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The roots of belonging: childhood predictors of belonging in 22 countries

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Belonging is a fundamental human need, yet its origins in childhood experiences remain underexplored. Childhood predictors of belonging in adulthood using nationally representative data have also largely been overlooked. This study analyzes data from the Global Flourishing Study, a survey of 202,898 individuals from 22 countries, conducted in 2022–2023. Using random effects meta-analyses, the study examines associations between childhood factors and adult belonging. Good relationships with mother and father, and excellent childhood health were positively associated with the outcome, while abuse, feeling like an outsider, and financial difficulties showed substantial negative associations. Immigration status and parental divorce had slight negative impacts, while regular religious attendance was positively associated. Results also reveal considerable country-level variations in effect sizes. In Argentina, a very good relationship with the mother during childhood was a strong positive predictor of adult belonging, while in Japan, the effect was smaller but notable. The effects of childhood abuse on adult belonging are also varied, with a substantial negative effect observed in Turkey and South Africa, compared to a less marked negative effect in the United States and Nigeria. In Spain, Philippines and Brazil, weekly religious service attendance was strongly positively associated with higher belonging in adulthood, whereas in Sweden (and to some extent in South Africa), the effect, though moderate, was negatively associated with belonging. These findings demonstrate the importance of cultural context in shaping the impact of childhood experiences on adult belonging.

Keywords Belonging, Community, Childhood predictors, Cross-cultural, Flourishing, Global flourishing study

Mounting evidence indicates a global decline in societal belonging, accompanied by rising rates of loneliness and social isolation across age groups and contexts, including online environments[1–3]. These trends signify the need to understand and support the antecedents of belonging. A sense of belonging, or the feeling of being accepted, respected and included within a community or group, is universally acknowledged as vital to human well-being[4,5] because it is a fundamental human need[5]. Research confirms that people with a strong sense of belonging have better mental health, are happier, and have higher self-esteem[6–8]. On the other hand, lacking a sense of belonging can lead to serious psychological consequences, including depression and anxiety, and even increase the risk of mortality[9–11]. While the potential of belonging within communities for outcomes like well-being, physical and mental health, and economic benefits (e.g., stronger workforces, reduced healthcare costs, enhanced societal contributions) is well established[11], there is a substantial gap in our understanding of how early life shapes one's sense of belonging in adulthood. Most existing studies focus on the effects of belonging in the present with much of the existing literature investigating belonging within specific domains—for example school[12] college[13]workplace[14] neighbourhood[15] or family belonging[16]—rather than generalised belonging as a broad social experience. Likewise, there is less research on how childhood predictors retrospectively contribute to an adult's sense of belonging. This is an unfortunate oversight because early experiences may leave lasting impressions on how individuals relate to social groups, navigate relationships, and perceive belonging throughout life. Given that childhood is a foundational period known to shape future psychological

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outcomes[17,18], understanding early-life predictors of belonging is critical for fostering a flourishing society. Moreover, the current body of research largely overlooks the potential variability in how belonging develops across different cultures and societies. While a few studies have begun to explore cultural differences, there is still a lack of comprehensive, cross-national research examining how diverse childhood experiences in different countries contribute to feelings of belonging in adulthood. This gap in the literature suggests that we may be missing critical insights into culturally-specific factors influencing belonging. To address these gaps, the current study will explore how a wide range of childhood experiences, from family dynamics to societal involvement, are linked to an adult's sense of belonging across various cultural contexts.

Theoretical underpinnings

The underpinnings of this study are rooted in insights from psychological research that explores the determinants of belonging, as well as their implications for adult well-being[4,5,19,20]. Research shows that belonging is identifiable in children as young as three years old[21,22], reinforcing the idea that belonging develops early and may be shaped by foundational relational experiences. Bowlby's[23] attachment theory posits that the early bonds formed between children and their caregivers are critical to personal development and influence patterns of social integration, motivation, and emotional well-being throughout one's life. Ainsworth's[24] subsequent research, which expanded Bowlby's theories, provides further insight into how these early attachment styles could predict social relationships (e.g., place attachment) and a sense of belonging in adulthood[25]. For instance, individuals with secure attachments may show greater ease in forming and maintaining friendships, as they have internalized trust and empathy from their early interactions. Conversely, those with anxious or avoidant attachment styles may struggle with intimacy or dependability in relationships. Disrupted attachment patterns, characterized by inconsistency or neglect in early caregiving, can hinder the development of a sense of belonging and lead to feelings of isolation - all of which affect human flourishing[26]. The relevance of these early relationships and experiences to the development of a sense of belonging is further supported by research that links secure attachments in childhood to higher levels of social competence, better stress management, and greater emotional regulation in later life[27]. While belonging is considered to be dynamic and context-sensitive[28] early-life conditions—such as family structure, relationships with caregivers, and social environments—may shape patterns of belonging that persist into adulthood.

