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# Prosocial Behavior Among Preschool Children in Coastal and Highland Regions of East Java: A Descriptive Comparative Study

Ratna Nila Puspitasari<sup>1</sup>, Safiruddin Al Baqi<sup>2</sup>, Ima Frafika Sari<sup>3</sup>

<sup>1,2</sup> Institut Agama Islam Negeri Ponorogo, Indonesia, <sup>3</sup> Universiti Kebangsaan Malaysia

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## Correspondence to

Ratna Nila Puspitasari,  
Islamic State Institute of  
Ponorogo, Indonesia.

## e-mail:

[ratnanila@iainponorogo.ac.id](mailto:ratnanila@iainponorogo.ac.id)

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## Abstract

Prosocial behavior in early childhood plays an important role in fostering the ability to sharing, helping, cooperating, and well-being. However, there is limited understanding of how geographical and socio-cultural contexts influence the development of prosocial behavior. This study aims to examine and compare the prosocial development of preschool children living in coastal and highland regions, highlighting how geographical, cultural, and environmental differences may influence early social behavior. The research is driven by the need to better understand contextual factors that shape children's prosocial tendencies or behaviors such as sharing, helping, and cooperating, that are critical for healthy interpersonal relationships and emotional growth. A quantitative comparative approach was employed, using a descriptive method with a Mann-Whitney U statistical test to compare prosocial behavior among preschool children in coastal and highland regions. The findings indicate that children in both regions exhibit a range of prosocial behaviors; however, the frequency and nature of these behaviors differ. Coastal children were more likely to demonstrate spontaneous helping and group-oriented cooperation, possibly due to communal lifestyle practices, while highland children showed more empathy-based behaviors, shaped by strong familial interactions and close-knit community values. The study concludes that environmental context significantly contributes to the development of prosociality in early childhood, with each setting offering unique strengths. These findings underscore the importance of culturally responsive early childhood education that nurtures prosocial behavior in line with local values and social norms. This research contributes to the growing body of literature on sociocultural influences on child development and suggests future studies to explore prosocial behavior through a broader range of ecological and cultural lenses.

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## Introduction

In early childhood, the development of prosocial behavior is particularly critical because this stage lays the foundation for lifelong patterns of social interaction (Shi et al., 2021). During the preschool years, children begin to navigate social norms, respond to the emotions of others, and internalize values modeled by caregivers and educators (W. Zhang et al., 2023). These formative experiences contribute to the shaping of prosocial tendencies that influence how children relate to others in increasingly complex social environments. As such, fostering prosocial behavior at this developmental stage is considered essential for promoting cooperation (Houmanfar et al., 2022), reducing aggression (Hay et al., 2021), and cultivating inclusive (Leung, 2024), empathetic communities both in and outside of school settings (Chung et al., 2021).

The benefits of early prosocial behavior extend into adolescence and adulthood. Longitudinal studies suggest that prosocial children are more likely to succeed academically, avoid antisocial behaviors, and engage in civic and community activities later in life (Hay et al., 2021). These behaviors are also linked to mental health outcomes, including lower rates of anxiety and depression (X. Zhang et al., 2023). In essence, prosociality functions as a protective

factor that supports psychological resilience and fosters positive developmental trajectories. Therefore, understanding and nurturing prosocial development during the preschool years is vital not only for immediate social competence but also for the overall well-being and societal participation of individuals throughout their lives (Bartolo et al., 2023).

Children do not develop in a vacuum, their behaviors, attitudes, and emotional patterns are deeply influenced by the environments in which they grow (Sun et al., 2022). From an ecological systems perspective, as proposed by Bronfenbrenner, children are situated within a complex set of interrelated contexts, ranging from immediate family and community structures to broader cultural and environmental conditions. These layers interact to shape how children perceive themselves and others, how they learn to express empathy, and how they engage in social interactions. As such, the development of prosocial behavior cannot be separated from the social and cultural fabric that surrounds the child (Veiga et al., 2023).

