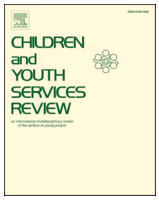
Children and Youth Services Review 185 (2026) 108914

Contents lists available at ScienceDirect

Children and Youth Services Review

journal homepage: www.elsevier.com/locate/childyouth



The development of social values in childhood and early adolescence: a systematic review

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ARTICLE INFO

Keywords:
Human values
Childhood
Adolescence
Value priorities
Value structure
Value development

ABSTRACT

Values are central to human social life. As conceptualised in Schwartz's (1992) Theory of Basic Human Values, they are core to a person's self-concept and drive individual actions towards both personal development and social transformation. Although, cross-cultural research with adults shows a consensus regarding value structure and priorities, research with young populations is still very recent. In this paper, we systematically review studies on the development of basic human values in childhood and early adolescence (5 to 14 years old) and synthesise evidence regarding the fit of children's and adolescents' values to the theoretical structure, the development of value hierarchy and importance from childhood to early adolescence. The review was conducted according to the PRISMA guidelines and a final set of 45 papers was included. The evidence provides extensive support for Schwartz's theoretical model in childhood and early adolescence. A highly differentiated value structure was found in most studies from several countries, providing great support for the universal nature of values. Moreover, the identified patterns of value change support the motivational compatibilities and oppositions of the model and suggest that values become more stable with age.

1. Introduction

Values are core to individuals' self-concept and guide individual action, attitudes, and goals towards both personal development and social transformation (Bardi & Schwartz, 2003). At an individual level, values also predict a wide range of attitudes, beliefs and behaviours, such as attitudes towards immigration (Araújo et al. 2020; Boer & Fischer, 2013; Davidov et al., 2020; Ramos et al., 2016) and prosocial behaviour (Schwartz, 2010). At a societal level, values govern how individuals relate to each other and ultimately shape the organisation of societies (Inglehart & Baker, 2000; Schwartz, 1999; Schwartz, 2008).

Most developmental research on values concern adults and adolescents. However, recent works have remarked that children have a meaningful understanding of values from a very early age and that middle childhood is a crucial period for value maturation (Knafo-Noam et al., 2024; Twito-Weingarten & Knafo-Noam, 2022). These works provided important theoretical insights, but a systematic review of empirical studies with children and early adolescents is still lacking. The present review builds upon these contributions by applying systematic methodology to map and synthesise evidence regarding what happens to values' structure and priorities within childhood and early adolescence.

1.1. Theoretical background: values and Schwartz's (1992) model

The present review builds on one of the most influential frameworks in this field, the Theory of Basic Human Values (TBHV; Schwartz, 1992; Schwartz et al., 2012). According to this theory, basic values are defined as desirable goals that guide behaviour and motivate action (Schwartz et al., 2012). As life goals that transcend specific situations, values are presumed to be relatively consistent across situations and stable over time (Bardi & Goodwin, 2011). However, some changes in value priorities are expected during the life course as part of an adaptation

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https://doi.org/10.1016/j.childyouth.2026.108914
Received 30 January 2024; Received in revised form 13 November 2025; Accepted 26 March 2026
Available online 1 April 2026

process to significant events and changing circumstances (Schwartz & Bardi, 2001). Schwartz (1992) identified ten basic values, organized into four higher-order categories along two bipolar dimensions of conflicting values (Fig. 1): (1) self-transcendence (universalism, benevolence) vs. self-enhancement (power, achievement) and (2) openness to change (stimulation, self-direction, hedonism) vs. conservation (tradition, conformity, security). These values are structured in a circular continuum of motivational compatibilities and conflicts, which is expected to also underlie developmental change. The most compatible values are located in adjacent positions and those in greatest conflict in opposite positions (Schwartz, 1994; Schwartz et al., 2012). For example, universalism and benevolence are located next to each other and express mutually compatible motivations, such as sharing or concern for the welfare of others. In contrast, power and achievement values, located in the opposite position, express the conflicting motivations of being more successful than others and dominating them.

Cross-cultural research has consistently supported the proposed value structure across diverse cultural contexts, and has revealed a broad consensus regarding the hierarchy of value priorities. In this hierarchy, benevolence, universalism, and self-direction are typically ranked highest, whereas power and stimulation tend to occupy the lowest positions (Schwartz, 1994). Nevertheless, important questions remain about whether this structure and hierarchy apply equally to younger populations, such as children and early adolescents (Schwartz, 1994; Schwartz et al., 2012).

1.2. Value development in childhood and adolescence

Research on value development has grown in importance in recent decades. However, the bulk of these research has primarily focused on adults and, more recently, on adolescents (Döring et al., 2010; Twito-Weingarten & Knafo-Noam, 2022). Research on the values of younger populations, namely children, is even more recent and has been fostered by the development of age-appropriate measures. The study of values during childhood is particularly important as it is presumably a period of higher plasticity and malleability, being sensitive to developmental and environmental driven influences. By early adulthood, values are rather stable over time (Bilsky & Schwartz, 1994; Vecchione et al., 2016), although changes are expected as part of an adaptation process to cultural influences, socialization, developmental tasks, role requirements, and personal experiences (Bardi & Goodwin, 2011; Goodwin et al., 2012; Knafo & Schwartz, 2003; Schwartz et al., 2012). The recent study of Knafo-Noam et al. (2024) adds to these findings the importance of considering middle childhood as a crucial period for the maturation of children's value systems, which become increasingly coherent, abstract, consistent, stable, and related to behaviour. Moreover, the authors point out that this maturation process reflects key cognitive and social advances, as children develop a more integrated understanding of their values and how they influence their actions and perceptions of the world.

Two central questions, both directly linked to the aims of the present review as noted in 'the present study' section, have guided empirical research on children's values: 1) Whether Schwartz's circular motivational structure can be identified in childhood, and how developmental changes affect the congruence of value compatibilities and conflicts; 2) How value hierarchy and priorities emerge and change from middle childhood to early adolescence, and what role is played by variables such as gender, parental education, or cultural background.

