourced settings may differently impact how caregivers enact both harsh and positive parenting practices (e.g., engaging in both simultaneously to promote safety of children in precarious settings) compared to caregivers from high-resourced settings (Germán et al., 2013; Wadsworth et al., 2013). Together, this emphasizes the need to better understand the contextual and localized needs of families that impact parenting, while also attending to the broader influences salient for supporting caregivers' capacities globally (Cuartas, 2023).

Of the emerging research that strives to better understand the socio-cultural and structural variables impacting parenting practices, there remains a lack of research in LMICs that incorporate such multilevel factors into a single study (Cuartas, 2023; Devlin et al., 2018; Hoff & Laursen, 2019; Krishnakum et al., 2014; Nomaguchi & Milkie, 2020). For instance, while there is a strong empirical base investigating the linkage between economic disadvantage, harsh and positive parenting practices, and outcomes for children and adolescents (Masarik & Conger, 2017), often these studies neglect to incorporate other culturally relevant indicators into their models, such as caregiver or children's attitudes towards parenting practices. On the other hand, while there is more recent scholarship investigating the impact culturally relevant indicators have on the relationship between parenting practices and child outcomes (Bornstein, 2012; Smetana, 2017), few of these studies incorporate structural indicators such as economic disadvantage and community violence exposure into their understanding of factors that promote adolescent well-being. Additionally, of the existing literature that investigates multilevel factors impacting

parenting and, the subsequent impact this has on child development within LMICs, most studies examine these effects among younger children (i.e., aged 3-5) or younger adolescents (i.e., aged 8-13). This neglects a critical population of older adolescents who report ongoing physical discipline in homes and in schools (Deater-Deckard et al., 2019; Yoo, 2019) and, who comprise nearly a quarter of the population today, with the bulk of this group residing in Sub-Saharan Africa (Charbit & Omrane, 2023). Finally, few studies incorporate both children and caregivers' perspectives into analysis. This is an important limitation given the scholarship that finds meaningful differences between children and caregiver reports about the experiences and impact parenting practices have on child well-being (e.g., De Los Reyes & Kazdin, 2005; Kapetanovic & Boson, 2022). Importantly, research finds informant discrepancies increase as children age due to their own identity development and increased independence from caregivers towards other familial or social networks (Kapetanovic & Boson, 2022). This underscores the importance of exploring these relationships across different informants. With more robust and multifaceted studies that integrate the overlapping individual, familial, contextual, and structural variables needed to reduce harsh parenting globally, policy and programming can more effectively be tailored to adolescents across high-need contexts (Atilola, 2017; Devlin et al., 2018).

This longitudinal study strives to fill this empirical gap by investigating whether indicators of poverty and parenting practices also predict externalizing behaviors over time among adolescents from rural and peri-rural villages and townships in South Africa. It further assesses the impact that culturally salient beliefs have on the relationship between parenting and adolescent externalizing behaviors, over time, and whether the relationship between these variables differ between adolescents and caregivers.

1.1 *Family Stress Model*

The family stress model is a robustly supported ecological approach used to understand the structural factors that affect parent practices and subsequent child development (Conger et al., 2000). According to this model, economic distress contributes to parental stress and ultimately compromises parenting practices, such as increased inconsistent or harsh parenting and reduced positive parenting practices. Consequently, the higher reported use of harsh parenting practices and the reduced use of positive parenting practices impacts children's well-being, including higher reported externalizing behaviors (Glatz & Buchanan, 2015; Pinquart, 2021; Ruiz-Hernandez et al., 2018). These economic stressors have been investigated through direct indicators of economic precarity such as caregiver-reported poverty (e.g., income and unemployment), and indirectly through caregivers' reported experiences associated with economic hardship such as acculturation or community violence (Casale et al., 2015; Deater-Deckard et al., 2019; Gardner et al., 2015; Gershoff et al., 2018; Meinck et al., 2016).

While this model has also been empirically tested and supported longitudinally across international contexts (Deater-Deckard et al., 2019; Skinner et al., 2014; Zietz et al., 2022), the existing empirical base remains largely limited compared to studies in high-income countries (HICs) and among younger children specifically (Cuartas, 2023). This model has been further used to investigate the differential impact various parenting practices have on children resulting from economic disadvantage, including in low-resourced settings. Results have been mixed, though, with some studies finding positive parenting practices to be significantly protective, including when delivered alongside harsh or corporal parenting (Cuartas, 2023; Deater-Deckard et al., 2006), while others demonstrate a less or non-significant protective effect from positive parenting when practiced alongside harsh parenting practices (Ward & Lee, 2020). Additionally, despite the criticality of monitoring for adolescents especially, there is limited and, of that exists,

mixed data linking economic disadvantage to parental monitoring (Hoff & Laursen, 2019).

Together, this points to a need to better investigate the family stress model within LMICs and among an older adolescent population, with attention to several parenting practices that may differently impact adolescents' well-being when investigated together.

Additionally, while economic precarity robustly predicts detrimental outcomes on children's development directly and indirectly in accordance with the family stress model, most often economic precarity is measured either as a singular indicator of SES (e.g., poverty or income level) or as a contextual variable associated with poverty (e.g., community violence). Fewer studies - especially in LMICs - incorporate caregiver-reported subjective distress associated with economic precarity or, self-identified access to needed resources (Yoshikawa et al., 2012), despite these constructs capturing important elements of perceived asset needs that can ensure familial safety and stability. One recent study to date investigated the impact that material deprivation had on children's development via parenting practices across five countries (Schenck-Fontaine et al., 2020). This study found that perceived material deprivation was associated with externalizing behaviors and psychological aggression, even when income remained stable. In another recent study examining the family stress model across 10 cultural groups and seven countries, Zietz et al. (2022) found no significant relationship between low household income and caregiver reported economic pressure among Kenyan caregivers; this was the only country and cultural group where this relationship did not exist. Together, this suggests that self-reported distress regarding material and economic assets differs from broader indicators of income and warrants further exploration for understanding its impact on families, alongside other indicators of economic disadvantage consistently supported in the scholarship, such as community violence exposure.

1.2 Attitudes Towards Corporal Punishment

As programs and policies are tailored from HICs to LMICs, cultural attitudes and beliefs about parenting practices have emerged as another increasingly important construct of interest contextualizing parenting practices (Cuartas, 2023; Devlin et al., 2018; Gershoff et al., 2002; Hoff & Laursen, 2019; Lansford et al., 2016; 2018; Lokot et al., 2020). In their recent systematic review investigating social norms and corporal punishment in LMICs, Lokot et al. (2020) found that, overall, normative beliefs and attitudes sustain the use of harsh physical discipline in schools and homes and impacts how children understand these parenting practices. This, in turn, may lessen the negative impact that physical discipline has on children's development. The mechanisms through which it may impact corporal punishment and child outcomes, in particular, varies across studies, however.

For instance, one longitudinal study identified in Lokot et al. (2020) review, found that normativeness predicted the use of corporal punishment across nine countries (Lansford et al., 2018). Other studies also find that the impact of harsh physical and verbal parenting is moderated by perceived normativeness, either by parents (Gershoff et al., 2010) or their children (Gershoff et al., 2010; Lansford et al., 2005). Another study tested perceived normativeness as a mediator between parenting and child outcomes, finding that children's perceptions of maternal hostility mediated the effect of parenting practices and adjustment (Lansford et al., 2010). Emerging qualitative research within LMICs corroborates these findings, with caregivers and children describing how community perceptions and norms impacted the ways that harsh discipline was enacted by caregivers and experienced by children (Patel et al., 2021). Though previous research finds that higher-reported perceived normative views on harsh parenting dampens its effects, other studies find this relationship to be non-significant (Alampay et al., 2017) or, that this

culturally relevant indicator directly impacts children's outcomes. For instance, one study found that parent-reported normative views on corporal punishment predicted children's perception that their parents were neglectful (Lansford et al., 2015). The different ways in which attitudes may impact parenting practices and child development point to a need for additional empirical studies to test these relationships across socio-cultural contexts and among children of different ages.

Recent empirical research also points for a need to incorporate the impact that cultural attitudes towards punishment have on development, alongside co-occurring parenting styles and economic strain among low-resourced communities. Specifically, studies find that, in communities where poverty levels and violence are high, parents may adopt both harsh and positive parenting to protect children from the multiple risks their children face outside of their home (Grusec et al., 2017). This was further explored in Boydell's et al. (2017) qualitative study with impoverished mothers in Uganda, who described using corporal punishment not only to maintain self-respect given extreme poverty, but to protect their children from various health risks. Given the extensive history of class- and race- based oppression in South Africa that has contributed to high rates of unemployment, economic precarity, and HIV/AIDS (Gardner et al., 2015), it is critical to understand how parenting practices are contextualized in this region by economic precarity and socio-cultural attitudes and, how various co-occurring parenting practices further impact adolescents' well-being.

2. Current Study

This longitudinal study strives to fill this empirical gap by investigating whether the family stress model also predicts externalizing behaviors over time among adolescents from rural and peri-rural villages and townships in South Africa. Specifically, this study asks whether two dimensions of economic disadvantage (caregiver perceived economic distress and adolescent-

reported community violence exposure) and three types of parenting practices (corporal punishment, positive parenting, and parental monitoring) predicts adolescents' externalizing behaviors, over time. It further adds to the existing literature by investigating whether attitudes towards corporal punishment moderates the impact that experiencing corporal punishment has on adolescents' externalizing behavior. This is a culturally relevant construct that has yet to be integrated empirically into tests of the family stress model conducted in other LMICs. Finally, we conducted two separate models to explore these predictors and their impact on externalizing behaviors, over time, among adolescents and caregivers separately. Specifically, we ask:

1. Is caregiver reported economic distress and adolescent reported community violence exposure associated with adolescent externalizing behaviors, over time?
2. Are harsh and positive parenting practices associated with adolescent externalizing behaviors, over time, where parenting practices include: corporal punishment, positive parenting practices, and parental monitoring?
3. Do attitudes towards corporal punishment moderate the relationship between corporal punishment and adolescent externalizing behaviors, over time?

From prior research, we hypothesize:

1. Caregiver-reported economic distress and adolescent reported community-violence exposure to be associated with increased externalizing behaviors, over time.
2. Significant association between parenting practices and adolescent externalizing behaviors, over time, with:
 - a. Corporal punishment significantly associated with increased externalizing behaviors.

- b. Positive parenting practices significantly associated with decreased externalizing behaviors.
 - c. Increased parental monitoring associated with decreased externalizing behaviors.
3. Higher reported justification of corporal punishment significantly reducing impact of corporal punishment and externalizing behaviors, over time.

3. Methods

Participants

This study utilizes baseline and post-test data from the control arm of the cluster randomized controlled trial of Parenting for Lifelong Health (PLH) for Adolescents (Cluver et al., 2016; Cluver et al., 2020). PLH for Adolescents was designed to increase positive parenting and reduce child and adolescent abuse. The trial enrolled 552 adolescent-caregiver dyads across 32 rural and 8 peri-urban communities in the Eastern Cape province of South Africa. Families living in the participating communities experienced significant, structural disadvantage such as high rates of poverty and unemployment. Participants included adolescents 10 to 18 years old and their primary caregiver, defined as the person responsible for the child and resided in a household together at least four nights a week. Participants were recruited through referrals from schools, social workers, and other community members, as well as door-to-door recruitment from the study staff. Families were invited to enroll if they endorsed experiencing one of the screening questions such as whether there were fights between the caregiver and their adolescent. While half of the clusters were randomly assigned to a parenting program, the control arm received a 1-day community-based hygiene program. This study utilized data collected from dyads randomized to the control arm of the trial (241 families, with 5 cases of missing data for a final $n=236$; see Supplemental 1).