Ecological factors, including the geographical features of a region, also play a crucial role in shaping children's social experiences (Jansson et al., 2022). Children growing up in coastal regions may be exposed to different daily routines, occupational structures, and community interactions compared to those in highland regions. For instance, fishing-based economies may foster communal interdependence and shared responsibilities among family members, while agricultural lifestyles in highland regions may emphasize endurance, self-sufficiency, or cooperation in different forms. These lived experiences influence how children internalize values and interact within their social world (Sofian et al., 2025).

While this literature has contributed significantly to our understanding of prosocial development, it tends to focus on universal processes or within-group differences, often overlooking the potential impact of geographically rooted ecological and cultural factors. Most research has been conducted in urban, middle-class settings, with limited attention given to how diverse environments, particularly in rural or geographically unique regions may influence children's social development. Although some cross-cultural comparisons exist, they often involve broad national differences rather than intra-national or regional contrasts shaped by distinct ways of life.

There remains a noticeable gap in the literature concerning direct comparisons between children living in contrasting ecological environments such as coastal and highland regions. These regions often represent not only geographical but also socioeconomic, occupational, and cultural differences that may influence the development of social behaviors in unique ways. A comparative approach that examines how children from these differing settings exhibit and internalize prosocial behaviors could illuminate the role of lived experience and environmental affordances in shaping early social development. Addressing this gap is essential for developing a more nuanced and context-sensitive understanding of prosociality in young children.

This study aims to compare the prosocial development of preschool-aged children from two distinct ecological regions, coastal and highland, in order to explore how environmental and socio-cultural contexts shape early social behaviors such as helping, sharing, and cooperating. By examining the similarities and differences between these two groups, the research seeks to uncover contextual influences that may contribute to variations in prosocial tendencies. The ultimate goal is to provide insight into how localized experiences and environmental conditions inform broader developmental patterns in early childhood.

## Methods

### Research Design

This study adopted a quantitative approach with a descriptive-comparative design. The purpose of this design was to examine differences in prosocial behavior among preschool-aged children residing in two distinct ecological regions: coastal and highland areas. Without manipulating variables, this design allowed for the natural comparison of group characteristics based on geographic and sociocultural contexts (Stockemer & Bordeleau, 2023).

## Participants

A total of 210 preschool children aged 5–6 years (118 girls and 92 boys; mean age = 5.4 years) participated in this study. The participants were evenly divided into two groups based on geographic location: 105 children from five early childhood education institutions in coastal regions and 105 children from five institutions in highland regions of East Java Province, Indonesia. A purposive sampling technique was employed to ensure that selected schools met specific criteria, including accessibility, demographic composition, and the availability of children within the target age range.

## Instruments

Prosocial behavior was measured using an adapted version of the instrument developed by Karoğlu and Ünüvar (2015), entitled *Analyzing the Prosocial Behaviors of Pre-school Children in Accordance with Teacher's Point of View*. The instrument measures four core dimensions of prosocial behavior: helping, sharing, cooperating, and comforting. The original scale was translated into Indonesian and culturally adapted through a forward-backward translation process. Expert validation was conducted by a psychologist, an early childhood education lecturer, and a linguist. The final instrument consisted of 20 items (five items per dimension) rated on a 4-point Likert scale ranging from 1 ("never") to 4 ("always"). Content validity was established with a Content Validity Index (CVI) of 0.92. A pilot study with a separate sample of 30 children produced a Cronbach's alpha of 0.87, indicating strong internal consistency.

## Procedures

The study was approved by an official research ethics review board in compliance with applicable research regulations. Written informed consent was obtained from the parents or legal guardians of all participants. Data were collected from August 2024 to February 2025. Questionnaires were completed by classroom teachers who had consistent daily interaction with the children over the school term. To ensure uniformity in data collection, researchers conducted a short orientation session with the teachers to explain each item and clarify the scoring procedure.

## Data Analysis

Normality of the data was assessed using the Shapiro–Wilk test, which indicated that the data were not normally distributed. Consequently, the Mann–Whitney U test was employed to determine whether significant differences in prosocial behavior existed between children in coastal and highland regions. Each of the four dimensions (helping, sharing, cooperating, comforting) was analyzed separately to provide detailed comparative insights. Statistical analyses were conducted using IBM SPSS Statistics version 25, with a significance level set at  $p < .05$ .