Variables and predictors of influence

Belonging is considered crucial because it is a fundamental human need[5] with its absence linked to factors in early childhood development[29]. Several specific childhood factors related to family and social environments can influence the development of belonging. These factors include one's year of birth[30] gender at birth[31,32] marital status or family structure[33] religious service attendance[34] relationships with parents[27] experiences of being an outsider[35,36] childhood abuse[37–39] self-rated health growing up[38] subjective financial status of family growing up[40] immigration status[35] race/ethnicity[35,41] and religious affiliation during childhood[42]. These variables can shape the development of belonging in adulthood. For example, a stable family environment often provides a secure base from which children explore the world and form connections. In contrast, family disruptions may create insecurities that challenge the formation of lasting relationships[43]. Similarly, the quality of relationships with parents (e.g., secure attachments formed with caregivers) has been linked to the ability to establish and maintain positive social relationships (via trust, empathy) in adulthood, which are critical components of belonging[23,24,27]. The role of religious service attendance and religious affiliation at a younger age is particularly noteworthy, as these experiences may not only offer a sense of community but also embed individuals within a shared belief system that can considerably influence their worldview and sense of identity[42]. For instance, Smith[44] highlighted how participation in religious activities fosters a collective identity and a network of support, which are essential for feeling a sense of belonging. The impact of religious engagement on belonging can vary across cultures and individuals. While religious participation can foster community for some, it may lead to exclusion or ostracism for others, depending on how religion is experienced, practiced, and integrated into daily life and social structures. Experiences of being an outsider can represent critical challenges to developing a sense of belonging[35].

Cross-cultural considerations

Immigration status and race/ethnicity introduce added layers of complexity to the experience of belonging[35,41]. Immigrants, for example, navigate the dual challenges of maintaining cultural identity while seeking integration into a new society, often facing barriers that can impede the development of a sense of belonging[36]. Similarly, racial and ethnic minorities may encounter systemic inequalities and discrimination that affect their social integration and sense of community[45]. These adverse experiences can lead to feelings of isolation and marginalization that are internalized, impacting individuals' ability to form healthy relationships and integrate into social groups later in life[39]. The exposure to these negative experiences with other factors (e.g., one's early health, childhood abuse, and subjective financial status of family during the early years of life)[39] further complicates the pathway to belonging, as these elements shape perceptions of self-worth, social integration, and the ability to navigate relationships with people of other social classes (e.g., an individual who grew up poor might always feel out of place among peers of the upper class).

While existing studies have provided valuable insights into the factors influencing belonging, many are limited by their focus on single-country samples or specific cultural contexts. This limitation points to the need for more expansive research that leverages diverse international samples to explore how different cultural, societal, and familial factors converge to influence the development of a sense of belonging across the lifespan. Our study bridges this gap by examining a wide range of childhood experiences and their impact on the sense of belonging in adulthood, among a broad spectrum of cultural and national contexts. We analyze a broad array

of childhood predictors across a large, diverse, international dataset (i.e., the Global Flourishing Study data) of over 200,000 individuals from 22 countries to provide a cross-national examination of the childhood factors—including family dynamics, personal attributes, and social circumstances—that shape the development of a sense of belonging later in life.

The current study

Our study is anchored around three research questions, each aiming to examine the associations between childhood experiences on the development of a sense of belonging in adulthood. The first research question explores how various aspects of a child's upbringing—ranging from family structure and parental relationships to early health and socioeconomic status—associate with an adult's self-rated sense of belonging. Therefore, we expect that among the childhood predictors that we will evaluate, certain predictors will show meaningful associations with an individual's self-rated sense of belonging in adulthood. Second, we explore whether the impact of these childhood predictors on the sense of belonging varies across different countries to understand how cultural, economic, and societal contexts might shape these associations, offering insights into the universal versus culturally specific elements of belonging. Thus, we hypothesize that the strength of associations between the childhood predictors and an individual's self-rated sense of belonging in adulthood will vary by country, reflecting differences in sociocultural, economic, and health contexts that characterize each nation. Lastly, we explore the robustness of our observed associations to potential unmeasured confounding using E-values, and we expect that some of the observed associations between the childhood predictors and an individual's self-rated sense of belonging in adulthood will be robust to such unmeasured confounding. These questions and hypotheses guide our exploration into how early experiences shape one's sense of belonging across diverse cultural landscapes and under varying social conditions.

Methods

The description of the methods below has been adapted from VanderWeele et al.[46]. Further methodological detail is available elsewhere[1,47–49,51,52].

Population

The Global Flourishing Study (GFS) is a study of 202,898 participants from 22 geographically and culturally diverse countries, with nationally representative sampling within each country, concerning the distribution of determinants of well-being. Wave 1 of the data included the following countries and territories: Argentina, Australia, Brazil, Egypt, Germany, Hong Kong (S.A.R. of China, with mainland China included from 2024 onwards), India, Indonesia, Israel, Japan, Kenya, Mexico, Nigeria, the Philippines, Poland, South Africa, Spain, Sweden, Tanzania, Turkey, United Kingdom, and the United States. The countries were selected to (a) maximize coverage of the world's population, (b) ensure geographic, cultural, and religious diversity, and (c) prioritize feasibility and existing data collection infrastructure. Data collection was carried out by Gallup Inc. Data for Wave 1 were collected principally during 2023, with some countries beginning data collection in 2022 and exact dates varying by country[52]. Four additional waves of panel data on the participants will be collected annually from 2024 to 2027. The precise sampling design to ensure nationally representative samples varied by country and further details are available in Ritter et al.[52]. Survey items included aspects of well-being such as happiness, health, meaning, character, relationships, and financial stability[53] along with other demographic, social, economic, political, religious, personality, childhood, community, health, and well-being variables. The data are publicly available through the Center for Open Science (COS) (https://www.cos.io/gfs). During the translation process, Gallup adhered to the TRAPD model (translation, review, adjudication, pretesting, and documentation) for cross-cultural survey research (*ccsg.isr.umich.edu/chapters/translation/overview*). Further details about methodology and survey development are documented in the GFS Questionnaire Development Report[54], GFS Methodology[52], and GFS Translations documents[55].

Measures

Candidate childhood predictors

We assessed several predictors at baseline, organized into specific categories: demographic, socioeconomic, family dynamics and relationships, health and well-being, and religious and spiritual predictors. For additional details on the measures, see the codebook or Crabtree et al.[54].

Demographic predictors Age was classified into groups: 18–24, 25–29, 30–39, 40–49, 50–59, 60–69, 70–79, and 80+. Participants were asked, "What is your age? Please enter your age below." Gender was assessed with the question, "What is your gender?" with response options being Male, Female, or Other. Immigration status was determined by asking, "Were you born in this country, or not?" with response options of Yes or No. Racial/ethnic identity was assessed in some countries with response categories varying by country.

Socioeconomic predictors Subjective financial status during childhood was assessed with the question, "Which one of these phrases comes closest to your own feelings about your family's household income when you were growing up, such as when YOU were around 12 years old?" The response options included Lived comfortably, Got by, Found it difficult, and Found it very difficult.

Family dynamics and relationship predictors Parent marital status and family structure during childhood were assessed by asking, "Were your parents married to each other when YOU were around 12 years old?" with response options being Married, Divorced, Never married, or One or both had died. Relationships with parents were assessed with questions such as, "Please think about your relationship with your mother when you were

growing up. In general, would you say that relationship was…," with response options of Very good, Somewhat good, Somewhat bad, or Very bad. Responses were dichotomized into Very/Somewhat good versus Very/Somewhat bad. An analogous question assessed the relationship with the father. For respondents without a mother or father due to death or absence, "Does not apply" was treated as a dichotomous control variable. Additionally, feelings of being an outsider in the family were gauged with, "When you were growing up, did you feel like an outsider in your family?" with Yes or No as response options. Experiences of abuse were measured by asking, "Were you ever physically or sexually abused when you were growing up?" with Yes or No responses.

Self-rated health Self-rated health during childhood was assessed by asking, "In general, how was your health when you were growing up?" with response options of Excellent, Very good, Good, Fair, or Poor.

Religious and spiritual predictors Religious service attendance at age 12 was measured with the question, "How often did YOU attend religious services or worship at a temple, mosque, shrine, church, or other religious building when YOU were around 12 years old?" Responses included At least once/week, One-to-three times/month, Less than once/month, or Never. Childhood religious tradition/affiliation included categories such as Christianity, Islam, Hinduism, Buddhism, Judaism, Sikhism, Baha'i, Jainism, Shinto, Taoism, Confucianism, Primal/Animist/Folk religion, Spiritism, African-Derived, some other religion, or no religion/atheist/agnostic, with precise categories varying by country.

Outcome variable

Belonging In assessing the sense of belonging across a diverse international sample, a single question was designed to gauge participants' perceived sense of belonging within their respective countries. Single item approaches are common practice in large-scale cross-national surveys. Participants were asked, "How would you describe your sense of belonging in your country?" and provided with a response scale ranging from 0 (Very weak) to 10 (Very strong). This question aimed to capture the subjective experience of belonging in a quantifiable manner, allowing for the aggregation of responses into a continuous variable for analysis. It was designed to provide a broad index of perceived belonging across diverse national contexts while maintaining feasibility and interpretability across languages and cultures and to minimize respondent burden in a large-scale survey. The mean score of these responses will serve as a primary indicator of the sense of belonging among the surveyed populations, facilitating cross-national comparisons and insights into the retrospectively reported childhood factors influencing sense of belonging.

Analysis

Descriptive statistics for the observed sample, weighted to be nationally representative within country, were estimated for each childhood demographic category. A weighted linear regression model with complex survey adjusted standard errors was fit within each country for belonging on all of the aforementioned childhood predictor variables simultaneously.

In the primary analyses, random effects meta-analyses of the regression coefficients[56,57] along with confidence intervals, lower and upper limits 95% prediction intervals, heterogeneity (τ), and I^2 for evidence concerning variation within a given demographic category across countries[58]. Forest plots of estimates are available in the online supplement. Religious affiliation/tradition and race/ethnicity were used within country as control variables, when available, but these coefficients themselves were not included in the meta-analyses since categories/responses varied by country.

All meta-analyses were conducted in R[59] using the metafor package[60]. Within each country, a global test of association of each childhood predictor variable group with outcome was conducted, and a pooled p-value[52] across countries reported concerning evidence for association within any country. Bonferroni corrected p-value thresholds are provided based on the number of childhood demographic variables[61,62]. For each childhood predictor, we calculated E-values to evaluate the sensitivity of results to unmeasured confounding. An E-value is the minimum strength of the association an unmeasured confounder must have with both the outcome and the predictor, above and beyond all measured covariates, for an unmeasured confounder to explain away an association[63]. As a supplementary analysis, population weighted meta-analyses of the regression coefficients were estimated. All analyses were pre-registered with COS prior to data access, with only slight subsequent modification in the regression analyses due to multicollinearity (data: https://doi.org/10.17605/OSF.IO/3JTZ8); all code to reproduce analyses are openly available in an online repository (code: https://doi.org/10.17605/OSF.IO/VBYPE)[50].

Missing data

Missing data on all variables was imputed using multivariate imputation by chained equations, and five imputed datasets were used[64–67]. To account for variation in the assessment of certain variables across countries (e.g., religious affiliation/tradition and race/ethnicity), the imputation process was conducted separately in each country. This within-country imputation approach ensured that the imputation models accurately reflected country-specific contexts and assessment methods. Sampling weights were included in the imputation models to account for specific-variable missingness that may have been related to probability of inclusion in the study.

Accounting for complex sampling design

The GFS used different sampling schemes across countries based on availability of existing panels and recruitment needs[52]. All analyses accounted for the complex survey design components by including weights, primary sampling units, and strata. Additional methodological detail, including accounting for the complex sampling design, is provided elsewhere[49].

Results

Descriptive results

Table 1 provides the distribution of descriptive statistics for the observed sample ($N = 202,898$). Most participants reported having very good relationships with their mothers (63%) and fathers (53%). Marital status of parents showed that 75% were married, while 8.7% were divorced. Financially, 41% of participants indicated they "got by," with 35% living comfortably. Abuse was reported by 14% of the sample. A feeling of being an outsider was reported by 14% of participants. Self-rated health during childhood was "excellent" for 33% and "very good" for 31%. Most participants were born in their country of residence (94%), and religious service attendance at age 12 varied, with 41% attending weekly. The age distribution spanned the entire adult lifespan, with gender nearly balanced (49% male, 51% female). Descriptive statistics (e.g., mean levels) of belonging are reported elsewhere[68,69].

Meta-analytic results

Table 2 shows the associations between childhood predictors and the outcome variable across the observed sample. A very good or somewhat good (compared to bad/somewhat bad) relationship with the mother (β = 0.30, 95% CI 0.22, 0.37) and father (β = 0.17, 95% CI 0.08, 0.27) were positively associated with the outcome. Divorced parents (vs. parents married) showed a slight negative association (β = − 0.08, 95% CI − 0.19, 0.02). Financial difficulties during childhood had a negative impact: those who found it very difficult (vs. got by) had a negative association (β = − 0.17, 95% CI − 0.27, − 0.08). Experiencing abuse (vs. No abuse) (β = − 0.27, 95% CI − 0.36, − 0.19) and feeling like an outsider (vs. Not being one) (β = − 0.29, 95% CI − 0.42, − 0.17) were strongly negatively associated. Excellent health (vs. good) during childhood had a strong positive association (β = 0.40, 95% CI 0.24, 0.57), as did very good health (β = 0.20, 95% CI 0.14, 0.27). Immigration status such as being born in another country (vs. born in this country) showed a negative association (β = − 0.25, 95% CI − 0.48, − 0.03). Regular religious service attendance at age 12 (vs. Never) showed a positive association, with weekly attendance (β = 0.29, 95% CI 0.17, 0.42). These results are consistent with supplementary meta-analytic results (Tables S23, S24) and forest plots (Figures S1 to S27).

The associations between childhood predictors and adult belonging are moderately robust to unmeasured confounding, as indicated by E-values (Table 3). Strong childhood relationships, particularly with mothers (E-value: 1.47) and fathers (E-value: 1.33), show moderate robustness to potential unmeasured confounding. For example, to explain away the association between good relationship with mother in childhood with adult belonging, an unmeasured confounder that was associated with both more positive maternal relationships and higher adult belonging with risk ratios of 1.47 each, above and beyond the measured covariates, could suffice but weaker joint confounder associations could not; to shift the 95% confidence interval to include the null, an unmeasured confounder that was associated with both more positive maternal relationships and higher adult belonging with risk ratios of 1.39 each, above and beyond the measured covariates, could suffice but weaker joint confounder associations could not. Those raised in divorced or single-parent families exhibit more sensitivity to confounding (E-values: 1.21 and 1.09). Childhood health, especially "Excellent" (E-value: 1.59), and weekly religious service attendance at age 12 (E-value: 1.47) are also associated with more moderate robust findings. In contrast, parental marital status, financial difficulties, and experiences of childhood abuse display varying degrees of sensitivity, with some associations being less stable against potential unmeasured confounders. Gender and age show moderate robustness, with older cohorts having higher E-values, indicating more stable associations. Overall, while many predictors are robust, several variables remain sensitive to unmeasured confounders, suggesting the potential for residual confounding in the results.

Country-specific analysis

Positive relationships with mothers were consistently strong positive predictors of adult belonging in almost all countries studied, except for Indonesia, Egypt, and Turkey which had slightly negative estimates though with confidence intervals overlapping with 0. In Argentina, a very good relationship with the mother was a positive predictor (β = 0.65, 95% CI 0.19, 1.11). Similarly, in Brazil, a very good relationship with the mother (β = 0.55, 95% CI 0.28, 0.82) and father (β = 0.37, 95% CI 0.19, 0.55) were strong positive predictors. The relationship with father was one of the strongest predictors of belonging in Nigeria (β = 0.47, 95% CI − 0.21, 1.15). Regular attendance at religious services during childhood, especially weekly attendance, was a strong positive predictor in most but not all countries. The strongest positive associations between weekly religious attendance and belonging were observed for Spain (β = 0.72, 95% CI 0.49, 0.96), followed by the Philippines (β = 0.69, 95% CI 0.17, 1.22), Brazil (β = 0.64, 95% CI 0.41, 0.86), and Poland (β = 0.62, 95% CI 0.35, 0.88). However, weekly attendance at religious services (at least 1/week) showed some evidence for a negative association with adult belonging in Sweden (β = − 0.14, 95% CI − 0.30, 0.02) and also in South Africa (β = − 0.56, 95% CI − 1.15, 0.04).

Experiencing abuse during childhood was consistently a strong negative predictor of adult belonging in almost all countries. In Turkey, the impact of abuse was particularly strong (β = − 1.25, 95% CI − 1.97, − 0.54). South Africa, Philippines, and the United Kingdom also showed negative associations for abuse (respectively, β = − 0.63, 95% CI − 1.00, − 0.26; β = − 0.60, 95% CI − 0.96, − 0.24; β = − 0.47, 95% CI − 0.76, − 0.19), as did Australia (β = − 0.40, 95% CI − 0.62, − 0.18) and Egypt (β = − 0.43, 95% CI − 0.77, − 0.08). Feeling like an outsider during childhood was another consistent negative predictor. In Brazil, this was a negative predictor (β = − 0.69, 95% CI − 0.89, − 0.49), and similarly, in the United States (β = − 0.88, 95% CI − 1.06, − 0.69), Australia (β = − 0.78, 95% CI − 1.06, − 0.50), and Brazil (β = − 0.69, 95% CI − 0.89, − 0.49), feeling like an outsider was strongly negatively associated with adult belonging. This negative impact was also seen in Spain (β = − 0.52, 95% CI − 0.79, − 0.26).

Excellent health during childhood was a substantial positive predictor of adult belonging in most countries. For example, in Hong Kong, excellent health was a strong positive predictor (β = 1.70, 95% CI 1.38, 2.02). This

Characteristic	*N* = 202,898[a]
Relationship with mother	
Very good	127,836 (63%)
Somewhat good	52,439 (26%)
Somewhat bad	11,060 (5.5%)
Very bad	4642 (2.3%)
Does not apply	5965 (2.9%)
Missing	956 (0.5%)
Relationship with father	
Very good	107,742 (53%)
Somewhat good	55,714 (27%)
Somewhat bad	15,807 (7.8%)
Very bad	8278 (4.1%)
Does not apply	13,985 (6.9%)
Missing	1372 (0.7%)
Parent marital status	
Yes, married	152,001 (75%)
No, divorced	17,726 (8.7%)
Never married	15,534 (7.7%)
No, one or both of them had died	7794 (3.8%)
Missing	9843 (4.9%)
Subjective financial status of family growing up	
Lived comfortably	70,861 (35%)
Got by	82,905 (41%)
Found it difficult	35,852 (18%)
Found it very difficult	12,606 (6.2%)
Missing	674 (0.3%)
Abuse	
Yes	29,139 (14%)
No	167,279 (82%)
Missing	6479 (3.2%)
Outsider growing up	
Yes	28,732 (14%)
No	170,577 (84%)
Missing	3589 (1.8%)
Self-rated health growing up	
Excellent	67,121 (33%)
Very good	63,086 (31%)
Good	47,378 (23%)
Fair	19,877 (9.8%)
Poor	4906 (2.4%)
Missing	530 (0.3%)
Immigration status	
Born in this country	190,998 (94%)
Born in another country	9791 (4.8%)
Missing	2110 (1.0%)
Age 12 religious service attendance	
At least 1/week	83,237 (41%)
1–3/month	33,308 (16%)
< 1/month	36,928 (18%)
Never	47,445 (23%)
Missing	1980 (1.0%)
Age group	
1998–2005; current age: 18–24	27,007 (13%)
1993–1998; age: 25–29	20,700 (10%)
1983–1993; age: 30–39	40,256 (20%)
1973–1983; age 40–49	34,464 (17%)
Continued	

Characteristic	*N* = 202,898[a]
1963–1973; age 50–59	31,793 (16%)
1953–1963; age 60–69	27,763 (14%)
1943 or earlier; age 80+	4119 (2.0%)
1943–1953; age 70–79	16,776 (8.3%)
Missing	20 (< 0.1%)
Gender	
Male	98,411 (49%)
Female	103,488 (51%)
Other	602 (0.3%)
Missing	397 (0.2%)
Country	
Argentina	6724 (3.3%)
Australia	3844 (1.9%)
Brazil	13,204 (6.5%)
Egypt	4729 (2.3%)
Germany	9506 (4.7%)
India	12,765 (6.3%)
Indonesia	6992 (3.4%)
Israel	3669 (1.8%)
Japan	20,543 (10%)
Kenya	11,389 (5.6%)
Mexico	5776 (2.8%)
Nigeria	6827 (3.4%)
Philippines	5292 (2.6%)
Poland	10,389 (5.1%)
South Africa	2651 (1.3%)
Spain	6290 (3.1%)
Tanzania	9075 (4.5%)
Turkey	1473 (0.7%)
United Kingdom	5368 (2.6%)
United States	38,312 (19%)
Sweden	15,068 (7.4%)
Hong Kong	3012 (1.5%)

Table 1. Nationally representative childhood descriptive statistics of the observed sample. [a]n (%)

pattern was also observed in other countries (e.g., Japan, Germany, Sweden), suggesting the universal importance of good health during childhood for positive adult outcomes. However, in Spain, poor self-rated health (vs. good health) growing up was positively associated with belonging ($\beta = 0.54$, 95% CI 0.00, 1.08).

While the study found fairly consistent predictors, the strength of these associations varied by country, highlighting the role of country-level cultural and socio-economic contexts. Moderate to high heterogeneity was observed in the impact of specific childhood predictors across countries. For example, self-rated health during childhood showed considerable variability, particularly for excellent health ($\tau = 0.37$, $I^2 = 92.9\%$). Parental marital status also exhibited variability, with single, never-married parents showing substantial variability ($\tau = 0.42$, $I^2 = 88.8\%$). Economic status during childhood varied as well, with "lived comfortably" ($\tau = 0.14$, $I^2 = 75.8\%$).

Discussion

The findings from this study provide valuable insights into the childhood predictors of adult belonging across different national contexts, highlighting both universal and country-specific predictors of belonging in adulthood. These results show the complexity of the pathways leading to adult sense of belonging and highlight the importance of retrospectively reported early life experiences. We found that positive relationships with parents, particularly mothers, emerged as consistent predictors of a sense of belonging in adulthood in almost all countries studied, except for Indonesia, Egypt, and Turkey, which had slightly negative estimates with confidence intervals overlapping with 0. The meta-analysis further revealed consistent positive associations between adult belonging and excellent childhood health and regular religious service attendance, while abuse, financial difficulties, and feeling like an outsider were negatively associated. However, the country-specific analysis showed variability in some of these associations. Weekly religious service attendance generally predicted higher belonging, though this was not consistent across all countries. For instance, in Sweden, regular attendance was associated with

Estimated proportion of effects by threshold									
Variable	**Category**	**Est**	**95% CI**	**SE**	**< − 0.10**	**>0.10**	**Heterogeneity (τ)**	**I^2**	**Global p-value**
Relationship with mother	(Ref: Very bad/somewhat bad)								< 0.001**
	Very good/somewhat good	0.30	(0.22,0.37)	0.04	0.00	1.00	0.07	14.9	
Relationship with father	(Ref: Very bad/somewhat bad)								< 0.001**
	Very good/somewhat good	0.17	(0.08,0.27)	0.05	0.14	0.77	0.17	64.7	
Parent marital status	(Ref: Parents married)								< 0.001**
	No, divorced	− 0.08	(− 0.19,0.02)	0.05	0.45	0.18	0.18	61.1	
	Single, never married	0.02	(− 0.18,0.22)	0.10	0.27	0.27	0.42	88.8	
	No, one or both of them had died	− 0.01	(− 0.14,0.11)	0.06	0.32	0.27	0.21	54.6	
Subjective financial status of family growing up	(Ref: Got by)								< 0.001**
	Lived comfortably	0.10	(0.03,0.17)	0.04	0.09	0.59	0.14	75.8	
	Found it difficult	− 0.02	(− 0.09,0.05)	0.04	0.18	0.14	0.12	55.1	
	Found it very difficult	− 0.17	(− 0.27,− 0.08)	0.05	0.68	0.00	0.11	23.9	
Abuse	(Ref: No)								< 0.001**
	Yes	− 0.27	(− 0.36,− 0.19)	0.04	0.86	0.00	0.15	61.5	
Outsider growing up	(Ref: No)								< 0.001**
	Yes	− 0.29	(− 0.42,− 0.17)	0.06	0.73	0.00	0.25	79.9	
Self-rated health growing up	(Ref: Good)								< 0.001**
	Excellent	0.40	(0.24,0.57)	0.08	0.00	0.82	0.37	92.9	
	Very good	0.20	(0.14,0.27)	0.03	0.00	0.82	0.11	56.8	
	Fair	− 0.20	(− 0.32,− 0.09)	0.06	0.77	0.14	0.20	70.4	
	Poor	− 0.22	(− 0.40,− 0.04)	0.09	0.68	0.18	0.30	55.7	
Immigration status	(Ref: Born in this country)								< 0.001**
	Born in another country	− 0.25	(− 0.48,− 0.03)	0.11	0.59	0.27	0.44	84.7	
Age 12 religious service attendance	(Ref: Never)								< 0.001**
	At least 1/week	0.29	(0.17,0.42)	0.06	0.09	0.82	0.24	73.7	
	1–3/month	0.24	(0.12,0.37)	0.06	0.09	0.68	0.24	75.3	
	< 1/month	0.21	(0.13,0.29)	0.04	0.00	0.86	0.11	49.8	
Year of birth	(Ref: 1998–2005; age 18–24)								< 0.001**
	1993–1998; age 25–29	− 0.05	(− 0.10,0.01)	0.03	0.00	0.00	< .01‡	< 0.1‡	
	1983–1993; age 30–39	0.03	(− 0.08,0.13)	0.05	0.32	0.32	0.21	75.9	
	1973–1983; age 40–49	0.16	(0.01,0.30)	0.08	0.14	0.50	0.32	86.6	
	1963–1973; age 50–59	0.31	(0.12,0.50)	0.10	0.14	0.73	0.42	90.3	
	1953–1963; age 60–69	0.44	(0.18,0.70)	0.13	0.09	0.68	0.59	93.2	
	1943–1953; age 70–79	0.54	(0.27,0.81)	0.14	0.09	0.86	0.57	89.7	
	1943 or earlier; age 80+	0.71	(0.26,1.15)	0.23	0.18	0.73	0.99	93.2	
Gender	(Ref: Male)								< 0.001**
	Female	0.12	(0.04,0.20)	0.04	0.09	0.50	0.17	86.9	
	Other	− 0.28	(− 0.90,0.35)	0.32	0.67	0.28	1.18	86.5	

Table 2. Random effects meta-analysis of regression of belonging on childhood predictors. *$p < .05$; **$p < .004$ (Bonferroni corrected threshold); ‡estimate of heterogeneity is likely unstable, please see our online supplement forest plots for more detail on heterogeneity of effects.

lower belonging, indicating a reversal of the usual positive association. These variations highlight the role of local cultural and socio-economic contexts influencing the strength and direction of these associations.

The forest plots further provide a detailed view of the associations between parent-child relationships and adult belonging across various countries. The relationship with the mother generally shows a strong positive association in most countries, with Argentina, Brazil, and Spain standing out with particularly high effect sizes. However, in countries like Egypt and Turkey, the association is negative, suggesting that in these contexts, other factors may complicate or diminish the protective effects of parental relationships. In contrast, the relationship with the father also shows positive associations in many countries, but with some level of variability. For example, in Nigeria and Poland, the father's relationship is a strong positive predictor of belonging in adulthood, while in Israel, India, Tanzania, and the Philippines, the association is weaker or negative. This variability highlights the differential effects of paternal relationships across different national contexts. This finding aligns with Bowlby's[23] attachment theory, which posits that secure early experiences with caregivers (e.g., a mother or father) form a foundation for future social relationships that influence sense of belonging[24,25,27]. In countries such as Turkey and Egypt with negative associations, this may reflect cultural differences in the roles and expectations of maternal

Variable	Category	Evalue	Evalue.limit
Relationship with mother	(Ref: Very bad/somewhat bad)		
	Very good/somewhat good	1.47	1.39
Relationship with father	(Ref: Very bad/somewhat bad)		
	Very good/somewhat good	1.33	1.20
Parent marital status	(Ref: Parents married)		
	No, divorced	1.21	1.00
	Single, never married	1.09	1.00
	No, one or both of them had died	1.07	1.00
Subjective financial status of family growing up	(Ref: Got by)		
	Lived comfortably	1.23	1.11
	Found it difficult	1.09	1.00
	Found it very difficult	1.33	1.20
Abuse	(Ref: No)		
	Yes	1.45	1.35
Outsider growing up	(Ref: No)		
	Yes	1.47	1.33
Self-rated health growing up	(Ref: Good)		
	Excellent	1.59	1.40
	Very good	1.37	1.29
	Fair	1.37	1.22
	Poor	1.39	1.14
Immigration status	(Ref: Born in this country)		
	Born in another country	1.42	1.11
Age 12 religious service attendance	(Ref: Never)		
	At least 1/week	1.47	1.33
	1–3/month	1.41	1.26
	< 1/month	1.37	1.28
Year of birth	(Ref: 1998–2005; age 18–24)		
	1993–1998; age 25–29	1.15	1.00
	1983–1993; age 30–39	1.11	1.00
	1973–1983; age 40–49	1.31	1.05
	1963–1973; age 50–59	1.48	1.26
	1953–1963; age 60–69	1.63	1.34
	1943 or earlier; age 80+	1.92	1.43
	1943–1953; age 70–79	1.74	1.45
Gender	(Ref: Male)		
	Female	1.26	1.13
	Other	1.45	1.00

Table 3. Sensitivity of meta-analyzed childhood predictors to unmeasured confounding.

figures, or it could indicate other underlying societal factors, such as gender norms or economic stressors, that might complicate or weaken the protective effects of parental bonds.

Experiencing abuse during childhood was a strong negative predictor of adult belonging across various countries. The especially substantial negative effects of abuse in Turkey, South Africa and the Philippines indicate that adverse childhood experiences can lead to long-term psychological issues[37,38] including difficulties in forming secure social connections which are instrumental for a sense of belonging[39]. The negative impact of childhood abuse was strongest in Turkey, suggesting that societal attitudes towards abuse might potentially play a role in influencing these outcomes[3]. Similarly, feeling like an outsider during childhood consistently predicted lower belonging in adulthood, as seen in the United States and Australia. This feeling of exclusion might hinder the development of social connections and a sense of community, which can lead to weaker attachment and identification with the broader society later in life[39,36]. This aligns with previous research[35,39,36] suggesting that social exclusion and marginalization during formative years can hinder the development of a secure sense of community and self-worth[39,45].

Women compared to men generally report higher levels of belonging (strongest in Sweden and Australia compared to India where being a woman predicted lower levels of belonging), likely due to gendered socialization processes that emphasize relational ties and community involvement for women[70]. The positive association between belonging and older age groups, particularly those born before 1963, suggests generational differences in social cohesion and community values[71]. Older cohorts may have experienced stronger community ties

and more stable social structures partly due to post-war rebuilding efforts, contributing to a sustained sense of belonging in later life. Experiencing financial difficulties during childhood was negatively associated with adult belonging, highlighting the long-term impact of economic hardship on social integration. Economic strain can limit access to resources necessary for social participation and contribute to social exclusion or stigma[72]. The stress associated with financial difficulties may potentially impair the development of secure attachments and social skills, crucial for building social connections.

Retrospectively reported excellent health during childhood was a considerable positive predictor of adult belonging in several countries, suggesting that good physical health in early life is necessary for developing a strong sense of belonging. The strongest associations were observed in developed countries like Hong Kong, Japan, Sweden, and Germany, which may reflect not only the benefits of robust healthcare systems in these nations but also the psychological and social benefits associated with maintaining good health[17]. Research has shown that access to quality healthcare and early-life health interventions can lead to better psychosocial outcomes, including stronger social ties and a greater sense of community in adulthood[73].

Regular attendance at religious services during childhood (at age 12) consistently predicted a higher sense of belonging in adulthood, particularly in countries like Spain, Philippines, and Brazil. In these contexts, frequent religious participation likely provides a strong community and shared belief system that may foster a sense of identity and social support. This corroborates with religion-belonging research[34,44], which highlights how religious involvement can create a collective sense of identity essential for belonging. However, the negative association observed in Sweden (and to a lesser extent in South Africa), may suggest that in some contexts, religious participation might create barriers to belonging. This could reflect the discouragement of certain groups, lifestyles, or activities within religious institutions, potentially leading to social tensions and exclusion rather than inclusion within broader societal contexts.

Limitations and future research

Despite the strengths of this study, several limitations should be noted. First, the cross-sectional design of the data restricts the ability to draw causal inferences, and the reliance on retrospectively reported childhood predictors creates a 'synthetic' longitudinal design, which, while informative, still carries the potential for recall bias. Future longitudinal studies would be better suited to disentangle the causal relationships between childhood predictors and adult belonging, and current efforts are underway to collect subsequent waves of data. Second, while the study boasts a diverse sample from 22 countries, the reliance on a single-item measure to retrospectively measure belonging sacrifices the depth and breadth of construct coverage. Future research should aim to explore specific cultural mechanisms and factors that contribute to a sense of belonging in greater detail using more comprehensive and culturally sensitive methodologies. Third, the use of self-reported measures for both childhood experiences and adult belonging introduces potential biases, which for the childhood experiences are also retrospective, including recall and social desirability biases, which could affect the accuracy of the findings. However, for recall bias to completely explain away the observed associations would require that the effect of adult belonging on biasing retrospective assessments of the childhood predictors would essentially have to be at least as strong as the observed associations themselves[74,75], and some of these were quite substantial. Incorporating multiple data sources, such as parental reports or objective health records, could strengthen the validity of future results. Last, current adult circumstances were not included in the present models to maintain the focus on childhood predictors and avoid potential bias introduced by adjusting for variables that may occur between childhood experiences and adult belonging. While this decision strengthens the internal consistency of the study, it limits our understanding into how current and continuing life circumstances interact with early childhood experiences. Future longitudinal waves of the Global Flourishing Study will enable a more detailed investigation into how childhood factors interact with current and future adult circumstances going forward and this will be a focus for future research and will be addressed in the second wave.

Implications for informing interventions and practice

Our findings have important implications which may inform interventions, practices, and policy to enhance a sense of belonging. For example, programs aimed at strengthening family relationships and providing support for children experiencing abuse or social exclusion could be particularly effective. However, it is important to acknowledge that the direction and strength of associations varied across countries. In Nigeria, where father–child relationships were among the strongest predictors of adult belonging, parenting programs that promote paternal engagement may be particularly beneficial. In Brazil and Argentina, strong associations between parent–child relationships and adult belonging could also point to the potential value of parenting interventions. In contrast, weaker or reversed associations in countries such as Egypt and Turkey show a need for applying caution over universal interventions or practices that do not account for cultural sensitivities or an understanding of cross-cultural social norms, particularly around familial dynamics. Our findings on the positive association between childhood religious service attendance and adult belonging suggest that regular community-based activities and gatherings have the potential to play an important role in fostering a sense of belonging. However, while religious service attendance during childhood was associated with higher belonging in countries like Spain, Brazil, and the Philippines, the reverse pattern in Sweden, and the absence of a positive association in South Africa, suggests that any community-based initiative would need to be tailored to local needs and values. Further, while the study did not examine whether religious attendance or other community-based activities mitigate the effects of adverse childhood experiences, this remains an important area for future research. In settings such as South Africa, where childhood abuse was also strongly negatively associated with belonging, community-based interventions may require careful approaches[11]. Taken together, interventions, policy, and practices should therefore closely align with context. Last, given that childhood health was strongly associated with higher adult belonging in several countries, including Japan, Germany, and Sweden, with the

strongest association observed in Hong Kong, there is value in maintaining and advocating for equitable access to healthcare services as a part of broader global efforts to support belonging in adulthood.

Conclusion

In summary, we highlight the potential role of early life experiences in shaping an individual's sense of belonging in adulthood. Across all countries, several consistent patterns emerged. Positive relationships with parents, particularly mothers, were positive predictors of adult outcomes. Weekly attendance at religious services during childhood was another consistent positive predictor across countries, though some countries (e.g., South Africa, Sweden, and Kenya) had variations of negative relationships. On the other hand, childhood abuse and feeling like an outsider consistently had negative associations with adult outcomes. However, the strength of these associations varied by country. For instance, the relationship with the mother had the highest positive association in countries like Argentina and Brazil, while the negative impact of abuse was strongest in places like Turkey and South Africa. Feeling like an outsider had a uniformly negative impact in almost all countries (except for in Poland, Nigeria and India with negligible positive associations), but the degree varied, being most pronounced in countries such as the United States and Australia. This variability highlights the importance of cultural and socio-economic factors in shaping these relationships. Countries with strong social support systems, such as Sweden and Germany, showed more moderate associations compared to countries with less developed systems. Understanding these country-specific nuances is important for designing effective stratified interventions that foster a sense of belonging in a population.

Data availability

The methodological framework and objectives of our study have been outlined in a pre-registration document available on the Open Science Framework (OSF). This document, which can be accessed at https://osf.io/9mj7y, details our investigative approach into the exploration of how childhood predictors associate with belonging in adulthood across 22 countries. Additionally, the datasets analysed during the current study are available in the pre-registration of the Global Flourishing Study on OSF (see here: https://osf.io/3jtz8). This procedural step is important for maintaining the data's integrity and confidentiality while ensuring our research upholds the highest standards of scientific inquiry and ethical considerations.

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Declarations

Competing interests

The authors declare no competing interests.

Ethical approval and consent to participate

This project was ruled EXEMPT by the Baylor University Institutional Review Board (#1841317-2). All personally identifiable information (PII) was removed from the data used in this study by Gallup Inc. IRB approval for all data collection activities was obtained by Gallup Inc. The methodology of the GFS can be assessed at https://osf.io/5k2jv.

Additional information

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