Answers to these questions ascertain the validity of Schwartz's theory for the developmental period of childhood and early adolescence. On the second question in particular, longitudinal studies have found crucial findings by examining the degree of stability (rank-order stability) and change (mean-level change) in values at the individual and group-level. Knowledge on the early developmental course of basic and higher-order values can be compared with trends of personality traits as identity develops. Normative patterns identified during this developmental period can be compared with those found in later periods of the life course (Vecchione et al., 2020).

The time span from middle childhood to early adolescence is marked by significant changes that ultimately lead to the development of an individual's sense of identity (Eccles, 1999), where values assume a central role. Developmental changes in cognitive, socio-emotional abilities, as well as in moral reasoning may influence age-related changes in value structure and priorities (Daniel et al., 2020).

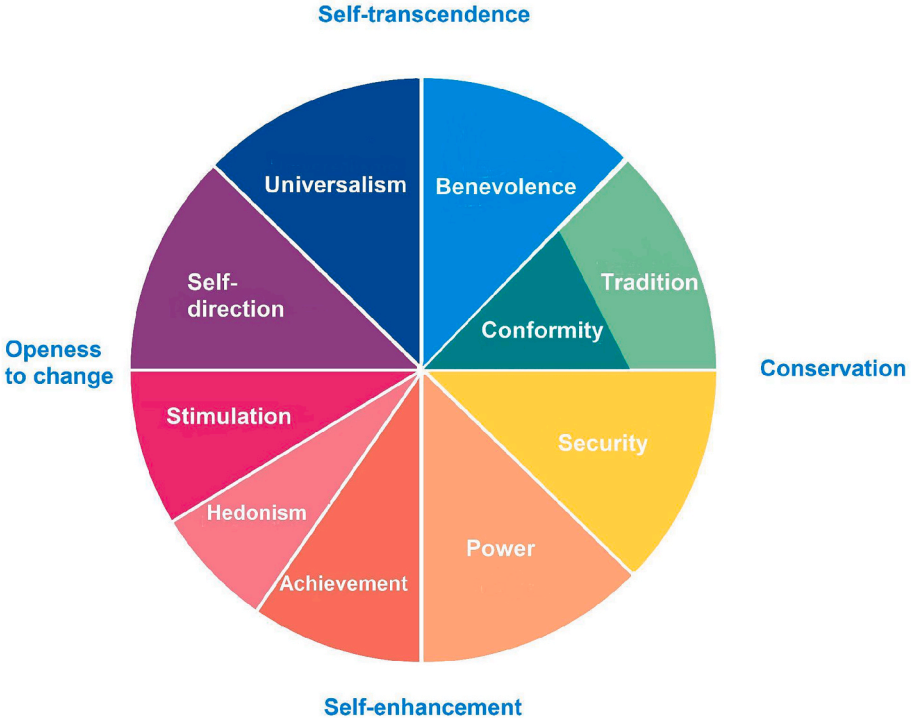

Fig. 1. Schwartz's theory of basic human values.

Cognitive control and self-regulation are two abilities that improve significantly during childhood and may contribute to the fulfillment of values by facilitating the pursuit of goals. Other goal-directed abilities, such as activation control—a component of effortful control that enables maintaining motivation in the presence of conflicting desires—continue to develop through late adolescence and early adulthood (Atherton et al., 2020), suggesting that value development extends into this period. Findings from studies on early adulthood support this perspective (Vecchione et al., 2016).

Value development during middle childhood and early adolescence is also likely to be fostered by perspective-taking, a social cognitive ability that also contributes to moral reasoning development (Lane et al., 2010). As moral reasoning and perspective-taking abilities become more sophisticated, values related to self-transcendence tend to increase in importance. Twito-Weingarten and Knafo-Noam (2022) highlight in their review that value development is central to understanding morality. Values directly linked to morality, such as self-transcendence, generally increase in importance across the lifespan, while other values—including self-direction and power—also influence moral thinking and behaviour. These findings suggest that incorporating a values perspective into research can enhance our understanding of moral development and provide new avenues for investigating how children navigate moral issues over time.

Socially oriented values, such as self-transcendence and conservation, are also promoted through value socialization processes, as educators often aim to transmit values that minimize social conflict (Daniel et al., 2020; Kandler et al., 2016; Thornberg & Oğuz, 2013). Middle childhood is marked by increased responsiveness to social norms and greater conformity (House et al., 2019), alongside growing self-confidence in one's abilities. The rise in academic demands may further heighten adolescents' focus on competitiveness and individual achievement (Carlo et al., 2007). As children gain confidence and autonomy, they are motivated to explore new roles, beliefs, and experiences, coinciding with increased reward sensitivity from late childhood through mid-adolescence (Schreuders et al., 2018). These developmental changes likely contribute to a heightened importance of self-enhancement and openness-to-change values starting in early adolescence. Moreover, the emotions experienced and the social consequences of value-related behaviours may influence changes in the motivational priorities within the circular value system proposed by Schwartz (Döring et al., 2015).

In summary, the developmental transitions during middle childhood and early adolescence facilitate value development and enhance the predictive role of values in shaping attitudes and behaviour. These changes result from maturational improvements in goal-directed self-control and the growing autonomy to make choices. Certain developmental tasks and value-shaping experiences may drive changes in values, though the extent of these changes depends on individual factors (e.g., emotions during and after value-expressive behaviours, degree of effortful control) and social-cultural factors (e.g., contextual opportunities, culturally contingent rewards and punishments) (Carlo et al., 2007; Daniel et al., 2014). Consistent with the social investment principle, value changes are most likely when their expression supports developmental task completion and adaptation to environmental demands (Bardi & Goodwin, 2011; Roberts et al., 2008; Vecchione et al., 2020).

1.3. The present study

Using Schwartz's theory as a guiding framework, this review aims to systematise the existing evidence on 1) the fit of children's and early adolescents' values to the circular structure of the TBHV; 2) the development of value hierarchy and priorities from middle childhood to early adolescence; and, 3) the measures used to assess values in children and early adolescents.