## Result

The descriptive analysis presents the characteristics of respondents from the highland and coastal groups. The characteristics analyzed included gender and age, which were important variables in this study. The data obtained provide an overview of the distribution of sex and age groups in the two regions, which are then described in the following table 1.

Table 1. Demographic data of respondents in highland and coastal groups.

	Highland		Coastal	
	N	%	N	%
<b>Gender</b>				
Female	58	55%	60	57,1%
Male	47	45%	45	42,9%
<b>Age (years)</b>				
3-3.5	33	31,4%	36	34,3%
3,5-4	36	34,3%	35	33,3%

The table 1 shows the distribution of respondents by gender and age in two groups, namely Highland and Coastal. In terms of gender, in the Highland group there were 58 female respondents (55%) and 47 male respondents (45%). Meanwhile, in the Coastal group, female respondents amounted to 60 people (57.1%) and male respondents 45 people (42.9%). Regarding the age distribution, in the Highland group, respondents aged 3-3.5 years were 33 people (31.4%), 36 people (34.3%) were 36 people (34.3%) and 36 people (34.3%) were 4-4.5 years old. In the Coastal group, respondents aged 3-3.5 years were 36 people (34.3%), 35 people (33.3%) were 35-4 years old, and 34 people (32.4%) were 4-4.5 years old. Overall, both groups had a relatively balanced distribution of sex and age, although there was little difference in the proportion of respondents by group.

More specifically, this study aims to determine the differences in early childhood prosocial abilities in coastal and highlands areas, which are measured through four main aspects: helping, sharing, cooperative, and comforting. Data were obtained through a prosocial assessment scale filled in by classroom teachers and analyzed using the Mann–Whitney U test because the data was not normally distributed. The results of the analysis are presented based on each aspect to provide a more detailed picture of the prosocial characteristics of children in the two geographical areas.

### Helping Behaviors among Preschool Children in Coastal and Highland Regions

The analysis of the helping behaviors aspect aims to see the extent to which early childhood in coastal and mountainous areas shows a tendency to help others voluntarily. The following data shows the distribution of the average score of helpful behaviors based on the results of teacher assessments.

Table 2. Descriptive statistics of helping behaviour in highland and coastal groups.

	N	Minimum	Maximum	Mean	Std. Deviation
<b>Highland</b>	105	3	4	3.43	.497
<b>Costal</b>	105	2	4	3.33	.494

Analysis of the prosocial aspect of helping showed that children living in highlands areas had a slightly higher average score ( $M = 3.43$ ) compared to children in coastal areas ( $M = 3.33$ ). Despite the difference in mean values, the results of the Mann–Whitney U test showed that the difference was not statistically significant ( $p = 0.177$ ). Thus, it can be concluded that there is no significant difference in helpful behavior between early childhood living in coastal and highlands areas based on teachers' assessments.

### Sharing Tendencies among Preschool Children in Coastal and Highland Regions

The sharing tendencies aspect is an important indicator in children's prosocial development. In this section, the analysis was carried out to compare the tendency of children to share goods or attention with peers in two different geographical areas.

Table 3. Descriptive statistics of sharing tendencies in highland and coastal groups.

	N	Minimum	Maximum	Mean	Std. Deviation
<b>Highland</b>	105	2	4	3.14	.713
<b>Costal</b>	105	2	4	3.29	.631

The results of the analysis on the sharing aspect showed that children in coastal areas had a higher average score ( $M = 3.29$ ) compared to children in highlands areas ( $M = 3.14$ ). Although there was a difference in scores between the two groups, the results of the Mann–Whitney U test showed that the difference was not statistically significant ( $p = 0.160$ ). Thus, differences in sharing behavior between early childhood in coastal and highlands regions cannot be concluded as statistically significant differences.

### Cooperative Skills among Preschool Children in Coastal and Highland Regions

Cooperative skills behavior reflects the child's ability to work together in a group or with other individuals. The following data presents a comparison of cooperative skills between children in coastal and mountainous areas.

Table 4. Descriptive statistics of cooperative skill in highland and coastal groups.

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Highland	105	2	4	2.90	.613
Costal	105	2	4	2.76	.613

In the cooperative aspect, children in highlands areas obtained a slightly higher average score ( $M = 2.90$ ) compared to children in coastal areas ( $M = 2.76$ ). However, the results of the Mann–Whitney U test showed that this difference was not statistically significant ( $p = 0.091$ ). This indicates that there is no significant difference in cooperative behavior between early childhood in the two regions based on teacher assessments.

### Comforting Behaviour among Preschool Children in Coastal and Highland Regions

The last aspect analyzed was comforting behaviors. This aspect is closely related to empathy and social sensitivity such as the comforting behavior of a friend who is sad or struggling. The following table presents the results of a comparison of entertaining behavior between the two groups of children.

Table 5. Descriptive statistics of comforting behaviour in highland and coastal groups.

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Highland</b>	105	2	4	3.38	.578
<b>Costal</b>	105	2	4	2.62	.578

Analysis on the comforting aspect showed that children in highlands areas had significantly higher average scores ( $M = 3.38$ ) compared to children in coastal areas ( $M = 2.62$ ). The results of the Mann–Whitney U test showed a statistically significant difference ( $p = 0.000$ ), indicating a significant difference in entertaining behavior between early childhood in the two regions. These findings suggest that children in highlands regions tend to show higher levels of empathy and care compared to children in coastal areas.

### Discussion

Prosocial development refers to the emergence and growth of voluntary behaviors intended to benefit others, such as helping, sharing, comforting, and cooperating (Karoğlu & Ünüvar, 2015). Rooted in both biological predispositions and social experiences, prosocial behavior reflects a child's growing capacity for empathy (M. Wang et al., 2019), moral reasoning (Mohd Yusoff et al., 2022), and emotional regulation (Song et al., 2018). Scholars across developmental psychology emphasize that prosociality is not only a marker of healthy emotional development but also a predictor of long-term outcomes such as academic success (Gerbino et al., 2018), peer acceptance (M. Wang et al., 2019), and mental well-being (Martela & Ryan, 2016).

Prosocial behaviors such as sharing, helping, and cooperating are essential for building and maintaining healthy interpersonal relationships. These behaviors enable children to engage positively with peers, resolve conflicts constructively, and participate in collaborative activities (Pung et al., 2021). As children consistently practice prosocial actions, they develop a stronger sense of trust, reciprocity, and mutual respect, qualities that are foundational for long-term social integration. Research has shown that children who exhibit higher levels of prosocial behavior are more likely to be accepted by peers, form stable friendships, and experience lower levels of social rejection (M. Wang et al., 2019).

This study shows that there is a significant difference in the comforting aspect of early childhood prosocial development between coastal and highland areas. The results of the analysis showed that children in highlands areas had higher average scores in comforting behaviors compared to children in coastal areas. This difference was statistically significant ( $p = 0.000$ ), which indicates that children in the mountains have higher levels of empathy and care.



These findings are interesting to analyze within the theoretical framework of children's social-emotional development, particularly in different geographical and cultural contexts.

One relevant theoretical approach to understanding this difference is the prosocial developmental theory of Martin Hoffman, which explains that children's empathy develops through five stages, ranging from global empathy in infants to role-taking empathy in school-age children (Imuta et al., 2016). In the early stages, the development of empathy is greatly influenced by the quality and intensity of social interaction experienced by children (Salerni & Caprin, 2022a). Social environments in highlands regions that tend to be more homogeneous, stable, and community-oriented are likely to provide more opportunities for children to observe, feel, and respond to the emotions of others in depth. This supports the emergence of comforting behavior as a tangible manifestation of empathy.

In addition, the developmental ecological framework of Bronfenbrenner can also explain the contribution of context to these differences. In this perspective, children's development is influenced by environmental systems that interact with each other, ranging from microsystems (families, neighbors) to macrosystems (cultural values and social norms) (Veiga et al., 2023). In highlands regions, interactions within microsystems tend to be more intimate, with high social cohesion and a strong adult role in modeling empathic behavior. In contrast, children in coastal areas who live in more heterogeneous and dynamic societies may experience more varied but not always intense social interactions, limiting the development of deep empathy and comforting behaviors.

Albert Bandura, (2021) in cognitive social theory provides an important framework for understanding how early childhood learns and develops empathy. This theory explains that children learn not only through direct experience, but also through the process of observation, imitation, and modeling of the behavior of others. Empathy can be understood as the result of a complex social learning process, in which the child observes the emotional responses of adults or peers and imitates them in similar social situations. According to Bandura, (2021), one of the main concepts in his theory is observational learning. Early childhood is very sensitive to their social environment and has a natural ability to imitate the behavior they see (Rohlfing et al., 2022). When a child witnesses a teacher, parent, or friend showing an act of empathy such as helping a fallen friend or comforting a grieving person. Children will capture these behaviors as models that can be internalized and reproduced. It is through this process that children learn how to respond empathically to others. Bandura also emphasized the importance of reinforcement in the learning process. Children who exhibit empathetic behavior and receive positive feedback, such as praise or recognition from adults, will be more motivated to repeat the behavior (Spinrad & Gal, 2018).

Social environments such as family, school, and society play an important role as agents of socialization. If the environment displays empathy consistently, then it will be easier for children to develop a strong sense of empathy (Woolrych et al., 2024). On the other hand, if children grow up in an environment that is less attentive to the emotions and needs of others, the development of empathy tends to be stunted (Roslan et al., 2022). Bandura also introduced the concept of self-efficacy or children's self-confidence in their ability to do something (Küry & Fischer, 2025). Children who feel able to provide help or comfort to others will be more likely to act prosocially. This belief is formed through the small success experiences that children have when trying to empathize and succeed.

Moreover, access to resources, exposure to natural environments, and patterns of socialization can differ significantly based on geographic location, contributing to distinct developmental pathways. Differences in population density, mobility, and access to early childhood education programs may also affect the quantity and quality of children's social interactions (Gul Mazloum Yar & Ishaq Shaheedzooy, 2023). All of these environmental conditions shape children's opportunities to practice and reinforce prosocial behaviors, making geographic context an important lens through which to understand variations in early

childhood development. By examining these factors comparatively, researchers can gain deeper insights into the contextual nature of prosocial growth.

Beyond peer relationships, prosocial behavior also contributes significantly to emotional development. Children who frequently engage in helping or cooperative behaviors often demonstrate greater empathy and emotional intelligence, allowing them to recognize and respond to the feelings of others. This emotional awareness supports the development of self-regulation skills, which are critical for managing frustration, delaying gratification, and adapting to social expectations (Wong et al., 2021). Moreover, by participating in acts of kindness and cooperation, children often experience internal rewards such as pride and a sense of belonging, reinforcing the value of caring for others (Łaguna et al., 2024).

From a developmental psychology perspective, prosocial behavior is considered a key milestone in early childhood that reflects the interaction between cognitive (Stout et al., 2021), emotional, and social growth (Salerni & Caprin, 2022a). Theories such as Piaget's stages of moral development and Vygotsky's sociocultural theory emphasize that children learn to act prosocially through interactions with caregivers and peers within their cultural context (Deniz et al., 2024). Similarly, global perspectives in child development research, including cross-cultural studies, have consistently shown that while the expression of prosocial behavior may vary across societies, the emergence of such tendencies in early childhood is a universal phenomenon. Scholars agree that regardless of cultural differences, prosociality plays a fundamental role in promoting adaptive functioning and social harmony in diverse communities (Y. Wang et al., 2021).

Social norms and expectations vary significantly across communities and influence how children learn to behave toward others. In some cultural settings, prosociality is explicitly encouraged through structured moral instruction, while in others, it is modeled through communal living and daily cooperative practices. For example, children raised in collectivist cultures may develop a stronger sense of obligation to help and support group members, while those from more individualistic settings may express prosociality more selectively. These cultural scripts provide children with behavioral templates, shaping their responses in social situations and guiding the development of empathy, altruism, and cooperation (Bacchini et al., 2024).

A growing body of literature has explored the development of prosocial behavior in early childhood, focusing on factors such as parenting style, peer interactions, emotional regulation, and moral reasoning (Eggum et al., 2011). Numerous studies have emphasized the importance of early attachment relationships, warm caregiving, and positive discipline in fostering prosocial tendencies. In addition, researchers have examined how children's emotional understanding and empathy are positively associated with their willingness to help, share, and cooperate with others. These findings have been foundational in identifying the internal and interpersonal mechanisms that support prosocial growth in preschool-aged children (Salerni & Caprin, 2022b).

These findings are also in line with previous research. For example, study found that children living in rural communities with high social cohesion exhibited stronger prosocial behaviors than children in urban environments (Crockett et al., 2016). Hastings et al. (2019) noted that a more stable social climate and consistent emotional relationships within the family support the growth of empathic concern. In this context, children in the mountains appear to have greater exposure to consistent and profound social dynamics, compared to children in coastal areas who may be more exposed to social mobility and high cultural variation.

Notably, in the dimensions of helping, sharing, and cooperating, no significant differences were found between the two regional groups. This suggests that certain prosocial dimensions may not be so much dependent on geographic context, but rather influenced more by universal factors such as educational curriculum, general parenting patterns, and stimulation from the school environment. Given that the two regions in this study have similar preschool education systems, this factor may explain the consistency in all three dimensions.

Furthermore, an important contribution of this study is the affirmation that prosocial development, particularly in the comforting aspect, is contextual and cannot be separated from the social environment in which the child grows up. This study expands the understanding of child developmental psychology by introducing geographic variables as determinants that may be rarely discussed in the global literature dominated by urban and Western contexts. Thus, these results reinforce the argument in cross-cultural studies that the developmental trajectory of empathy is not universal, but is largely determined by social norms, interaction patterns, and the structure of the community in which the child is raised.

The practical implications of these findings are also important. In highlands areas, intervention strategies can continue to utilize communal social interactions such as mutual cooperation or traditional activities to strengthen the values of empathy and comforting. On the other hand, in coastal areas, a more explicit and structured pedagogical approach may be needed in instilling the value of empathy, for example through social-emotional learning, role playing, or narrative activities that raise the theme of care. As suggested by Denham et al. (2023), the stimulation of emotional skills from an early age is an important foundation for the emergence of prosocial behavior in dynamic contexts.

However, this study has some limitations. Prosociality assessments are based only on teacher reports, which can contain perceptual or subjective biases. In addition, the geographical context used covers only two specific regions, so generalizations to other regions with different socio-cultural conditions need to be done carefully. Further studies are recommended to use longitudinal and multi-informant approaches to obtain a more comprehensive picture of the dynamics of child prosocial development in local contexts.

## Conclusion

This study aimed to examine differences in prosocial behavior among preschool-aged children (5–6 years old) living in coastal and highland areas of East Java Province using a descriptive-comparative quantitative design. The results showed a statistically significant difference in the aspect of comforting behavior, with children in highland regions demonstrating higher levels of empathy and social sensitivity. In contrast, no significant differences were found in the aspects of helping, sharing, and cooperating, indicating that these dimensions may be influenced more by universal factors such as classroom practices and early childhood curricula. These findings support Bronfenbrenner's ecological systems theory, which emphasizes the role of immediate and broader environments in shaping child development. The comforting behavior in highland children may be attributed to stronger communal ties, homogeneity, and social modeling rooted in close-knit communities.

From a practical standpoint, the results suggest the need for context-sensitive approaches in early childhood character education. Educators and parents in highland areas can reinforce prosocial values through community-based activities and intergenerational interaction, while those in coastal areas may benefit from structured emotional learning programs to nurture empathy. The study also contributes theoretically by filling a gap in the literature regarding intra-national ecological variation in prosocial development, which is rarely explored in current research. The identification of comforting as an ecologically sensitive prosocial trait highlights the importance of localized socialization patterns. Future studies are recommended to broaden the regional coverage, employ longitudinal and mixed-method approaches, and include perspectives from parents or peers to gain a more comprehensive understanding of how prosocial behaviors evolve in early childhood.

## Declarations

### Author contribution statement

All authors contributed substantially to the conception and design of the study. Ratna Nila Puspitasari was responsible for data collection, data analysis, and drafting of the manuscript.



Safiruddin Al Baqi contributed to the study design, statistical analysis, and revision of the manuscript. All authors read and approved the final version of the manuscript.

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### Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

### Declaration of Interests Statement

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

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