Procedures

Baseline data (T1) were collected between May and September 2015 prior to program delivery, and post-test data (T3) ~8 months following the end of the 14-week parenting program. A full explanation of the trial and parenting program can be found in the study protocol (Cluver et al., 2016; Cluver et al., 2020). Local, trained research assistants conducted community-based data collection with all participants, including face-to-face interviews with adolescents and caregivers in their homes, schools, or local, shared community spaces. All surveys were available in both English and isiXhosa, with each item on the survey translated and back translated by hired, local research assistants (Cluver et al., 2016). All surveys were conducted on tablets using a Computer-Assisted Personal Interviewing (CAPI) process (Gorbach et al., 2013), which enhances confidentiality and thus disclosure of potentially stigmatizing behavior or experiences (Ward et al., 2018). Participants in the trial received a compensation pack at both baseline and post-test assessments, which included items such as toiletries and food.

Measures

Economic Distress was collected among caregivers at baseline through a five-item survey that assesses caregivers' financial distress over the last month (Sami, 2014; Steinert et al., 2018). These items captured the frequency that caregivers' ran out of essential items pertinent in the region over the last month, including meat, transportation, phone data, and electricity (Morduch, 1995; Townsend, 1995), as well as an additional question created for this study, that assessed how often over the last month caregivers felt worried or anxious about money. The internal consistency was $\alpha = .7641$ and $\omega = 0.7691$.

Community Violence Exposure was assessed by adolescents at baseline by using the Exposure to Violence Scale from the Social and Health Assessment (SAHA) study (Romero et

al., 2018; Ward, 2007). This study used 10 items from the survey that assess how often in the past month youth witnessed community violence (e.g., *how often has your children witnessed someone else being threatened?*) and experienced community violence (e.g., *how often has your children been messed and had their stuff stolen?*). An aggregate score was computed for both subscales to produce one community violence scale. Internal consistency of the community violence exposure scale was $\alpha = .7851$ and $\omega = 0.7793$.

Parenting Behaviors. Baseline adolescent and caregiver-reported parenting behaviors were measured with the Alabama Parenting Questionnaire (APQ) short form. Though there is no psychometrically validated parenting scale in South Africa, the APQ has been used to measure parenting behaviors internationally (Casale et al., 2015; Devlin et al., 2018; Lachman et al., 2014; Ward et al., 2018). To assess different parenting behaviors, three of the four APQ-short subscales, including positive parenting, monitoring, and corporal punishment, were used. The Positive Parenting subscale includes six questions that assesses parents' positive behavior over the last month (e.g., *in the past month you let your teen know when they are doing a good job with something*) and has an internal consistency of $\alpha = 0.8739$ and $\omega = .8836$ (adolescent-reported) and $\alpha = 0.80$ and $\omega = 0.8220$ (caregiver-reported) respectively. For the purposes of this study, five items were dropped from the original 10-item subscale following the CFA due to lower item test correlations and coefficients. Parental monitoring was assessed with 10 questions that asked about caregiver monitoring behaviors (e.g., *You go out without a set time to be home*). Questions are assessed on a 5-point Likert scale ranging from 1 ("*Never*") to 5 ("*Always*"). Adolescent-reported parental monitoring scale had an internal consistency of $\alpha = 0.8173$ and $\omega = 0.8197$, while caregiver reported parental monitoring had an internal consistency of $\alpha = 0.6518$ and $\omega = 0.6661$. Finally, corporal punishment was assessed with three questions that asked

whether and how often caregivers slapped, spanked, and/or hit their child with an object (e.g., *you slap your teen when they have done something wrong*). The corporal punishment subscale had an internal consistency of $\alpha = 0.6522$ among adolescents and $\omega = .6610$ and $\alpha = 0.674$ and $\omega = .682$ among caregivers.

Attitudes Towards Corporal Punishment. Adolescent and caregiver-reported attitudes towards corporal punishment at post-test was assessed using a six-item scale developed for the RCT. This vignette was developed and piloted collaboratively with community members. The scale used for this study provides a brief vignette about a child getting into trouble and, asking caregivers' and youth how it might help to discipline the child, including physically (e.g., slap or spank the child), emotionally (e.g., tell the child his ancestors will punish him), and verbally (e.g., shout at him) on a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree". Higher scores indicate more normative attitudes towards using corporal punishment. The scale was piloted with a small group of children and caregivers prior to the implementation of the RCT, and the internal consistency of this scale was $\alpha = 0.8233$ and $\omega = 0.8460$ among adolescents and $\alpha = 0.8448$ and $\omega = 0.8584$ among caregivers.

Externalizing Behavior was measured using the adolescent and caregiver-reported rule-breaking (17 items) and aggressive behavior (18 items) subscales of the Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1991) at baseline and at post-test. The CBCL has demonstrated strong validity internationally across samples of youth across childhood and adolescence (Cluver et al., 2016; Gershoff et al., 2010; Weisz et al., 1993). Scores were summed across both subscales, with an internal consistency of $\alpha = 0.8504$ and $\omega = 0.8539$ at baseline and $\alpha = 0.8308$ and $\omega = 0.8343$ at time point 3 (adolescent-report) and of $\alpha = 0.8851$ and $\omega = 0.8892$ at baseline and $\alpha = 0.8975$ and $\omega = 0.9015$ (caregiver-report) at time point 3.

3.1. Data Analysis

Statistical analysis was performed using Stata Version 16.1 (StataCorp, 2025).

Confirmatory factor analysis was performed to evaluate the goodness of fit of the theoretical structure of each of the scales. Goodness-of-fits statistics for the confirmatory factor analysis was assessed with the residual analysis. Notably, because the corporal punishment sub-scale only included three items, the goodness-of-fits statistics were not informative; because of that, these results are absent from Table 3 but are now included in the supplementary material. Internal consistency was evaluated with Cronbach's alpha and McDonald's omega. Bivariate correlations were evaluated using the Pearson's correlation coefficient. Multiple linear regression models were fitted to evaluate which factors (specifically, economic distress, community violence exposure, parenting practices, and attitudes towards corporal punishment) were related to externalizing.

In line with the aforementioned research objectives, a first model was fitted such that adolescent-reported externalizing was modelled as a function of caregiver-reported economic distress and adolescent-reported exposure to community violence; adolescent-reported parenting practices (including corporal punishment, positive parenting, and parental monitoring) and attitudes towards corporal punishment; and as a function of adolescent-reported baseline externalizing behaviors. Similarly, a second model was fitted such that caregiver-reported externalizing was modelled as a function of caregiver-reported economic distress and adolescent-reported exposure to community violence; as a function of caregiver-reported parenting practices (including corporal punishment, positive parenting, and parental monitoring) and attitudes towards corporal punishment; and as a function of caregiver reported baseline externalizing and

adolescent age. Both models also included an interaction term of corporal punishment with attitude to corporal punishment.

Mixed effect models were fitted with cluster randomization as a random intercept to verify whether cluster randomization had an effect on the standard errors of the models. Model fit for both models were assessed. Results for both models were non-significant likelihood ratio tests and small inter-class correlations (ICCs), therefore suggesting that accounting for cluster data was not needed for each model. All VIF values were below 5.04, therefore suggesting no serious issue of multicollinearity. Diagnostics observed some non-constant variance in the residuals against the linear prediction, as well corporal punishment and community violence exposure. However, there were no serious deviations; specifically, there was no deviation from normality for residuals or from linearity. Transformations only slightly improved the model fit. Regression results with the transformed variables were similar to the original model and hence we report the results from the original models below.

4. Results

4.1. Intercorrelations and Descriptive Statistics

Pearson's correlation coefficients and summary statistics are reported in Tables 1 and 2. Among adolescent reports, externalizing at baseline correlated moderately with externalizing at post-test. Baseline parenting behaviors showed weak (positive parenting) to moderate (monitoring) association with externalizing at post-test, such that reduced positive parenting and monitoring was associated with increased externalizing over time among adolescent reports. Baseline community violence exposure also showed a weak association with externalizing at post-test among adolescents in this sample, such that higher community violence was associated

with increased externalizing. Attitudes towards corporal punishment and economic distress showed negligible associations with externalizing at post-test.

Among caregiver reports, baseline positive parenting showed a significant association with externalizing over time, with reduced monitoring associated with increased externalizing at post-test. Further, positive parenting at baseline showed a moderate association with externalizing at post-test, such that reduced positive parenting was associated with increased externalizing over time. Attitudes towards corporal punishment, corporal punishment, community violence exposure, and economic distress showed negligible associations with externalizing at post-test among caregiver reports.

4.2. Regression analysis

In the adolescent-reported model, the overall model was statistically significant, $F(9, 226) = 10.26, p < .001, R^2 = .2901$, Adjusted $R^2 = .2619$ (Table 4). Over and above baseline age and caregiver-reported economic distress, and to a lesser extent baseline externalizing, baseline monitoring behavior showed statistical significance with increased monitoring being associated with decreased current externalizing at post-test. The interaction term of baseline corporal punishment and post-test attitudes towards corporal punishment showed an association such that an increase in the product term was associated with a decrease in externalizing (Table 4). Specifically, when post-test ACP is low among adolescents ($m - 1SD = 2.62$, coefficient = 0.25, $SE = .23, p = 0.28$), the relationship between baseline corporal punishment and post-test externalizing behavior over time is positive, though not statistically significant. However, when youth reported medium ACP ($m = 7.66$) to high levels of ACP ($m + 1SD = 12.69$) at post-test, baseline corporal punishment was negatively and statistically significantly associated with subsequent externalizing behavior over time (coefficient = $-.360$, $SE = 0.18, p = .048$ and

coefficient= $-.973$, $SE = 0.28$, $p=.001$, respectively). This means that, though baseline corporal punishment seems unrelated to externalizing behaviors over time for low levels of ACP reported among adolescents, baseline corporal punishment is associated with decreased externalizing behaviors over time for medium to high levels of ACP at post-test. Caregiver-reported economic distress at baseline was also associated with an increase in adolescent reported externalizing behaviors at post-test, while baseline corporal punishment was moderately associated with increased externalizing over time with significance ($p=.04$).

In the caregiver-reported model, the overall model was statistically significant, $F(9, 226) = 10.14$, $p < .001$, $R^2 = .2875$, Adjusted $R^2 = .2592$. See Table 5 for the results of these analyses. In this model, only baseline adolescent age and externalizing were significantly and positively related to externalizing at post-test.

5. Discussion

Scholars increasingly underscore the need to understand the interrelated, multifaceted factors impacted by economic disadvantage, including parenting which has critical implications for reducing violence against children and improving their health and well-being globally. This longitudinal study tests whether indicators of poverty (economic distress, community violence exposure) and distinct parenting practices (corporal punishment, positive parenting, parental monitoring) impact adolescents' externalizing behaviors over time. It further investigates whether attitudes towards corporal punishment moderate the relationship between corporal punishment and externalizing behaviors among this sample of adolescents and caregivers ($N=236$), residing in peri-urban and rural villages in South Africa – a population of youth underexamined in the existing literature. Finally, this study explored whether these associations differed between adolescents and caregivers. Together, these factors contributed one-fourth to

one-third of variance across both models. However, there were more and, unique factors predicting externalizing behaviors over time between adolescents and caregivers in this study.

From the adolescent-reported model, externalizing behaviors were significantly and positively associated with caregiver-reported economic distress, and adolescent-reported age, attitudes towards corporal punishment, and the interaction between attitudes towards corporal punishment and experiencing corporal punishment. These findings partially align with existing research. Specifically, other studies similarly find that adolescents' attitudes towards corporal punishment moderate (i.e., mitigate) the impact that corporal punishment has on their mental health. These studies have been supported longitudinally and in international settings specifically (Gershoff et al., 2010; Lansford et al., 2005; 2010; Lokot et al., 2020). Interestingly, other studies also find this relationship more significant among adolescent versus caregiver reports (Gershoff et al., 2010). It is posited that, when adolescents perceive these disciplinary practices as normative within their context, they internalize less harmful messages about harsh parenting or, attribute these disciplinary practices to less hostile parenting, compared to adolescents who perceive that as less normative or justified parenting (Lansford et al., 2010). Given the mixed findings between adolescent and caregivers, scholars emphasize the need to assess perceived normativeness across informants (Gershoff et al., 2010).

Higher caregiver-reported economic distress also significantly and positively predicted adolescents' externalizing behaviors as is found in other studies. For example, Krishnaukumar et al. (2014) found in their longitudinal study with young children that parenting mediated the relationship between economic precarity and behavioral outcomes via caregiver-reported community structure. Schenck-Fontaine (2018) and Schenck-Fontaine & Ryan (2022) also found that caregiver-reported material deprivation (though not income) was associated with

externalizing (though not internalizing) challenges via parent-reported psychological aggression, therefore emphasizing difference in material assets versus subjective distress and deprivation. Comeau & Boyle (2018) and Grogan-Kaylor et al. (2020) demonstrated a similarly direct and more significant linkage between persistent poverty and material deprivation and externalizing behaviors among older adolescent individuals in the U.S. While scholarship consistently emphasizes the multifaceted impact that economic disadvantage has on the mental and physical well-being of minoritized communities, this study is one of the first to capture resource needs and subjectively reported economic stress among caregivers in LMICs and investigate its association with adolescent behaviors longitudinally (Schenck-Fontaine et al., 2020).

Across the three parenting practices investigated, higher adolescent-reported parental monitoring was the only practice significantly correlated with adolescent-reported externalizing behavior over time. Previous research identifies inconsistent associations between monitoring and externalizing behavior (Goldner et al., 2016; Skinner et al., 2014). For example, in their longitudinal analysis investigating perceived neighborhood violence, parental monitoring and warmth, and young adolescent's mental health behaviors, Goldner et al. (2016) found the relationship between monitoring and externalizing behavior to be significant only among adolescents who perceived low neighborhood danger, while this relationship disappeared among youth who perceived high levels of danger. The authors of this study suggest that in communities with high violence or danger, monitoring is overall less relevant for youth's externalizing behaviors – a finding which differs from this study's findings. Other studies that demonstrate a significant association between monitoring and externalizing behaviors (Petit et al., 2001; Viner et al., 2012) suggest that monitoring may, in fact, buffer the impact of adverse experiences or high rates of community violence in impoverished settings (Kabiru et al., 2014). Notably, from

these analyses, adolescent-reported monitoring was the *only* parenting practice significantly associated with adolescents' externalizing behaviors. This finding may be the result of the differential impact parenting practices have on older adolescents. For instance, during this developmental time, adolescents increasingly rely on forming independent and extra-familial relationships; this, in turn, may reduce the influence that parents have on their adolescents' externalizing behaviors, while other influences, including peers and community norms, may instead have a more significant impact (Bornstein et al., 2018) on youth's behavior. Given the dearth of data investigating parental monitoring compared to other parenting practices within the family stress model framework (Hoff & Laursen, 2019), additional scholarship should continue to focus on understanding the impact it has on adolescent behavior within the context of familial and community disadvantage.

While this study did find that adolescent-reported corporal punishment predicted externalizing behaviors over time, this association is found more strongly in other empirical studies (Devlin et al., 2018; Gershoff et al., 2010; Ward et al., 2015). For instance, in their review of parenting practices in Sub-Saharan Africa (SSA) Devlin et al. (2018) found a statistically significant association between harsh parenting and child-report aggression, including among adolescent and child-report data. Deater-Deckard et al. (2019) also found that the impact of neighborhood violence on adolescents' externalizing behaviors in LMICs was most strongly predictive via harsh, rather than positive parenting. One recent study did align with these findings, which similarly found no association between harsh parenting and externalizing behaviors directly or, as a mediator between economic distress and community violence exposure, among immigrant parents in the United States (Saasa et al., 2021).

From the caregiver-reported model, adolescents' externalizing behaviors were significantly associated only with adolescents' age, with older age associated with higher caregiver-reported externalizing behavior over time and, higher reported externalizing behaviors at baseline. Some studies suggest higher reported externalizing behaviors with older age, as caregivers may increasingly fight with their adolescents as they strive to individuate and gain self-efficacy from their parents (Bornstein et al., 2018). It is noteworthy that economic distress, parental monitoring and harsh parenting practices, and attitudes about corporal punishment were not associated with caregiver-reported externalizing behaviors over time, given that they were significant in the adolescent reported model. Other studies similarly find discordant parent-child reporting, with several possible mechanisms driving these discrepancies, such as social desirability bias (Hoff & Laursen, 2019).

Across both the caregiver and adolescent models, several variables were not significantly predictive of youth's externalizing behavior over time, including community violence exposure, corporal punishment, and positive parenting practices; a finding which largely diverges from the current literature. First, positive parenting is generally found to correlate to positive well-being among children and adolescents (Sanders & Mazzucchelli, 2017), including in South Africa (Casale et al., 2015) and in the context of economic disadvantage specifically. Similarly, corporal punishment is found to generally correlate with worsened mental health outcomes among children and adolescents (Castillo et al., 2020; Cuartas, 2023), with some variation particularly in LMICs. For instance, one study conducted in South Africa found that positive parenting practices did not predict children's mental health, though harsh parenting did (Ward et al., 2015). Some scholarship suggests that earlier childhood is a more sensitive and critical developmental period compared to older adolescents. Therefore, it may be that extreme parenting

practices (harsh parenting or corporal punishment, for example) exert stronger influences on children's socio-emotional outcomes compared to adolescents' (Cuartas, 2023).

Adolescent-reported community violence exposure overall was not consistently or frequently reported across adolescents in this setting (mean=3.7, range 0-20) and was also not predictive of externalizing behavior in this study (though economic distress was), which suggests that other elements of community or economic disadvantage may be more important for adolescents in this region. That community violence was neither high nor predictive of adolescent externalizing behavior also diverges from past research in LMICs, which has found significant associations between neighborhood violence and adolescent outcomes (Deater-Deckard et al., 2018; Shields et al., 2009; Skinner et al., 2014). For instance, one longitudinal study found that neighborhood chaos and danger predicted internalizing, externalizing behavior, and school performance via parenting practices across six LMICs (Deater-Deckard et al., 2019). Skinner et al. (2014) also found in their longitudinal study across nine countries that perceived neighborhood danger predicted child aggression, while Shields et al. (2009) demonstrated that community violence exposure directly impacted well-being among South African adolescents specifically. While overall studies support a more consistent linkage between community violence, economic distress, and children's outcomes than was found in this study, one empirical article did find that South African adolescents' aggressive behaviors were associated only with family, and not community, conflict (Choe et al., 2012). Other studies emphasize the importance of investigating cumulative effects of different types of violence, in order to better understand its impact on adolescents especially (Plessis et al., 2015). Together, this underscores the importance of investigating different types of violence adolescents may experience and, their differential impact on their short- and long-term health and well-being (Stark et al., 2019).

6. Practice and Policy Implications

Several implications can be drawn from these findings. First, the statistically significant findings between adolescent-reported corporal punishment and parental monitoring and externalizing behaviors over time underscores the need to address the multi-level needs of caregivers and adolescents to bolster several aspects of parenting practices. One such approach is the implementation of community-based, multimodal parenting programs, which have increasingly demonstrated promise in LMICs (Knerr et al., 2013; Masiran et al., 2022; Pedersen et al., 2019) and align with the UNs SDGs to end violence against children globally (Sanders et al., 2021). For instance, Cluver et al. (2020) cluster randomized controlled trial of the Parenting for Lifelong Health (PLH) for Adolescents – a community-based parenting program delivered to caregivers and their adolescents in South Africa and the same study used for this data analysis– demonstrated effectiveness for adolescents across several key developmental outcomes including reduced caregiver violence and improved adolescent mental health. Importantly, this program also incorporated elements to address structural disadvantage, including financial literacy components that – alongside parenting skills – impacted critical outcomes from this intervention. Indeed, a follow-up study found four mechanisms driving positive outcomes from this intervention, including increased positive parenting practices, reduced use of corporal punishment, improved caregiver mental health and substance use, and improved economic welfare (Cluver et al., 2020; Steinert et al., 2018). Future programs should therefore continue to support the implementation of tools parents can utilize to support positive parenting practices, while simultaneously addressing the structural drivers and economic needs parents and their children face in their homes, schools, and broader communities as was implemented through this intervention (Sherr et al., 2017; Steinert et al., 2018) in accordance with the family stress model.

The significant impact that adolescents' attitudes towards corporal punishment had on the linkage between corporal punishment and externalizing behaviors over time also underscores the need to more strongly focus on understanding the impact of parenting and discipline norms on youth behavior. Indeed, while there has been an increasing number of studies incorporating norms into their investigation of parenting practices and youth development over the last decade, few are the central focus of studies and, there is little conceptual grounding anchored to such studies that makes it difficult to disentangle the processes through which disciplining norms impact youth behaviors over time (Lokot et al., 2020). Additionally, while this study investigated two dimensions of norms (specifically, attitudes and beliefs and practiced behavior of corporal punishment), it did not include dimensions such as the impact of complying or, not complying with expected or normative behaviors (Costenbader et al., 2019). Including additional dimensions of norms towards harsh parenting may further enrich our understanding of the broader social processes impacting its use and impact.

Finally, these findings further support the need to center family's socio-cultural context – including norms and attitudes about corporal punishment - when implementing programs and policies aimed at supporting parenting practices. To date, few interventions explicitly incorporate norm change into their programming. For instance, in their systematic review on corporal punishment and social norms, Lokot et al. (2020) found only five interventions that included norm change into multi-level programming seeking to reduce harsh disciplinary practices. While these studies found effectiveness for improving norms among parents and teachers who use corporal punishment, limitations included not incorporating the full continuum of adults disciplining children and adolescents (e.g., both parents, broader social networks important for caretaking) and, lack of evidence investigating norm change over time (Lokot et al., 2020).

Through ensuring socio-cultural context is explicitly integrated into program design, evaluation, and implementation, scholars can also ensure that Western ideals of positive parenting are not forcibly perpetuated in LMIC settings (Morelli et al., 2018). Tools to ensure this praxis includes engaging collaboratively with communities in the development and evaluation of parenting programs, as well as through the inclusion of local community partners and social networks to ensure long-term sustainability in localized contexts (Morelli et al., 2018; Ward et al., 2015). Research would also benefit from explicitly asking what goals and aspirations caregivers and their adolescents have for parenting support and their mental health to ensure that programming and policy targets the most salient individual and broader sociocultural needs that impact violence and health globally (Lachman et al., 2016; Morelli et al., 2018).

This study is also one of the first to test these processes among older adolescents and, to include critical resource needs and subjective indicators of economic disadvantage into its analysis. Given the mixed findings between adolescent and caregiver reports and, the non-significant findings between variables consistently investigated in other studies (e.g., harsh parenting and externalizing behaviors), future studies should further explore this developmental time period and continue to assess these relationships across different informants. This will ensure programs can tailor their interventions towards the needs of caregivers and adolescents. Research would also benefit from exploring alternative models for dyadic analysis given the discordance agreement between adolescents and caregivers in this study (Murray et al., 2018; Wagner et al., 2010). Empirical research examining the association between parenting practices and older adolescents' mental health can better tailor such programming across the developmental life span, which is critical for reaching the UN Sustainable Development Goals by 2030.

7. Strengths and Limitations

There are several limitations to this study. First, while this study aimed to include previously studied factors salient for externalizing behaviors across multiple levels of influence, there were limitations to constructs examined. For instance, other forms of harsh parenting were not captured in this study beyond corporal punishment. Similarly, externalizing behavior was the only indicator of adolescents' mental health tested in this analysis. Future studies can replicate this study with additional indicators of well-being, such as internalizing symptoms or constructs associated with positive youth development such as self-efficacy and resilience. There are also limits to our understanding as to the causal relationship between parenting practices, experiences of community violence, and economic distress on youth externalizing behaviors in this study. Additionally, this study was localized within one particular area in South Africa. Therefore, these findings cannot be generalized to other areas in South Africa or beyond. This study should further be re-tested across cultural groups given the explicit focus on considering the ecological and socio-cultural factors impacting parenting practices and adolescents' externalizing behaviors in this study.

Despite these limitations, this study includes several notable strengths. Specifically, this longitudinal analysis contributes to the existing literature by incorporating multiple contextual indicators of health and well-being alongside different aspects of parenting practices into a singular study, and further assesses their intercorrelations and associations with externalizing behaviors among different informants, over time. Moreover, it investigated these associations among an understudied population of adolescents – specifically, older adolescents residing in South Africa where limited research has been conducted. These findings advance needed information about multi-level factors that impact adolescent well-being, with attention to

structural and contextual factors that are critical for promoting effective policy and programming to reduce exposure to violence or something.

8. Conclusion

This study builds on interdisciplinary scholarship aiming to address the impact that economic disadvantage has on the health and well-being of adolescents and their caregivers to reduce familial violence globally. Utilizing an integrative framework, this study found incongruent findings between adolescent and caregivers. Specifically, while multi-level factors were found to contribute to adolescent-reported externalizing behaviors over time, including economic distress, parental monitoring, attitudes towards corporal punishment, and corporal punishment (to some degree), these same relationships were not identified in caregiver reports in this study. Future studies should explore reasons for this discrepancy in future, to assist in identifying causal mechanisms. Additionally, future programming should focus on the continued development of multimodal programs for adolescents and their caregivers that simultaneously target the interpersonal and structural factors impacting their health and well-being. It also emphasizes the need for future research to assess additional factors that contribute to adolescents' externalizing behaviors that may be more salient for caregivers of children at this developmental stage and in this context, such as HIV/AIDS, acculturation, and/or other culturally relevant indicators of economic disadvantage.

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Table 1: Correlation coefficients and Summary statistics - Adolescent reported

	cbcl_a1	cbcl_a3	mon_a1	pospar_a1	corpun_a1	cve_a1	acp_a3	ess_c1
cbcl_a3	0.29 p < .001							
mon_a1	-0.49 p < .001	-0.31 p < .001						
pospar_a1	-0.28 p < .001	-0.16 p = .015	0.18 p = .005					
corpun_a1	0.21 p = .001	-0.11 p = .11	-0.17 p = .01	0.02 p = .75				
cve_a1	0.21 p = .001	0.15 p = .02	-0.19 p = .003	-0.17 p = .0097	0.15 p = .02			
acp_a3	-0.04 p = .54	0.11 p = .10	0.099 p = .127	-0.01 p = .84	-0.08 p = .20	0.03 p = .63		
ess_c1	0.05 p = .48	0.09 p = .17	0.045 p = .49	-0.15 p = .02	0.04 p = .51	0.05 p = .43	-0.03 p = .60	
Mean	14.564	10.098	26.800	14.0339	2.338983	3.563559	7.65678	10.72458
(SD)	(8.741)	7.333	6.914	5.739645	2.583813	3.685536	5.036547	3.519609
CBCL_A1 - baseline - Teen - all CBCL items CBCL_A3 - time 3 - Teen - all CBCL items Mon_A1 - baseline - Teen - all monitoring items PosPar_A1 - baseline - Teen - positive parenting items only CORPUN_A1 - baseline - Teen - Corporal punishment CVE_A1 - baseline - Teen - all CVE items ACP_A3 - time 3 - Teen - Attitude to corporal punishment ESS_C1 - baseline - Caregiver - all poverty items								

Note: *p < .1, **p < .05.

Table 2. Correlation coefficients and Summary statistics - Caregiver Reported

	cbcl_c1	cbcl_c3	mon_c1	pospar_c1	corpun_c1	cve_a1	acp_c3	ess_c1
cbcl_c3	0.48 p < .001							
mon_c1	-0.44 p < .001	-0.26 p < .001						
pospar_c1	-0.17 p = .011	-0.12 p = .07	0.22 p = .001					
corpun_c1	0.17 p = .009	0.09 p = .19	-0.06 p = .36	0.11 p = .08				
cve_a1	0.02 p = .73	0.10 p = .11	-0.08 p = .22	0.04 p = .50	-0.03 p = .67			
acp_a3	0.02 p = .74	0.11 p = .099	-0.07 p = .27	-0.04 p = .51	0.09 p = .18	-0.001 p = .98		
ess_c1	0.05 p = .40	0.08 p = .25	-0.08 p = .23	0.11 p = .09	-0.04 p = .54	0.052 p = .43	0.09 p = .18	
Mean	18.39831	14.76695	26.66525	15.35169	2.627119	3.563559	7.788136	10.72458
(SD)	11.5417	11.23031	7.622072	4.897159	2.952955	3.685536	5.133705	3.519609
CBCL_C1 - baseline - Caregiver - all CBCL items CBCL_C3 - time 3 - Caregiver - all CBCL items Mon_C1 - baseline - Caregiver - all monitoring items PosPar_C1 - baseline - Caregiver - positive parenting items only CORPUN_C1 - baseline - Caregiver - Corporal punishment CVE_A1 - baseline - Teen - all CVE items ACP_C3 - time 3 - Caregiver - Attitude to corporal punishment ESS_C1 - baseline - Caregiver - all poverty items								

Note: *p < .1, **p < .05.

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Table 3. Goodness-of-fit for the measurement models

	Externalizing baseline (Adolescent reported)	Externalizing Time 3 (Adolescent reported)	Parental Monitoring (Adolescent reported)	Positive parenting (Adolescent reported)	ACP (Adolescent reported)	CVE (Adolescent reported)
$\chi^2(df)$, p	1264.215, p < .001	1371.95, p < .001	8.119, p = .15	29.993, p < .001	59.277, p < .001	57.78 p = .009
RMSEA (90% CI)	0.073 (0.068; 0.079)	0.079 (0.073; 0.084)	0.052 (0; 0.113)	0.1 (0.062; 0.140)	0.154 (0.118; 0.193)	0.053 (0.026; 0.076)
CFI	0.568	0.487	0.992	0.972	0.923	0.952
SRMR	0.081	0.083	0.024	0.032	0.057	0.053
CD	0.875	0.858	0.833	0.909	0.911	0.848
	Externalizing baseline (Caregiver reported)	Externalizing Time 3 (Caregiver reported)	Monitoring (Caregiver reported)	Positive parenting (Caregiver reported)	ACP (Caregiver reported)	ESS (Caregiver reported)
$\chi^2(df)$, p	1876.233, p < .001	1946.436, p < .001	3.803, p = .578	16.609, p = 0.055	78.72, p < .001	11.997 p = .035
RMSEA (90% CI)	0.1 (0.095; 0.105)	0.103 (0.098; 0.108)	0 (0; 0.787)	0.06 (0; 0.105)	0.182 (0.146; 0.219)	0.077 (0.019; 0.134)
CFI	0.494	0.523	1.0	0.984	0.899	0.974
SRMR	0.099	0.099	0.022	0.031	0.064	0.033
CD	0.902	0.916	0.765	0.860	0.905	0.786

Note. ACP=Attitudes Towards Corporal Punishment; CVE=Community Violence Exposure

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Table 4. Multiple Linear Regression - Effects of caregiver-reported poverty distress and youth-reported community violence exposure, parenting practices, and attitudes towards corporal punishment at baseline on youth-reported externalizing behaviors at follow-up.

	β	Std. Error	T
Age	.73**	.20	3.69
Externalizing Baseline	.11*	.58	1.94
Community Violence Exposure	.13	.12	1.12
Poverty Distress	.25**	.12	2.06
Corporal Punishment	.57*	.30	1.89
Positive Parenting	-.02	.77	-.022
Monitoring	-.19	.72	-2.61
ACP	.42**	.11	3.90
ACP*Corporal Punishment	-.12**	.37	-3.32

Note: * $p < .1$, ** $p < .05$.

β=Standardized Coefficient; T=T Statistic; ACP=Attitudes towards corporal punishment.

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Table 5. Multiple Linear Regression - Effects of caregiver-reported poverty distress, youth-reported community violence exposure, and caregiver-reported parenting practices, and attitudes towards corporal punishment at baseline on caregiver-reported externalizing behaviors at follow-up.

	β	Std. Error	T
Age	.91	.30	3.05
Externalizing Baseline	.43**	.06	6.94
Community Violence Exposure	.21	.17	1.23
Poverty Distress	.20	.18	1.09
Corporal Punishment	-.35	.43	-.81
Positive Parenting	-.01	.14	-.05
Monitoring	.04	.10	.40
ACP	.02	.17	.09
ACP*Corporal Punishment	.07	.04	1.52

*Note: * $p < .1$, ** $p < .05$.*

β=Standardized Coefficient; T=T Statistic. ACP=Attitudes towards corporal punishment.

Figure 1. Adolescent-Reported Variability between Corporal Punishment and Externalizing Behaviors by Varying Levels of Attitudes towards Corporal Punishment