To the best of our knowledge, this is the first systematic review of studies on basic human values in school-age children and early adolescents (5 to 14 years old). The focus on these stages could make a significant contribution to the knowledge on early value development, as it is a period characterized by identity development and formation where values may assume a central role. Also, during this period, important socialization sources come into play (e.g. teachers, school principals, peers) that likely influence value development. This synthesis and critical review of the literature may provide important insights not only into the field of values, but also developmental and cross-cultural research.

2. Methods

2.1. Protocol registration

The systematic review protocol was recorded in PROSPERO (International Prospective Register of Ongoing Systematic Reviews; available in S1 File and in https://www.crd.york.ac.uk/PROSPERO/display_record.php?RecordID=161697). This systematic review was carried out according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009).

2.2. Eligibility criteria

We included empirical studies of values in childhood and early adolescence from 5 to 14 years of age. Studies with younger and/or older participants in their samples, were only included if separate analyses were performed for the target age group (5 to 14 years old). Studies using parents' or teachers' reports of children's or adolescents' values were excluded. Furthermore, studies had to employ Schwartz's theory (Schwartz, 1992) and assess at least two human values identified in the theory.

Regarding study methodology, we used the following inclusion criteria: (1) use of quantitative methodology; and (2) following a cross-sectional, longitudinal, correlational or experimental design. Intervention studies were included only if they reported data on value structure or priorities prior to the intervention, or if the intervention setting was used merely as a context for observing natural value development. Post-intervention effects attributable to the intervention itself were not considered. Regarding to longitudinal studies that assessed values at multiple time points. These were not analyzed wave by wave but synthesized to address developmental questions. Specifically, we considered both the evolution of the value structure (e.g., differentiation and coherence with the TBHV) and the development of value priorities over time (rank-order stability and mean-level change).

We excluded non-original studies (theoretical articles, literature reviews, systematic reviews and *meta*-analyses), case studies, conference abstracts, student dissertations and editorials. Articles carrying out secondary data analyses (i.e., studies re-analyzing data previously collected by other researchers to address new research questions, or drawing on existing data from sources such as governmental databases, published papers, or prior studies) were also excluded. However, studies conducted within the same research project and based on the same dataset were retained when they reported distinct analyses or addressed different aspects of value development. We included papers published in English, Portuguese, Spanish and French, as the two reviewers were proficient in these languages.

2.3. Search strategy

A systematic search of the literature was undertaken using three electronic databases: PsychInfo, Web of Science and Scopus, and limited to papers published between January 1992 and September 1, 2023. One of the authors (E.A.) conducted the database searches, with access to the databases obtained from the University of Lisbon libraries.

Two groups of search terms were used: (1) Values (values OR "social values" OR "human values" OR "basic values") and (2) Population (child

OR adolescence OR youth OR "early age"). The same search terms were used for the three databases, with some minor changes due to differences in their wildcards. For example, it was not possible to search only by abstracts in Web of Science. Therefore, the wildcard used was TOPIC, which includes title, abstract and keywords. The search strategy used for each database is reported in Table 1.

We also decided to limit the search to the following scientific areas: psychology, sociology and social sciences, with variations in their designation between different databases: Scopus (psychology and social sciences), Web of Science (psychology developmental, psychology social and sociology), PsychInfo (educational psychology, social processes and social issues, social psychology, psychosocial and personality development, developmental psychology, and general psychology). Additionally, we restricted our search to articles published in peer-reviewed journals, excluding other sources, such as book chapters and letters.

2.4. Study selection

Two independent reviewers (E.A. and M.C.) screened all the studies by title and abstract. After this first screening, the reviewers compared the two lists of the selected studies and agreed on the inclusion and exclusion of studies based on the eligibility criteria defined previously. The inter-rater reliability at this stage was calculated with Cohen's Kappa (k = 0.90).

The second screening consisted of a full-text analysis of all selected studies independently by each reviewer, followed by a discussion of those on which there was no agreement. The inter-rater reliability estimated at this stage was k = 0.95. When it was not possible to resolve disagreements through the discussion between the reviewers, a third reviewer was consulted (R.B.R.). We used Zotero to record decisions and register the selected studies.

2.5. Data extraction

The selected studies were randomly divided and assigned to two independent reviewers for data extraction. Data from 25% of the articles (randomly selected) were extracted by both reviewers (E.A. and I.T.). The level of agreement between reviewers on the extracted data was estimated (inter-rater reliability k = 0.95). The following data was extracted from each study:

- Characteristics of the publication: authorship, year of publication, country, and journal name.
- Characteristics of the samples: size; gender and age distribution; ethnicity or nationality; other sociodemographic information of the participants reported in the study (e.g. living context, type of school, religiosity and, parental educational background).
- Characteristics of the study design: type of study (e.g. cross-sectional or longitudinal), aspects of values investigated (e.g. structure, priorities), number of values measured (e.g. 4 higher-order values or 10 basic values), instruments used for value measurement and main results. In the supplementary material (S1 Text), we have included the standardised spreadsheet used to extract the data from all studies.

Table 1
Search terms.

PsychInfo	AB (values OR "social values" OR "human values" OR "basic values") *AND* AB (child* OR adolescence OR youth OR "early age") *AND* KW (values) *OR* TI (values)
Web of Science	TOPIC: (values OR "social values" OR "human values" OR "basic values") *AND* TOPIC: (child* OR adolescence OR youth OR "early age") *AND* TOPIC: (values) *OR* TITLE: (values)
Scopus	(ABS ((values OR "social values" OR "human values" OR "basic values") AND (child* OR adolescence OR youth OR "early age")) AND (KEY (values) OR TITLE (values))

Finally, the protocol determined that the authors of the studies with unreported or missing data would be contacted. Ultimately, this was unnecessary given that all the required data was accessible from the articles.

2.6. Quality assessment

We assessed the methodological validity of the selected articles using a standardised quality appraisal tool: the Mixed Method Appraisal Tool (MMAT, Hong et al., 2018). To minimise bias before inclusion in the review, we followed four steps. Firstly, we answered two screening questions that asked if the study was empirical and suitable for appraisal by the MMAT tool. Secondly, we chose the appropriate category to appraise the study. In the present case, we only used the quantitative set criteria for non-randomised and quantitative-descriptive studies. Thirdly, we rated the criteria of the chosen category following the corresponding indicators. Finally, we reported a detailed analysis of each criterion. No studies were excluded on scientific quality grounds. The criteria to assess methodological validity were accuracy of sampling strategy, sample representativeness, appropriateness of measurement tools, statistical analysis, and degree of non-response bias. The results of the quality assessment analysis are reported in section 3.3.

The quality assessment was performed following the same previously mentioned data extraction procedure, taking into account the specific MMAT requirements for the appraisal process. The same two independent reviewers carried out the process, with 25% of the articles reviewed by both. The inter-rater reliability estimated was k = 0.90. As in the screening process, disagreements were resolved through discussion between the reviewers and a third reviewer (R.B.R.), whenever necessary.

2.7. Data synthesis

Considering the diversity and heterogeneity of the studies, we decided to undertake a narrative synthesis, following the Centre for Reviews and Dissemination (Centre for Reviews and Dissemination CRD, 2009) and Popay et al. (2006) guidelines. Following this synthesis approach, we summarised the findings focusing on our review questions: 1) the fit of children's values to the circular structure of the TBHV; 2) the development of value hierarchy and importance from childhood to early adolescence and, 3) the instruments used to assess children's and early adolescents' values.

3. Results

3.1. Systematic literature search

We retrieved 7912 records from PsychInfo, Web of Science and Scopus. After removing duplicates (n = 412), we retained 7500 records. The first screening by title and abstract resulted in 193 full-text articles, of which we excluded 149 for not meeting the eligibility criteria. These were papers in which the participants' age was outside the range under analysis (n = 67); another theory that was not Schwartz's TBHV was used or did not assess at least two values of Schwartz's TBHV (n = 37); the findings were not presented by age (n = 24); the articles were non-empirical (n = 9); were published in other languages or the full-text was not available (n = 4); did not assessed the structure of values or value priorities (n = 8).

Fig. 2 presents the flow diagram of the screening process according to PRISMA.

3.2. Studies and samples characteristics

The searches identified 45 articles published between 1992 and 2023 that met the inclusion criteria. The majority of papers (84.5%) were published after 2013, with 19.2% between 2019 and 2023, consistent with an increased attention to the topic.

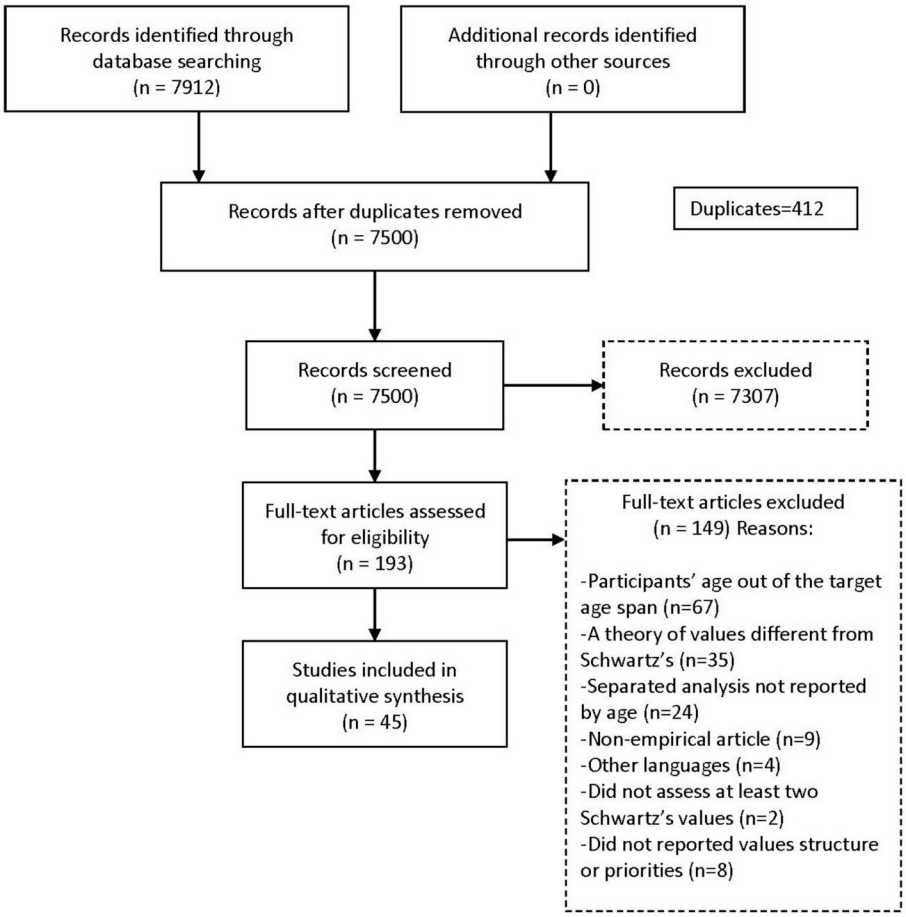

Fig. 2. PRISMA flow diagram of the screening and study inclusion process.

From the point of view of the research approach, 84.0% of the studies were cross-sectional and 16% longitudinal. The large majority were correlational studies (92.7%), and only a few were descriptive (2.4%) or experimental/randomised controlled trials (4.9%).

Data pertains predominantly to Europe (40.4%), followed by Asia (25.5%, mostly from Israel and Turkey), Australasia (8.5%), South America (6.8%) and Africa (2.1%). The remaining 17% of the studies reported data from multiple countries (e.g. the United States, New Zealand, Chile, Italy, France, Poland, and Portugal).

Sample sizes ranged from 39 to 49,401 participants (M = 2,027.32; SD = 7,222.04; $Q1$ = 296.5, $Q2$ = 575, $Q3$ = 943.5). Age and gender were the variables most often used to describe participants' socio-demographic characteristics. Regarding age, most of the articles (61.7%) covered a wide range (from 5 to 15 years old) including both children and adolescents (early and middle), 17% focused exclusively on early and middle adolescence (10 to 15 years old) and a very few (4.3%) on childhood (5 to 9 years old). As to gender, 53.2% of the studies included more female participants (with 50.3% to 57.5%), 29.8% included more male participants (with 50.2% to 58%), and 8.5% were strictly balanced samples. Several studies also reported participants' cultural background, parents' educational level, type of school (public vs. private), and the children and adolescents' area of residence. Participants' socio-cultural characteristics, such as nationality, ethnicity or immigration background were reported in 85.1% of the studies. The majority of studies (46.8%) were conducted in the German and Israeli contexts. Of those, 36.2% reported either participants' nationality or ethnicity: Germany (Döring, 2010; Döring et al., 2010; Kandler et al., 2016; Knafo & Spinath, 2011) and Israel (Benish-Weisman, 2015; Benish-Weisman et al., 2020; Benish-Weisman & McDonald 2015; Berson & Oreg, 2016; Daniel & Benish-Weisman, 2019; Uzefvosky et al., 2016). The remaining 10.6% focused on immigration background: Turkish immigrants, Former Soviet Union immigrants and Arab Israelis (Daniel et al., 2012a; Döring et al., 2018; Hadjar et al., 2012; Schiefer et al., 2010). Parents' educational level was reported in 9.7% of the studies: some including both parents' educational level (Döring et al., 2018; Hadjar et al., 2012; Tulviste et al., 2018); while others only the mothers' (Uzefvosky et al., 2016). The majority of children's parents included in these studies had a medium–high educational level (e.g. secondary, post-compulsory education or tertiary education degree). Given that most studies were carried out in schools, several (29%) reported the type of school, with 19.2% referring to state schools, 8.5% to both state and private schools, and 2.1% to private schools alone. Participants' area of residence was reported for 31.8% of the studies, with 18.2% including participants from urban areas and 13.6% from urban and rural areas. Only one study focused exclusively on children or adolescents from rural contexts (2.3%).

Regarding the values measured in the studies, the vast majority (85.1%) assessed all values, of that 42.6% focused on the 4 higher-order values and 42.6% included the 10 basic values described in Schwartz's theory; a small proportion (10.6%) assessed 8 of the 10 values and 4.3% assessed only 2 values. For further information about the studies' characteristics, see Table 2.

Our review also identified five instruments used to measure values in children and adolescents. Most studies (42.6%) used the Portrait Value Questionnaire (PVQ) Schwartz, 2003; Schwartz et al., 2001). The PVQ originally comprises 40 items (Schwartz et al., 2001) and was developed to measure values in adult populations. In the studies included in our review, the PVQ was typically applied in its short 21-item version (PVQ-21) and mainly to children older than ten (Bilsky et al., 2013; Döring, 2010), supporting the suitability of the PVQ for children and adolescents

Table 2
Characteristics of the studies, samples, and overall findings regarding value structure and priorities.

Authors	Year of publication	Country	Age range of participants	Gender[a]	Study Design[b]	Instrument[c]	Values Measured	Sample/ Subsample used for structure test	Value structure found for the 4 HOV[i]	Value structure found for the 10 basic values [j]	Most important value [k]	Least important value [l]
1. Abramson et al.	2018	Israel	5–12	M (56.0%)	Cross, Exp	PBVS-C	All	5 y 6–7 y 8–9 y 10–12 y	Yes	Yes No Yes No	BE	PO
2. Aquilar et al.	2018	Italy	14–16	M (56.8%)	Long	PVQ	All		–	–	Open	SEnh
3. Benish-Weisman & McDonald	2015	Israel	NR	F (51.2%)	Long	PVQ	All		–	–	Open*	SEnh
4. Benish-Weisman	2015	Israel	NR	F (53.9%)	Cross	PVQ	All		–	–	Open	SEnh
5. Benish-Weisman, Daniel, & McDonald	2020	Israel	11–18	F (54.3%)	Cross	PVQ	All		–	–	Open	SEnh
6. Benish-Weisman, et al.	2019	Australia	6–12	F (51.0%)	Cross	AVI-r	All	6–7 y 8–9 y 10–12 y	Yes	No No Yes	STran	SEnh
7. Benish-Weisman et al.	2022	Israel	NR	M	Long	PVQ5X	All	–	Yes	–	Con	STran
8. Berson & Oreg	2016	Israel	NR	F (50.3%)	Long	PBVS-C, PVQ	All	Grades 1 to 9	Yes	–	–	–
9. Bilsky et al.	2013	Germany, Portugal, Chile, France	7–12	NR	Cross	PBVS-C PBVS-C PVQ PVQ PVQ	All	>= 10 y < 10 y >=10 y < 10 y 10–12 y 10–12 y 10–12 y	Yes	No No No No No No No	STran*	SEnh
10. Bubeck & Bilsky	2004	Germany	10–17	M,F	Cross	PVQ	All	10–17 y	Yes	No	–	–
11. Cieciuch, et al.	2016	Poland	7–16	M (52.0%)	Long	PBVS-C	All	7–16 y	Yes	Yes	STran	SEnh
12. Cieciuch, Döring et al.	2013a	Poland, Germany	10–13	NR	Cross	PBVS-C PBVS-C PVQ PVQ	All	10–11 y 11–13 y 10–11 y 11–13 y	Yes	No No No No	–	–
13. Cieciuch, Harasimczuk	2013b	Poland	8–12	M (54.7%)	Cross	PBVS-C	All	8–12 y	Yes	No	STran	SEnh

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Table 2 (*continued*)

Authors	Year of publication	Country	Age range of participants	Gender[a]	Study Design[b]	Instrument[c]	Values Measured	Sample/ Subsample used for structure test	Value structure found for the 4 HOV[i]	Value structure found for the 10 basic values [j]	Most important value [k]	Least important value [l]
et al.												
14. Collins, et al.	2017	Australia	5–12	F (53%)	Cross	AVI	All	5–12 y	Yes	No	BE UN	PO
15. Collins et al.	2022	Australia	6–12	M,F	Cross	AVI-r	All	–	Yes	Yes	STran/ BE	SEnh/PO
16. Daniel & Benish-Weisman	2019	Israel	NR	F (55.4%)	Long	PVQ	All	14–16 y Jewish 14–16 y Arabs	Yes	Yes	HE	PO
17. Daniel, Schiefer, et al.	2012a	Israel, Germany	NR	NR	Cross	VICQ	AC, BE, CO, SD		–	–	Con*	–
18. Daniel et al.	2013	Israel	NR	F (53.8%)	Long	SVS	All		Yes	–	–	–
19. Daniel et al.	2020	Australia	5–12	F (51%)	Cross Long	AVI	All		–	–	STran	SEnh
20. Daniel	2016	Germany	NR	NR	Cross	PVQ	SD, CO		–	–	Open	–
21. Daniel, Schiefer et al.	2012b	Israel, Germany	NR	NR	Cross[h]	VICQ	AC, BE, CO, SD	14 y FSU immigrants 13 y Turkish immigrants 15 y FSU immigrants 15 y Arabs	Yes	– – No No	–	–
22. Daniel et al.	2023a	Australia, Bulgaria, France, Germany, Israel, Italy, New Zealand, Poland, Turkey, Uganda, Great Britain, United States	6–12	F (51%)	Long	PBVS-C	All		Yes	Yes	–	–
23. Döring et al.	2010	Germany	5–12	NR	Cross	PVQ	All	8–11 y	Yes	Yes	STran	SEnh
24. Döring et al.	2015	Germany, Italy, Poland, Bulgaria, United States, New Zealand	7–11	NR	Cross	PBVS-C	All	8–12 years	Yes	Yes	STran	SEnh
25. Döring et al.	2017	Chile, Germany	6–11	NR	Cross	PBVS-C PVQ	All	7–11 years	Yes	No	STran*	SEnh
26. Döring	2010	Germany	8–11	F (50.8%)	Cross	PBVS-C	All	6–11 years	Yes	No	STran	SEnh
27. Döring, Kärtner et al.	2018	Germany	6–11	F (50.4%)	Cross	PBVS-C	All		–	–	STran	SEnh
28. Elizarov et al.	2023	Israel	NR	M (52%)	Cross	AVI	All		Yes	Yes	STran	Open

(*continued on next page*)

Table 2 (*continued*)

Authors	Year of publication	Country	Age range of participants	Gender[a]	Study Design[b]	Instrument[c]	Values Measured	Sample/ Subsample used for structure test	Value structure found for the 4 HOV[i]	Value structure found for the 10 basic values [j]	Most important value [k]	Least important value [l]
29. Gross & Dewaele	2018	Italy	8–12	M (51.5%)	Cross	PBVS-C	All	8–12 years	Yes	–	STran	SEnh
30. Kapikiran & Gündoğan	2018	Turkey	7–12	F (53.0%)	Cross	PVQ	All, except UN	7–11 years	Yes	–	HE	PO
31. Kandler, et al.	2016	Germany	7–11	M,F	Cross	PBVS-C	All	7–12 years	Yes	No	Open	SEnh
32. Knafo & Spinath	2011	Germany	7–11	M (50.2%)	Cross	PVQ	ST, HE, AC, PO, SE, CO, BE, SD		Yes	–	–	PO
33. Lee, et al.	2017	Australia	5–12	M (52.0%)	Cross	AVI	All	5–12 years	Yes	No	BE	PO
34. Łubianka & Filipiak	2020	Poland	12–13	M (58%)	Cross	PBVS-C	All		–	–	HE	CO
35. Roazzi et al.	2016	Brazil	8–12	M,F	Cross	PBVS-C	All	8–12 years	Yes	No	–	–
36. Roazzi et al.	2018	Brazil	8–12	M (50.5%)	Cross	PBVS-C	All	8–12 years	Yes	–	–	–
37. Schwartz, Melech, et al.	2001	Uganda	13–14	F (100%)	Cross	PVQ	All	13–14 years	Yes	No	–	–
38. Tamm & Tulviste	2015	Estonia	NR	F (55.0%)	Cross	PVQ	All		–	–	BE	PO
39. Tamm, et al.	2021	Estonia	NR	F (51%)	Cross	PVQ	All		–	–	Open	SEnh
40. Tamm & Tulviste	2022	Estonia	NR	M,F	Cross	PBVS-C	All	Pre-school	Yes		STran	Co
								Elementary school			STran	SEnh
41. Tulviste & Tamm	2014	Estonia	NR	F (57.5%)	Long	PVQ	All		–	–	HE	PO
42. Tulviste, et al.	2018	Estonia	7 to 14	F (51.9%)	Cross	PBVS-C + PVQ	All	7–14 years	Yes	No	STran	SEnh
43. Uzefovsky et al.	2016	Israel	7	NR	Cross	PBVS-C	All	7 years	Yes	Yes	–	–
44. Vecchione et al.	2016	Italy	10—12	M (55.2%)	Long	PVQ	All		–	–	Stran*	SEnh
45. Vecchione, et al.	2020	Italy	10–12	M (57.0%)	Long	PVQ	All		–	–	HE	PO

Note.

ST-Stimulation, HE-Hedonism, AC-Achievement, PO-Power, SE-Security, CO-Conformity, TR-Tradition, BE-Benevolence, SD-Self Direction; UN-Universalism; SEnh-Self-Enhancement, Open-Openness-to-change, STran-Self-Transcendence, Con-Conservation. The most and least important values were reported in terms of relative importance (when the study reports these findings for the entire sample or finds the same pattern among the majority of the groups). (*) The value ranked first or last in the majority of the samples. NR-Not reported, NA-Not applicable.

[a] Gender (F—Female majority; M—Male majority; M,F—50/50);

[b] Study design (Cross—Cross-sectional design; Long—Longitudinal design; Exp—Experimental design). NR—Not reported for the total sample or not reported.

[c] Instrument-Instrument used for measure children and adolescents' values; PBVS-C-Picture Based Value Survey; PVQ-Portrait Values Questionnaire; AVI-Animated Values Instrument; AVI-r-Animated Values Instrument revised; VICQ-Values in Context Questionnaire; SVS-Schwartz Value Survey.

(Aquilar et al., 2018; Benish-Weisman & McDonald, 2015; Daniel et al., 2020; Daniel & Benish-Weisman, 2019; Kandler et al., 2016; Tulviste et al., 2018; Tulviste & Tamm, 2014). PVQ items correspond to short descriptions of the goals and aspirations of hypothetical individuals, with participants being asked to rate the degree of similarity they find between themselves and the portraits, on a scale ranging from 1 (not like me at all) to 6 (very much like me). In addition to the PVQ-21, some studies used modified versions of the PVQ to better suit their research aims or target populations. These included the PVQ-25 (Daniel, 2016), the PVQ-40 (Daniel & Benish-Weisman, 2019), the PVQ-29 (Bubeck & Bilsky, 2004), and the PVQ-5X, which presents items in the first person rather than the third, as used in Benish-Weisman et al. (2022) and Berson & Oreg (2016).

The second most used measure (27.7%) was the Picture-Based Value Survey for Children (PBVS-C). This measure was developed by Döring et al. (2010) to allow the reliability of value measurement among younger children (e.g. primary school-aged children), given that the PVQ was found to be highly demanding regarding reading ability, vocabulary level, and abstract thinking. This 20-item self-report instrument was initially tested in a sample of 8 to 12-year-old German children (Döring et al., 2010), but it has proven suitable for children as young as 5 (Abramson et al., 2018) and from different countries (e.g. Poland, Bulgaria, Israel, Turkey and Estonia). In the PBVS-C, each of the 10 Schwartz basic values is depicted in two pictures in which a leading character is performing a value-relevant action. The instrument employs a Q-sort response format, wherein children first choose two pictures representing a situation that they consider very important for themselves, followed by four pictures that are considered important, eight pictures of mean importance, four pictures that are unimportant, and, finally, two pictures that are rated as not at all important. Some studies administered the PBVS-C following a slightly modified procedure, instead of showing the 20 pictures at once, they are shown in two sets of 10 (e.g. Abramson et al., 2018; Uzefovsky et al., 2016). Uniquely, the study of Berson & Oreg (2016) used 14 selected pictures that would correspond with the 14 PVQ they used for the older schoolchildren (six pictures to measure conservation, four pictures to measure openness to change, and two pictures each to measure self-transcendence and self-enhancement). Structural validity of PBVS-C has been demonstrated in samples of children and adolescents (Cieciuch et al., 2016; Döring et al., 2010) showing that it mirrors the circular structure of Schwartz's model.

Our review also identified a more recent instrument, the Animated Values Instrument (AVI) and its revised version (AVI-r) (Collins et al., 2017), which was used in 8.5% of the articles. The AVI is a computer-based measure that includes short clips portraying visual, auditory and written elements depicting a value-expressive behaviour. The animated scenarios are accompanied by a statement (auditory and written) expressing a desirable motivational goal and are presented in a series of small subsets, based on best-worst scaling (BWS) (Collins et al., 2017). This instrument allows assessing values with children as young as 5 (the youngest age at which values have been assessed), as it has been able to overcome the challenges associated with children's lack of reading ability and the abstractness of some concepts. As to the structural validity, studies applying this instrument (Benish-Weisman et al., 2019; Collins et al., 2017; Lee et al., 2017) have demonstrated that the intra-individual structure of children's values is compatible with Schwartz's model.

Another 6.4% of the articles used the Values in Context Questionnaire (VICQ) (Daniel et al., 2012a,b), an adaptation to life contexts of the Schwartz Value Survey (SVS). The VICQ was used mostly with adolescents and to assess the importance of personal values regarding the contexts under which individuals live or perform particular social roles (e.g. as a family member, as a student, as a citizen of a certain country or as part of an ethnic group) (Daniel, 2016; Daniel et al., 2012a,b). The 44 item SVS version (Schwartz, 2003) was also used in one study with Israeli adolescents. SVS was developed to study values in adult populations and its use was discouraged with children due to the complex

wording of the items, as was the case with the PVQ (Collins et al., 2017; Döring, 2010; Lee et al., 2017). Finally, 10.6% of the articles reported studies using a combination of different measures depending on children's age, namely the PBVS-C for children and the PVQ for adolescents.

3.3. Quality assessment of included studies

The methodological quality of the 45 included studies was appraised using the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018). Overall, most studies clearly stated their research questions and collected sufficient data to address them. The majority also employed appropriate measurement tools to operationalise Schwartz's values, and statistical analyses were generally adequate.

However, some recurrent methodological limitations were identified. First, representativeness of samples was often limited: many studies relied on convenience or school-based samples, which restricts generalisability. Second, control of potential confounders was inconsistently reported, and several studies did not explicitly account for background variables (e.g., socio-economic status, parental education) that may influence value priorities. Third, complete outcome data was not always available, particularly in longitudinal designs where attrition rates were sometimes high or not reported in sufficient detail. Finally, although almost all studies reported ethical approval or informed consent procedures, a small number lacked explicit statements.

Taken together, the MMAT appraisal indicates that while the current body of research provides valuable insights into the development of values in childhood and adolescence, future studies would benefit from: (1) greater use of representative sampling strategies; (2) clearer reporting of attrition and missing data; and (3) systematic control of potential confounders.

3.4. The fit of children's and early adolescents' values to the circular structure of the TBHV

Concerning the structure of values 69% of the studies tested the fit of the data to Schwartz's theoretical model. Although the four higher-order dimensions were identifiable in all samples, a perfect fit to the theoretical structure at the level of the ten basic values was found in less than half (43.5%) of the studies that tested the full model.

Examining in detail the alignment of the arrangement of the 10 basic values to the circular arrangement of the values presented in Fig. 1 can provide an overall assessment of the fit between data and theory (Schwartz, 2003). Table 4 presents the number and percentage of values that emerged in the postulated value region ("correct location") and in other region(s) ("misplaced") of the circular arrangement, in 45 samples/ sub-samples (in some studies structural analysis were presented separately according to age and/or country; in these cases, we considered these groups as sub-samples) of the included studies representing 18 countries. Considering the heterogeneity of the number of items in the structural analyses (range 8–30), for each sample/ sub-sample, only one misplacement per value was counted. For example, if two tradition items were misplaced in the same region (e. g., universalism), only one deviation was counted (from tradition to universalism). However, if the two tradition items were misplaced in different regions (e. g. universalism and power), then both deviations were counted.

A detailed analysis of misplaced items showed systematic deviations (73.9% to 95.5%) of misplaced items of individual values between adjacent values, specifically between universalism and benevolence (self-transcendence values), power and achievement (self-enhancement values), and security and conformity (conservation values). These deviations were found in samples/ sub-samples from 8 to 10 countries. Most countries showed two (44.4%) or three (33.3%) of these deviations, independently of the instrument used. At the country level, one of these deviations was notably more frequent in Germany and Poland, where the deviation of power to achievement was observed in 7 (58.3%) and 4 (100%) of the samples/ sub-samples, respectively.

Table 3
Summary of main findings.

Authors	Summary of main findings	Effect sizes
1. Abramson et al. 2018	↑ Age: ↑ Open, ↑ STran	0.21 [a] to 0.29 [a]
	♀: ↑ STran ♂: ↑SEnh	-0.45[c]
	(Costly) Sharing behaviours: + STran vs SEnh, −SEnh	0.35 [a]
2. Aquilar et al. 2018	♀: ↑ STran ♂: ↑ SEnh	0.15 to 0.18 [a] −0.24 to −0.17 [a]
	Antisocial behaviour (cross-lagged relations): − STran − Con	−0.06 to –0.11 [d] −0.07 to –0.13 [d]
3. Benish-Weisman & McDonald 2015	Antisocial behaviour (cross-lagged relations): − STran − Con	−0.09 to 0.16[f]
4. Benish-Weisman 2015	Aggression: + SEnh, − STran	0.09[f] −0.07 to -0.08[f]
5. Benish-Weisman, Daniel, & McDonald 2020	↑ Age: ↑ Open, ↑ SEnh, ↓ ConSTran (ns)	−0.18 to 0.14 [a]
	♀: ↑ STran, ↑ Open ♂: ↑SEnh	−0.22 to 0.17[b]
	Self-esteem: Quadratic effects for STran Con Open SEnh	 −0.26 to −0.07 [d] NR
	↑ Self-esteem: ↑ congruence with peers STran and SEnh values	
6. Benish-Weisman et al. 2019	Prosocial behaviour: + STran, −SEnh, –Con	−0.17 to 0.13 [a]
7. Benish-Weisman et al. 2022	♀: ↑ STran ♂: ↑SEnh	−0.36 to 0.22[c]
8. Berson & Oreg 2016	Principals' values were either directly or indirectly related to children's values	0.13 to 0.30[f]
9. Bilsky et al. 2013	Structural equivalence of the value structures from 3 countries	0.91 to 0.99 [a]
	♀: ↑ STran, ↑ Con ♂: ↑ SEnh, ↑ Open	NR
10. Bubeck & Bilsky 2004	No relation between age and number of basic values	NA
	Age and sex differences in value structure configuration	
11. Cieciuch, et al. 2016	No relation between age and number of basic values	NA
	↑ Age: ↑rank-order stability of values	0.13 to 0.31 [a] NR
	↑ Age: ↑ Open ↓ Cons	

(continued on next page)

Table 3 (*continued*)

Authors	Summary of main findings	Effect sizes
	↑↓ STran ↓↑ SEnh	
12. Cieciuch et al., 2013a	Structural equivalence of PBVS-C and PVQ	NA
13. Cieciuch et al., 2013b	Structure with 4 distinct and 6 intermixed basic values	NA
14. Collins, et al. 2017	↑ Age: ↑ consistency in value choice↑ good fit to the model structure (at the individual level) Structure with 6 distinct and 6 intermixed basic values	NA
15. Collins et al., 2022	Several domain-specific competencies of self-esteem were positively associated with STran and Open and negatively associated with SEnh	0.08 to 0.18 [a] −0.21 to −0.10 [a] −0.09 to 0.20 [a]
16. Daniel & Benish-Weisman 2019	↑ Age: ↑values' internal coherence ↑rank-order stability of values ↑ PO, AC, SD ↓ CO, TR, SE, BE Value change follows the model structure (at the individual level)	NA 0.29 to 0.34 [a] NA
17. Daniel et al., 2012a	Immigration background ↑ Value differentiation	0.11 to 0.15[c]
18. Daniel et al. 2013	Exposure to adverse conditions:+ Anxiety-based values (PO, SE, TR) − Anxiety-free values (BE, UN, SD, ST, HE), CO, AC (quadratic)	−1.23 to 0.65 [d]
19. Daniel et al. 2020	↑ Age: ↑ STrans ↓ SEnh ♀: ↑ STrans, ↑ Con ♂: ↑SEnh	−0.36 to 0.33 [a] −0.16 to 0.27 [a]
20. Daniel 2016	Avoidance of ambiguity: + CO, − SD	−0.22 to 0.21[f]
21. Daniel et al., 2022	Immigration background ↑ Value differentiation Country differences in value consistency across contexts among those with migrant background	NA −0.37 to 0.63 [a]
22. Daniel et al., 2022	U-shape curvilinear relationship between age and intraindividual value structure fit to the TBHV value stucture	0.003 [d] −0.02 to 0.01 [d]
23. Döring et al. 2010	Structure with 10 distinct basic values	NA
24. Döring et al. 2015	↑ Age: ↑ Open, ↓ SEnh, ↓ Con,STran (ns) Value priorities varied across cultures ♀: ↑ STrans, ↑ Con ♂: ↑ SEnh	0.01 to 0.02[b] 0.04[b] 0.20 to 0.73[c]
25. Döring et al. 2017	↑ Educational goals of STran: ↑ Parent-child value similarity	0.13[f]
26. Döring 2010	Structure with 10 distinct basic values	NA
27. Döring, Kärtner et al. 2018	↑ Age: ↑ Open, ↓ SEnh,Con (ns) ,STran	−0.23 to 0.29 [a]

Table 3 (*continued*)

Authors	Summary of main findings	Effect sizes
	(ns)	
	Families with immigration background: ↑ Con, ↑ SEnh ↓ Open, ↓ STran	0.02[b] 0.02 to 0.06[b]
	♀: ↑ STran, ↑ Con ♂: ↑ SEnh, ↑ Open	0.02 to 0.08[b]
28. Elizarov et al. 2023	♀: ↑ STran ