



Community Interaction, Influence, and Child Maltreatment: Variations by Rural and Urban Residence Status

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Abstract

Effects of community interventions on child maltreatment are interpreted via rational deterrence theory's assumption of *instrumental rationality*. However, recent contrasting findings have raised questions about the social exchange currency that regulates human behaviour within the rational deterrence framework. This study contributes to this debate by examining the social currency of *influence* and its role in child maltreatment prevention. We hypothesized that both individual and community wealth of influence would predict physical abuse severity. Data was obtained from 1,100 nationally representative sample of female mothers in Ghana, and associations were examined using random effects regression models. We found a negative association between physical abuse severity and individual level influence as well as community wealth of influence. Results were only significant in the rural sample. The findings suggest that interventions aiming to increase community commitment to deter and prevent child maltreatment should focus on strengthening the currency of influence in communities.

Keywords Physical Abuse · Influence · Community Interaction · Informal Social Control · Rational Choice Deterrence · Community Characteristics

1 Introduction

Growing child maltreatment studies following claims in social disorganization theory (Shaw & McKay, 1942) and/or collective efficacy theory (Sampson, 2006) have shown that social processes in neighbourhoods, including social cohesion (Maguire-Jack & Showalter, 2016; McLeigh et al., 2018) and informal social control (Abdullah et al., 2022; Emery et al., 2015c; Maguire-Jack et al., 2021) could protect against child maltreatment (Emery et al., 2020). The implicit logic of the effect of neighbour-

hood social processes on child maltreatment rests upon the classical rational choice deterrence hypothesis (Matsueda et al., 2016), where perpetrators of maltreatment are presumed to act simply in an instrumentally rational fashion by calculating costs/benefits associated with engaging in acts of maltreatment (Emery et al., 2022), deviance or violence (Kornhauser, 1978). Though the classical rational choice theory provides a sound theoretical framework to explain the effects of neighbourhood social processes on child maltreatment, recent empirical data on the relationship between informal social control and child maltreatment (Abdullah & Emery, 2022b; Barnhart & Maguire-Jack, 2016; Emery et al., 2015a, 2015b; Kim & Maguire-Jack, 2015) challenges the classical rational choice deterrence hypothesis and calls into question the viability of the rational choice deterrence hypothesis.

A core principle of the classical rational choice deterrence is the assumption that actors calculate costs/benefits in monetary currencies (see. Gautschi & Berger, 2018). However, consistent with research on the complexities of currencies that motivate rational choice decision-making (Baumann, 2020; Bridge, 2009; Fumagalli, 2020; Gautschi & Berger, 2018; Steinmetz & Pratt, 2024, Luhmann, 1976 and Gould, 1987) argued that four primary currencies: money, influence, love, and power, are used by human beings in social exchange and that these currencies are instrumental in understanding disorder or violence, as well as ways to achieve social order in society (see. Gould, 1987, for full evaluation of the four currencies). Each social currency is theorized to have independent effect in social exchange between people's decision-making (Luhmann, 1976) as well as systemic level impact (Gould, 1987). This study evaluates *influence* as a social exchange currency that offers an alternative explanation for the effect of neighbourhood social processes on child maltreatment within the rational choice deterrence model. Influence, as a social exchange currency, is deemed to be stronger in Ghana due to the hierarchical cultural norms that legitimize respect for older people, even if the person is one day older (Issahaku, 2022; Nukunya, 2003). The study develops a measure for community level and individual level influence and tests its relationship with physical abuse severity using nationally representative data from 1,100 caregiving mothers in Ghana.

Knowing how social processes affect child maltreatment perpetration and the factors that underlie the effect is vitally important to boost community-based child maltreatment prevention in underdeveloped countries, such as Ghana, where formal child protection systems are underdeveloped but communities possess strong cultural resources (Abdullah et al., 2023a, 2023b; Emery et al., 2023). Also, such evidence is vitally important as physical abuse is reported to affect 71.35% of children in Ghana as of 2021 (Emery et al., 2023), compared to 43% lifetime prevalence in 2010 (Akmatov, 2011). In the past year (2020), 23.6% of children in rural areas and 10.7% in urban areas were reported to have experienced very severe physical abuse (such as being beaten up or threatened with a knife) in Ghana (Emery et al., 2023). The increased prevalence of child abuse in Ghana may be associated with the continuing acceptance of corporal punishment as a mechanism to discipline children (Forbes et al., 2023).

1.1 Collective Efficacy, Informal Social Control, and Rational Choice Deterrence Hypothesis

Sampson (2006) formulated a variant of social disorganization theory, called collective efficacy theory, focusing on ways in which social processes in neighbourhoods, specifically social cohesion and informal social control, motivate deterrence from violence, including child maltreatment (Sampson, 2006). At the heart of collective efficacy theory is a claim that human beings will deter from engaging in violent acts, including child maltreatment, if their neighbours/community members are likely to intervene through informal social control activities (Sampson, 2006). Informal social control refers to the perceived or actual actions undertaken by ordinary residents to address violent behaviours (Sampson et al., 1997) and child maltreatment issues (Emery et al., 2015c). The two classic approaches of informal social control, protective versus punitive, highlight the different actions undertaken by neighbours and their impacts on the perpetrator's schema (Emery et al., 2015c). Other studies classified "perceived informal social control" and examined its impact on child maltreatment (Freisthler & Maguire-Jack, 2015; Kim & Maguire-Jack, 2015; Yonas et al., 2010) following Sampson's (2006) logic of expected change in human behaviour, and measurement model (Sampson et al., 1997).

Protective informal social control of child maltreatment involves actions by the neighbour (aka bystander) to safeguard the child, but punitive informal social control of child maltreatment entails actions to punish the perpetrator (such as reporting the behaviour, threatening, or chastising the perpetrator) (Emery et al., 2015c). Perpetrators are presumed to refrain from engaging in child maltreatment behaviours when informal social control is apparent or more likely to be activated because of the situational costs/sanctions to be met (Baumann, 2020; Gautschi & Berger, 2018). In other words, informal social control is perceived by the perpetrator to increase the costs associated with engaging in acts of child maltreatment (Warner et al., 2010). In the eyes of a rational calculative agent, the likelihood of sanctions or punishment incentivizes parents to perceive desistance as a beneficial outcome (Gautschi & Berger, 2018). Many, if not all, of the effects of informal social control on child maltreatment follow this implicit rational choice deterrence logic.

Robust empirical findings across the globe (including studies from Korea, USA, Vietnam, Ghana) have shown that perceived acts of informal social control by neighbours (Barnhart & Maguire-Jack, 2016; Guterma et al., 2009; Kim & Maguire-Jack, 2015; Yonas et al., 2010) and actual acts of informal social control (Abdullah et al., 2022; Abdullah & Emery, 2022b; Emery et al., 2015a, 2015b; Emery et al., 2015c; Emery et al., 2019) result in fewer cases of child maltreatment (physical abuse and neglect). Perceived informal social control in neighbourhoods is associated with a lower incidence of physical abuse (Freisthler & Maguire-Jack, 2015; Kim & Maguire-Jack, 2015), whereas Emery et al., (2015c) found a negative association between actual acts of protective informal social control by neighbours (such as an intervention to safeguard the child or calm the perpetrator) and physical abuse. Neighbours' protective informal social control intervention to safeguard abused children predicted fewer abuse injuries (Emery et al., 2015a, 2015b). Studies that examined the relationship between protective or perceived acts of informal social control and child neglect

found robust negative association across samples in the USA, Russia and Ghana (cf. Abdullah et al., 2022; Abdullah & Emery, 2022b; Emery et al., 2020; Guterman et al., 2009; Yonas et al., 2010).

While there appears to be consistent findings on the negative relationship between perceived and protective acts of informal social control and physical abuse, empirical findings on punitive informal social control actions (such as yelling, reporting to police, or threatening the perpetrator) have been null (Abdullah & Emery, 2022b; Emery et al., 2015c). Punitive acts of informal social control, including those carried out in the form of bystander actions, predicted high frequency maltreatment and severe intimate partner violence (IPV) experiences across samples in Korea, Ghana, the USA, Beijing and Vietnam (cf. Abdullah et al., 2023a; Abdullah & Emery, 2022b; Emery et al., 2019; Emery et al., 2015b; Taylor et al., 2019). The consistent counter-predictive evidence on the relationship between punitive informal social control and child maltreatment calls into question the viability of the rational deterrence hypothesis. Specifically, it raises questions about the social exchange currencies by which costs should be calculated, if not power or money. If indeed the assumption of instrumental rationality from the rational deterrence hypothesis underlies the efficacy of informal social control actions, then punitive informal social control should be associated with lower child maltreatment. This is because punitive informal social control actions, such as yelling, reporting to police, or threatening the perpetrator, apply situational sanctions or punishment, that should evoke deterrent responses from actual and perceived perpetrators. This claim is also consistent with the neo-classical assumption of instrumental rationality—*actors will always act rationally to maximize utility* (Gould, 2018). Perceived informal social control actions will also have effects on child maltreatment because, as Durkheim (1982) indicated, the goal of situational sanctions/punishment is to enforce social norms or laws even among those who are yet to violate the law.

The counter-predictive or null findings on the association between punitive informal social control and child maltreatment are consistent with recent findings on informal social control and IPV (Caetano et al., 2010; Dekeseredy et al., 2003; Jain et al., 2010). Arguments about the inconsistencies between the rational choice deterrence hypothesis and empirical data echo theoretical discussions in behavioural economics (cf. Kahneman & Thaler, 2006) and the criminology literature (Anderson, 2000). A challenge to the rational deterrence hypothesis occurs when human beings are willing to sacrifice their own interests to help others, often referred to as bounded self-interest (Mullainathan & Thaler, 2000). Part of the problem of understanding the relationship between instrumental rationality (a core neoclassical assumption of rational deterrence hypothesis) and human decision-making is situated in questions about *what currency costs should be calculated, if not money?* In matters of violence, do people sacrifice economic gain so they can benefit from other social exchange currencies? Luhmann's (1976) argument about the use of the four social exchange currencies (money, power, influence, and love) in understanding social order/disorder, and the fact that one currency is not reducible to another, enables us to investigate the role of social exchange currencies, such as *influence*, independently within the rational choice deterrence framework. Following Luhmann's logic, this study examines the

relationship between the social currency of *influence* and the perpetration of child maltreatment.

1.2 Influence and Other Social Exchange Currencies

Social exchange currencies - influence, money, power, and love - manifest in individual interactions, and affect the probability of accepting and following someone else's opinion, suggestion, or order, even if they run counter to one's inclination (Parsons, 1967). However, discussions about the differences between the social exchange currencies and how they motivate human behaviour and decisions within the rational choice framework often result in tautology or determinism (Parsons, 1937), where they are often lumped together as one currency. Hence, critical discussions about each currency's unique and independent effect on social exchange and human behaviour are often lost. Take these three scenarios as an example: Scenario 1: an army commander in combat may threaten a low-ranked soldier with a court martial for abusing alcohol. Scenario 2: a doctor or general practitioner may direct a patient to stop abusing alcohol to improve their health. Scenario 3: a fiancée may order their partner to stop abusing alcohol as evidence of their commitment to the relationship. In all three scenarios, the person, perceived to be alcohol dependent, may adhere to the suggestion, order, or instruction, but for varied reasons. In the first scenario, fear may motivate deterrence from the soldier, in the second scenario, respect for the doctor's knowledge may motivate the patient to refrain from abusing alcohol, and in the third scenario, a high value placed on the relationship may motivate the person to stop abusing alcohol.

These scenarios demonstrate how the currencies may manifest in daily interactions among people, and how they could uniquely impact human behaviour. For example, an informal social control action (such as advice on childrearing and discipline practices) by a community elder may motivate a parent to deter/desist from physical abuse due to the respect the parent has for the community elder. The parent may also desist from physical abuse due to the probability of losing respect in the community or from the community elder for violating traditional expectations about respecting older adults. Within the classical rational choice model, where actors are presumed to be regulated by only one positively stated normative orientation, the norm of instrumental rationality (Gould, 2005, 2018; Parsons, 1937), such decisions may not be considered rational, especially when they contrast with the individual's own inclination. We follow Luhmann's (2018) definition of *influence* as the probability of following a suggestion or opinion. The base (core aspect) for influence is prestige (Parsons & Smelser, 1956). Hence, we define the effect of *influence*, in this study, as a person's willingness to accept a suggestion, advice or opinion from a community elder or family head that changes the person's behaviour in relation to childrearing and parenting.

We argue that influence may underpin the robust evidence on the association between neighbourhood social processes and child maltreatment, especially the relationship between protective or perceived informal social control and a reduction in child maltreatment (cf. Abdullah & Emery, 2022a; Emery et al., 2015a, 2015b; Emery et al., 2020; Emery et al., 2015b; Guterman et al., 2009; Kim & Maguire-Jack, 2015; Maguire-Jack et al., 2021; Yonas et al., 2010). Hence, we predict that the influence

resulting from respect for a community elder, family head or other leaders in the community will have a direct effect on the incidence of physical abuse in a community. This effect may be strengthened by the prestige associated with an older person, family head, or community leader's status or position in the community.

Beyond individual level interactions, the effects of the social exchange currencies can be evaluated at the community level. In fact, Parsons's (1967) and Gould's (1987) analysis of influence is strictly contained at the systemic level. Research on the impact of economic wellbeing, which is a wealth of money, or economic poverty, which is a lack of money at the community level, assesses money as a social exchange currency at the community level. Research on economic poverty or wellbeing is dominant within child maltreatment literature (Bunting et al., 2018; Kim & Drake, 2018; Maguire-Jack et al., 2021; Smith et al., 2021). If such analysis bears fruit, then it is empirically germane to evaluate the other social exchange currencies at the community level and how they impact human behaviour. Much like the studies that have investigated the association between economic wellbeing (or poverty) and child maltreatment (cf. Bunting et al., 2018; Kim & Drake, 2018; Maguire-Jack et al., 2021; Smith et al., 2021), it is possible to investigate poverty of power or concentrated/wealth of power, and poverty of influence or concentrated/wealth of influence, as a way to fully evaluate the differentiated impacts of each social exchange currency (Gould, 1987; Luhmann, 1976). A community level (or spatial level) analysis of each social exchange currency has empirical relevance to strengthening the effect of neighbourhood social processes on child maltreatment. For example, communities rich in influence, meaning there are sanctioned normative hierarchical structures and values that enforce respect and prestige, will more likely report fewer maltreatment cases due to the spillover effects of such influence in social interactions and social processes among ordinary community members. The wealth of community influence could also motivate desistance from maltreatment when informal social control activities are carried out. The wealth of community influence may have an independent deterrent effect on child maltreatment behaviours due to the perceived loss of influence by the perpetrator (Luhmann, 1976; Sampson, 2006). The cost associated with losing influence or prestige for violating community norms may motivate deterrence from perceived perpetrators of abuse. Hence, we predict a direct negative relationship between community level influence and physical abuse severity.

Based on the empirical research and theoretical discussions, we hypothesize the following relationship between influence and physical abuse severity:

- H1) Individual-level influence will be negatively associated with severe physical abuse.
- H2) Community-level wealth of influence will be negatively associated with severe physical abuse.

1.3 Influence Currency and Norms in Ghana

Child physical abuse is high in Ghana, with evidence of 71.35% estimated lifetime prevalence rate (Emery et al., 2023). As they are in most low-and-middle-income

countries, formal systems to address and prevent child maltreatment situations are underdeveloped in Ghana (Abdullah et al. 2022; Connolly & Katz, 2019). Yet, recent studies across Africa suggest that African communities possess collective strengths resulting from established values and norms, which could be useful in addressing child maltreatment situations. Ubuntu in Africa (Mayaka & Truell, 2021) and Abiriwatia in Ghana (Abdullah et al., 2023a, 2023b) are typical community norms and values that sanction community responsibility to take care of children, also evident in the popular adage “*it takes a village to raise a child*” (Verhoef, 2005). Abiriwatia is a communal value centred around three core normative beliefs (1) collective obligation to childcare, (2) respect for elders and community leaders, and (3) lineage succession rules (see. Emery et al., 2023; Nukunya, 2003).

The normative dimension of Abiriwatia, especially the norm of respect for community elders and leaders, espouses the role of influence in Ghanaian communities (Abdullah et al., 2023a, 2023b). Gould (1987) identified influence/respect among the core social exchange currencies for ensuring social order in society. Influence can be used as a medium to motivate commitment through inducement, activation, and persuasion (Parsons, 1963). Hence, in communities where there are established norms (such as Abiriwatia) to enforce the influence of community leaders, it is highly expected that such influence could be activated to induce parents to desist from acts of child maltreatment. By inducement, expected normative actions (desistance from maltreatment) can be achieved when parents are presented with reasons showing the situational advantages of acting in a particular way (Parsons, 1963). For example, “If you beat the child, you will be regarded as a bad parent”. The situational advantage of being considered a good parent may regulate parents’ behaviour. Parents are more likely to comply with such protective actions, especially if it is coming from a person older than them or a respected elder in the community (see. Issahaku, 2022, on respect for older people in Ghana). Such actions could place limits on sanctioned behaviours and motivate parents to desist from severe physical abuse. If the hypotheses in this study are supported, the findings will provide evidence to develop practical measures to strengthen influence and utilize the collective benefit of Abiriwatia to prevent child maltreatment in Ghanaian communities. However, recent studies suggest that the impacts of the Abiriwatia and other collective values, such as Ubuntu, are less strong in urban Ghana compared to rural communities (Abdullah et al., 2023a; Nukunya, 2003). This discrepancy leads to a third hypothesis:

H3: The association between influence and physical abuse severity will be stronger in rural communities compared to urban communities.

2 Methods

2.1 Participants and Procedure

We used data from the Ghana Families and Neighbourhood study (GFNS), 2021, to examine the associations in this study. The GFNS study is a four-stage probability

proportional to size (PPS) and a nationally representative sample of 1,100 caregiving mothers in Ghana. Using data from the Ghana population and housing census, seven districts (4 from rural and 3 from urban) were randomly selected following a PPS approach. At least three settlements were randomly selected from each district using the PPS approach. A neighbourhood map-based sampling approach using geographical maps were developed for each community. The neighbourhood maps divided each community into equal regions using latitude and longitude coordinates. These coordinates were numbered as start-points for selecting households. Five start-points were randomly selected from each community and research assistants were trained and certified to use the start-points on the maps to recruit 10 caregiving mothers from 10 households closer to each start-point. Fifty caregiving mothers from 5 neighbourhood clusters in each community were recruited.

Consistent with traditional African caregiving expectations (Nukunya, 2003), the GNFS recruited only female caregivers since women are expected to carry out primary caregiving duties. As such, they spend more time with their children and are more likely to abuse them. The GNFS recorded a 95% response. The research was approved by the University of Hong Kong. Questionnaires in the GNFS were translated into Twi (common lingua franca in Ghana) by a Ghanaian research academic and translated back into English to ensure accuracy.

2.2 Measures

Physical Abuse Severity We used the very severe physical abuse items on the conflict tactics scale 2 (CTS 2; Straus et al., 1998) to measure physical abuse severity. Caregivers were asked whether they had done the following to the focal child in their lifetime or past year. Items included: (1) choked the child, (2) beaten up the child, (3) deliberately burned or scalded the child, (4) used or threatened to use a knife or gun on the child, and (5) threw or knocked him/her down. Responses were: once in the past year, twice in the past year, 3 to 5 times in the past year, 6 to 11 times in the past year, 11 to 20 times in the past year, more than 20 times in the past year, not in the past year but has happened before, and never happened before. Following the recommendation by Straus et al. (1998) parents with more than one child were required to select the child with the most recent birthday as the focal child. Cronbach α for the severe physical abuse scale was 0.80.

Though the CTS items measure the frequency of violence, summing the frequencies across different levels of abuse behaviours may result in an unlike comparison, such as comparing apples to oranges. To remedy this and to ensure that we create a robust measure for severe physical abuse, we followed Emery et al.'s (2015b) approach for creating severe physical abuse and IPV scales using the CTS. By doing so, we created a physical abuse scale by weighting each item's frequency and the associated odds (odds obtained from bivariate logistic regression) of producing an injury, and then summed the weighted frequencies. Two injury items from the CTS scale were used to conduct this analysis. The items were: (1) gave a punishment that caused cuts/bruises, and (2) gave a punishment that resulted in a need to consult a doctor (MD). This weighted approach ensures that items that are more likely to result in injury are inflated on the scale, whereas items less likely to result in injury are deflated.

Individual and Community Level Influence We measured individual level influence by focusing on the nature of the relationship between two actors. Following the Abiriwatia norm of respect for elders and community leaders (Abdullah et al., 2023a, 2023b) and the fact that Ghanaian communities are organized under the leadership of a family head (Abusuapanyin), our measure for influence focuses on caregivers' probability of following suggestions from these two instrumental figures (family heads and elders). Items included: (1) If your family head (Abusuapanin) suggested you do something, what is the probability on a scale of 0-100 that you would do it? [0 means there is no probability that you would do it, 100 means there is no probability that you would not do it, and 50 means it's about equally likely whether you would do it or not]. (2) Think of the elder you respect most in your community. If that elder suggested you do something, what is the probability on a scale of 0-100 that you would do it? [Same explanation of probability as previous]. Scores were summed to create an individual level influence scale. Cronbach's α for the influence scale was 0.84, suggesting that the scale has good internal reliability. We took the mean of the two influence items, and then the settlement average was calculated to generate the *community level influence scale*.

2.3 Control Variables

Social Cohesion We measured social cohesion using the social cohesion subscale of the collective efficacy scale by Sampson et al. (1997). The five items of the social cohesion scale were: (1) my neighbourhood is a close-knit community, (2) people in this community generally get along with each other, (3) people in this community can be trusted, (4) people around here are willing to help their neighbours, and (5) people in this community share the same values. Responses were scored on a four-point Likert scale ranging from "strongly agree" to "strongly disagree". Scores were summed, and settlement averages were taken to generate the *community level social cohesion scale*. Internal reliability of the social cohesion scale was good, Cronbach's $\alpha=0.89$.

Social Trust A single item social trust measure was used in this study (see. Torpe & Lolle, 2011). Respondents rated how well people in their neighbourhoods can be trusted by responding to the question: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people? On a scale of 1 to 6, on which 1 means most people can be trusted and 6 means you can't be too careful". Responses 1 to 3 were captured under the heading "most people can be trusted", whereas responses 4 to 6 were grouped under the heading "you can't be too careful". We took settlement averages to develop the *community level social trust scale*.

Neighbourhood Stability Years lived in the neighbourhood is an indicator for measuring neighbourhood stability. Participants were asked the question: "How many years have you lived in this neighbourhood?". Responses (in years) were summed, and the settlement average of the score was taken to generate the *neighbourhood stability scale*.

Neglect Secrecy The caregivers' tendency to conceal their involvement in other maltreatment behaviours, such as neglect, was measured using a *neglect secrecy* scale. The neglect secrecy measure accounts for the parents' involvement in other non-physical abuse behaviours, as well as the social desirability of reporting maltreatment. The scale included the following items: "If I could not take good enough care of my child, I would try to keep it secret from": (1) my friends, (2) my family, (3) my neighbours, (4) my co-workers, (5) my boss, and (6) everyone. Responses were scored on a four-point Likert scale ranging from *strongly agree* to *strongly disagree*. Internal reliability of the scale was good, Cronbach's $\alpha=0.83$.

Demographic Controls We controlled for the female caregivers' age (in years), marital status, and monthly average income divided by per child. The focal child's age (in years), and sex were also included in the model. The number of people living in the households of the caregivers (family size), and the number of relatives and family members living in the neighbourhood (kinship ties) were controlled for.

2.4 Analytic Strategy

Associations were examined using random effects regression models. Because we employed a multi-stage cluster design to sample participants and the fact that participants are clustered within specific communities meant that our statistical models needed to correct for standard errors of the linear models and clustering effects at community levels (Hsiao, 2003; Johnston & DiNardo, 1997). Compared to other models, such as fixed effects, random effects models sufficiently handle clustering problems and provide efficient estimates of the linear models (see. Hsiao, 2003; Johnston & DiNardo, 1997). A Hausman test conducted on the models for fixed and random effects identified random effects as the most unbiased model to estimate the relationship between variables in the study ($\chi^2 = 13, p=0.0697$). Practically, a random effects model is like a simple multi-level model with random effects for each community level. It can assist in handling statistical sensitivity issues that may result from clustering within specific communities or settlements (Hsiao, 2003; Johnston & DiNardo, 1997). There were no multicollinearity concerns as the highest variance inflation factor was less than 2 (caregiver's age=1.56). Models were run using *Stata 17*, and missing values were listwise deleted.

3 Results

Table 1 presents descriptive statistics of the variables in the study. Means (percentages) and standard deviations of each variable in the model have been presented and the difference between rural and urban samples is also shown in the table. Six hundred and fifty of the mothers were rural residents and 450 came from urban communities. Overall, average physical abuse severity on the very severe physical abuse scale was 0.39 (SD=0.96), but much higher in rural communities, 0.47, compared to urban, 0.28. Differences between rural and urban physical abuse severity were

Table 1 Sample descriptive statistics

Variable	Overall			Rural			Urban		
	<i>N</i>	Mean	Standard deviation	<i>N</i>	Mean	Standard deviation	<i>N</i>	Mean	Standard deviation
Physical abuse severity	1,072	0.39	0.96	622	0.47***	1.17	450	0.28	0.51
Caregiver age	1,099	38.37	12.16	649	38.60	12.40	450	38.03	11.81
Focal child's age	1,099	8.03	4.46	649	8.40***	4.33	450	7.49	4.59
Sex of focal child	1,098	51%		648	51%		450	49%	
Marriage	1,100	74%		650	75%*		450	71%	
Caregiver's income per child	1,018	44.41	62.32	610	42.39	63.81	408	47.44	59.97
Neglect secrecy	1,097	2.33	0.74	649	2.47***	0.78	448	2.13	0.64
Kinship ties	1,100	2.74	1.50	650	3.09***	1.27	450	2.23	1.65
Social cohesion	1,100	2.93	0.15	649	2.98***	0.63	450	2.86	0.64
Influence	1,100	82.01	19.16	650	84.31***	18.01	450	78.5	20.21
Neighbourhood stability	1,100	13.06	4.55	643	14.24***	14.25	449	11.37	11.50
Social trust	1,100	3.89	0.22	648	3.94*	1.27	448	3.81	1.20
Family size	1,100	6.10	1.74	627	6.96***	4.78	444	4.89	2.07

Bivariate differences between rural and urban samples are compared using t-tests and bivariate logistic regression, adjusting for clustering by settlement

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

significant (0.47 vs. 0.28, $p < 0.001$). Similarly, influence by elders and family heads was highly and significantly endorsed in the rural communities, 84.31 on a scale of 100, compared with the urban communities, 78.5, ($p < 0.001$). Residents in rural communities appear to be more cohesive than in urban communities (Mean = 2.98 vs. 2.86) and the difference is statistically significant ($p < 0.001$). Likewise, trust among neighbours was much higher in the rural areas compared to the urban areas (3.94 vs. 3.81, $p < 0.05$).

On average, mothers in the rural communities lived in houses with about five adult family members and spent an average of 14 years living in the same neighbourhood. The average family size and residential stability of mothers in rural communities were greater, and significant (statistically), than those in urban communities. Also, there were significant differences between the means for rural and urban communities in terms of mother's marital status (75% vs. 71%, $p < 0.05$), kinship ties (3.09 vs. 2.23, $p < 0.001$), and the social desirability of reporting child maltreatment $p < 0.001$ (2.47 vs. 2.13, $p < 0.001$). However, there were no significant differences in the age and sex of the focal child, the mother's age, and the mother's income per child in rural versus urban communities.

Table 2 presents results for the main effects model on individual level influence and physical abuse severity. In the overall full sample, physical abuse severity decreases as individual level currency of influence increases ($B = -0.001$, $p < 0.05$). The association between individual level currency of influence and physical abuse severity was stronger in rural communities and significant ($B = -0.004$, $p < 0.01$), but not significant in the urban areas ($B = -0.001$, $p = 0.31$). Specifically, each increase on the currency of influence scale was associated with a 0.004 decrease in physical

Table 2 Random effects regression models on individual influence and physical abuse severity (Rural vs. Urban)

Variables	Model 1: Rural (n=551)			Model 2: Urban (n=398)			Model 3: Full Sample (N=949)		
	B	SE	95% CI	B	SE	95% CI	B	SE	95% CI
Caregiver's age	-0.01	01	-0.02 0.001	-0.002	0.003	-0.01 0.004	-0.01*	0.003	-0.01- -0.00
Focal child's age	0.03	0.01	-0.01 0.05	0.01	0.01	-0.004 0.02	0.01	0.01	-0.003- 0.02
Sex of focal child	0.04	0.10	-0.16 0.24	-0.03	0.05	-0.13 0.08	0.05	0.05	-0.05- 0.16
Marriage	0.02	0.13	-0.23 0.27	-0.009	0.06	-0.13 0.11	0.04	0.06	-0.09- 0.16
Income per child (USD)	0.002*	0.001	-8.47 0.003	0.001	0.001	-0.003 0.001	0.00	0.001	-0.00- 0.001
Neglect secrecy	-0.06	0.07	-0.19 0.07	-0.10**	0.04	-0.19 -0.02	-0.07*	0.04	-0.15- -0.002
Kinship ties	-0.06	0.04	-0.14 0.03	-0.01	0.02	-0.04 0.04	0.01	0.02	-0.03- 0.05
Social cohesion	-0.23**	0.08	-0.39 -0.07	-0.01	0.05	-0.10 0.079	-0.08	0.05	-0.17 0.01
Family influence	-0.004**	0.001	-0.01 -0.001	-0.001	0.001	-0.02 0.001	-0.001*	0.001	-0.003 -0.001
Neighbourhood stability	0.01**	0.004	0.001 0.02	-0.002	0.003	-0.01 0.004	0.003	0.002	-0.002 0.01
Social trust	-0.06	0.04	-0.14 0.02	-0.04	0.02	-0.05 0.04	-0.03	0.02	-0.08 0.01
Family size	0.04***	0.01	0.02 0.06	0.04*	0.01	0.01 0.06	0.02**	0.01	0.01 0.04

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

abuse severity. Sense of social cohesion in the rural communities was negatively associated with physical abuse severity ($B = -0.23, p < 0.01$), but not significant in the urban communities, albeit a negative coefficient ($B = -0.01, p = 0.91$). In contrast to theoretical postulations, neighbourhood stability ($B = 0.01, p < 0.01$) and median income of caregivers per child ($B = 0.02, p < 0.05$) predicted higher physical abuse severity in the rural samples but not in the urban areas (neighbourhood stability, $B = 0.03, p = 0.57$; income per child, $B = 0.001, p = 0.26$). That said, the association between social trust and physical abuse severity was negative but not significant in all three individual level models.

Results of the effects of community level wealth of influence on physical abuse severity is shown in Table 3. The association between community level wealth of influence and physical abuse severity was negative in the full sample ($B = -0.02, p < 0.05$) and highly significant in the rural model ($B = -0.04, p < 0.001$) but not significant in the urban sample ($B = -0.01, p = 0.35$). A unit increase on the community level influence scale is associated with 0.04 decrease in physical abuse severity in rural communities. Similarly, community level social cohesion strongly and significantly predicted less physical abuse severity in both the full ($B = -1.48, p < 0.001$) and rural samples ($B = -1.76, p < 0.001$), but not urban ($B = -0.24, p = 0.72$). A unit

Table 3 Random effects regression models on community influence and physical abuse severity (Rural vs. Urban)

Variables	Model 1: Rural (<i>n</i> =579)			Model 2: Urban (<i>n</i> =406)			Model 3: Full Sample (<i>N</i> =985)		
	B	SE	95% CI	B	SE	95% CI	B	SE	95% CI
Caregiver's age	-0.01*	0.004	-0.02 0.00	-0.001	0.002	-0.01 0.004	-0.01*	0.003	-0.01 -0.002
Focal child's age	0.01	0.01	-0.01 0.03	0.01	0.01	-0.01 0.02	0.01*	0.01	-0.001 0.03
Sex of focal child	0.08	0.08	-0.08 0.25	-0.03	0.05	-0.13 0.08	0.04	0.06	-0.07 0.16
Marriage	0.01	0.10	-0.19 0.21	0.01	0.06	-0.11 0.13	0.04	0.07	-0.09 0.18
Income per child (USD)	0.00	0.00	-0.00 0.002	0.001	0.001	-0.01 0.001	0.00	0.001	-0.01 0.002
Neglect secrecy	-0.07	0.05	-0.18 0.03	-0.11**	0.04	-0.19 0.02	-0.06	0.04	-0.14 0.017
Kinship ties	-0.01	0.03	-0.08 0.06	0.02	0.02	-0.01 0.05	-0.01	0.02	-0.04 0.04
Level 2:									
Social cohesion - community	-1.76***	0.25	-2.26 -1.20	-0.24	0.67	-1.56 1.08	-1.48***	0.45	-2.36 -0.60
Community influence	-0.04***	0.01	-0.05 -0.03	-0.01	0.01	-0.02 0.01	-0.02**	0.01	-0.04 -0.01
Neighbourhood stability	0.07***	0.01	-0.04 0.10	0.01	0.02	-0.03 0.04	0.03	0.02	-0.01 0.07
Social trust- community	-1.70***	0.25	-2.19 1.20	-0.05	0.15	-0.35 0.25	-0.53	0.31	-1.15 0.08
Family size -community	0.06	0.04	0.03 0.14	0.04	0.09	-0.14 0.22	0.22***	0.07	0.08 0.35

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

increase in community level social cohesion is associated with 1.76 decrease in physical abuse severity in rural communities. A similar significant result was found for the association between community level social trust and physical abuse severity in rural communities ($B = -1.70$, $p < 0.001$).

4 Discussion and Implications

4.1 Influence and Physical Abuse Severity

Results from the study support all three hypotheses presented. Even when controlling for levels of social cohesion and trust among community members, individual level influence by elders and family heads is associated with lower levels of physical abuse severity (H1), and community level wealth of influence is associated with lower levels of physical abuse severity (H2). Though the findings are preliminary and require replication within other contexts, they highlight the need to consider other community strengths beyond those relating to power and money as integral to

collective efforts to build stronger communities that protect children (cf. McDonell et al., 2015; McLeigh et al., 2015; Melton, 2014). The findings also confirm that social exchange currencies - money, love, power and influence - are differentiated and function independently to each other (Gould, 1987; Luhmann, 1976). Hence, one currency cannot be reduced to or subsumed by the other, nor can they be lumped together as one currency. The crux of the results in this study is that parents are more likely to desist from perpetrating physical abuse against their children when they live in communities where respect for and influence of community leaders is high.

Similarly, the results suggest that parents who receive advice from a respected community elder or family head to stop or refrain from using physical abuse as a mechanism to discipline children may desist from physical abuse. Parents in Ghana may heed parenting advice given by a family head because of the perceived legitimacy of respect accorded to older people and the associated social costs of being perceived as a disrespectful person in the community (van der Geest, 2004; Issahaku, 2022). Indeed, some Ghanaian parents argued that they are more likely to take advice from a respected person in the community regarding child neglect behaviours, including making sure children are not left alone or under the care of inappropriate carers, in order to avoid feelings of guilt and shame (Abdullah & Emery, 2022a). Empirical studies on mechanisms that underlie the efficacy of informal actions by ordinary people in relation to delinquent and violent behaviours have shown that shame and perceived embarrassment within the locality motivate deterrence (See. Grasmick et al., 1993, 1991; Grasmick & Bursik, 1990; Klepper & Nagin, 1989; Nagin & Pateroster, 1993). Thus, parenting advice given by a family head regarding child discipline could have a stronger impact on influencing desistance from physical abuse than a random threat by a neighbour to call the police. In addition to wanting to avoid feelings of embarrassment and shame at the community level, it has been shown that parents interpret the motivations of people's actions differently. For instance, advice provided by a respected person in the community regarding child neglect behaviours was perceived as a supportive gesture by parents, denoting the community members' commitment to the wellbeing of the child (ibid.). In contrast, the parents perceived actions to report child abuse or neglect behaviours to the police or child protection as malicious or hateful, and was less likely to cause a change in the behaviour of the parent. As such, parenting advice given by a respected older person can have a positively differential effect on parenting and physical abuse due to wanting to be seen to be good parents in the eyes of the community (i.e., avoiding feelings of guilt, shame, and embarrassment) as well as perceiving the advice of a respected elder or community member as supportive and motivated by good intentions. In this way, the findings have theoretical and practical relevance for child maltreatment prevention.

First, results on the association between influence (individual and community level) and physical abuse severity provide empirical evidence and clarity to support existing claims about mechanisms that underlie the effects of neighbourhood social processes on child maltreatment behaviour (Barnhart & Maguire-Jack, 2016; Cao & Maguire-Jack, 2016; Kim & Maguire-Jack, 2015; Maguire-Jack & Showalter, 2016; McLeigh et al., 2018; Wolf, 2015). Studies that examined the association between community characteristics/social processes and child maltreatment often interpret their findings based on the function of the rational deterrence hypothesis

(Barnhart & Maguire-Jack, 2016; Cao & Maguire-Jack, 2016; Kim & Maguire-Jack, 2015; Maguire-Jack & Showalter, 2016; McLeigh et al., 2018; Wolf, 2015). For instance, the association between social cohesion and child maltreatment (Barnhart & Maguire-Jack, 2016; Maguire-Jack & Showalter, 2016; McLeigh et al., 2018) are often interpreted as “parents likelihood to desist from physical abuse in communities where they trust that their neighbours will intervene to do something”. Findings from this study suggest that *influence* could be the implicit currency within the rational deterrence framework that motivates deterrence from maltreatment when neighbourhood social processes are activated. Hence, it can be argued that the influence of respected/influential persons in communities plays an independent role in child maltreatment prevention. In addition, the strength of influence at the community level is likely to have greater positive effects on child maltreatment behaviours in rural communities because of more robust collective cultural values, such as Abiriwatia, that reinforce respect and lineage norms in rural communities (Abdullah et al., 2023a; Nukunya, 2003). These findings align with a qualitative study conducted by Abdullah and Emery (2022a) which demonstrated that the deterrence mechanism could be activated by parents’ concerns about the probability of losing respect and influence if they engage in normatively undesirable behaviour. Hence, it may be the case that the parent will accept or act on the advice given by the respected older person or family head to avoid garnering a reputation for being a bad parent in the community or branded as a disrespectful person. This suggests that, even within influence, the effects of utility (cost and benefit) are relevant in rational decision making.

In addition to the existing evidence on social processes impacting on strengths of communities, such as community participation and engagement, social trust, inter-generational closure, and community solidarity (Cao & Maguire-Jack, 2016; Kim & Maguire-Jack, 2015; Molnar et al., 2016), this study has identified community wealth of influence as another community social process and strength that has the potential to increase the effects of neighbourhood social process factors on child maltreatment by having an independent protective effect on the perpetration of physical abuse.

Theoretically, a key concern with the rational deterrence hypothesis regarding physical abuse has to do with the recent anomalies in the effects of informal social control on child maltreatment (Abdullah & Emery, 2022b; Emery et al., 2015a, 2015b, 2019). Empirical findings show that punitive informal social control is not associated with physical abuse, but that protective informal social control is associated with lower levels of physical abuse severity (cf. Abdullah & Emery, 2022b; Emery et al., 2015a, 2015b, 2019; Emery et al., 2015c). This anomaly raises questions about the social exchange currencies that regulate the behaviours of rational actors when informal social control is activated. If calculations are made in other currencies, such as *influence*, it could be concluded that the extent of physical punishment, arrest, or injury that a parent could face for engaging in acts of physical abuse is less likely to matter to them than how much influence and respect they could lose in the community for failing to comply with a gentle suggestion from a respected elder or community leader. In other words, “*I am stopping, not because I will be punished by a police officer or a child protection officer*” but “*I am stopping because I will lose the respect of the community and/or the respect of the person who asked me to stop*”. Our findings confirm this interpretation and suggest that influence may be a

key social exchange currency that regulates behaviours of rational actors in incidents such as domestic violence and child abuse.

4.2 Rural and Urban Community Dynamics and Practice Relevance

Results on the association between individual level influence, community wealth of influence, and physical abuse severity were only significant in the rural sample (H3). Though we predicted a much stronger finding in the rural model, we did not expect a non-significant finding for the urban samples. On the one hand, the findings reflect the deteriorating nature of collective values in urban settings in Ghana (Nukunya, 2003). On the other hand, they confirm recent empirical evidence regarding the strength of collective values, such as Abiriwatia and Ubuntu, in rural communities in Ghana and Africa at large (cf. Abdullah et al., 2023a, 2023b; Chilwalo, 2020). Hence, efforts are required to strengthen community values, such as Abiriwatia, which provide normative support for influence in traditional rural communities in Ghana. Such efforts need to recognize the unique role of elders, family heads, and community leaders, as this study has shown that strengthening their influence at the community level could contribute significantly to reducing levels of physical abuse severity. Specifically, we recommend that these actors (community elders, family heads, and community leaders) be appointed paraprofessional social workers to spearhead local level child maltreatment prevention initiatives.

Efforts to strengthen community wealth of influence in rural communities should not lose sight of other important community social process factors, such as social trust and community social cohesion, as evidence from this study has shown that they robustly predict lower levels of physical abuse severity. Hence, we advocate for the development and implementation of a multi-focused, community-based child maltreatment prevention program in Ghanaian communities to strengthen the traditional and normative influence of community elders and leaders, and to strengthen community solidarity and trust among members. Traditional practices that are known to strengthen collective values and social cohesion in rural areas, such as compound housing structures, neighbourhood meetings, community social activities, and neighbourhood bylaws should be introduced or reinforced in urban areas in Ghana. There is a need for a conscious effort from all stakeholders, particularly government, to address factors contributing to the loss of collective values and social cohesion in urban communities in Ghana. Incentivising new home builders and developers to build more family homes in family friendly designated areas rather than individualistic, high-density apartment structures could have a positive impact on strengthening family and neighbourhood cohesion. Additionally, policies that spotlight the role of community leaders and encourage urban dwellers to participate in community social activities could help strengthen collectivism in urban areas.

4.3 Limitations

Causal implications cannot be made from this study as the findings only represent association. Our measure of influence is new, although a psychometric analysis by the Authors (forthcoming) showed that it is reliable and valid, therefore replication

studies focusing on enhancing the measures are encouraged. Such studies could investigate whether willingness to comply with suggestions are accurate indicators of influence. Although this study made theoretical claims about the rational deterrence model and the ways perpetrators calculate costs pertaining to acts of violence, we could not directly observe how this is done. In addition, our discussions of the potential mechanisms through which influence (specifically advice provided by a respected older person) impacts on child abuse behaviour may be limited. Future studies may extend this finding by empirically investigating the effects of other variables, such as severity, swiftness, and certainty of the advice. Such studies could also explore the social cost associated with the failure to accept advice provided by a respected older person. Lab or vignette experiments may be useful in examining the ways that perpetrators calculate costs in relation to child maltreatment. The findings are limited to the Ghanaian context, and further research evidence is needed from other contexts, including diverse cultures and communities, to support our findings.

5 Conclusion

Much, if not all, of the logic regarding the effects of neighbourhood social processes and informal social control (following social disorganization theory or collective efficacy theory) follows the rational deterrence framework's assumption that rational actors will deter/refrain from violence when situational sanctions are activated/apparent. Following recent contrasting evidence in child maltreatment and family violence literature, we argued that it is important to untangle the social exchange currency that undergirds or regulates the behaviour of perpetrators, and that the independent effects of the four social exchange currencies should be regarded when evaluating their effects on behaviour. We analysed *influence* (a social exchange currency) within the rational deterrence framework and hypothesized that its effect at individual and community levels could deter severe abuse in communities. The results of this study support our hypotheses, which suggests that the social exchange currencies may have independent effects on human behaviour and should be analysed within the rational choice deterrence framework. The study's findings generate new discussions about the positive benefits of the four social exchange media and suggest measures to strengthen and boost them in communities. The rural-urban disparity in the association between influence and physical abuse severity prompts a call for targeted interventions that promote social cohesion in urban environments. Community values such as *Abririwatia* and *Ubuntu* are important to the development of social cohesion in rural areas and their impact can be strengthened by supporting the role of community leaders, family heads, and elders.

Author Contributions All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Alhassan Abdullah, Felix Mensah, Lana Zannettino, and Clifton Emery. The first draft of the manuscript was written by all authors and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Data Availability Data for this research will be made available upon request to the corresponding author.

Declarations

Ethical Approval Ethics approval for the research was obtained from the Human Research Ethics Committee (HREC) of the University of Hong Kong. Ethics approval number (EA200074).

Informed Consent Written informed consent was obtained from all participants after information on the consent form were read to them in a layman language. The consent form detailed the participants voluntary rights to participate in the study and their rights to withdraw from the study.

Research Involving Human Participants The research was conducted with human participants, specifically female caregivers. All necessary protocols were followed in line with the principles and procedures for the responsible conduct of research.

Competing Interests The authors have no relevant financial or non-financial interests to disclose.

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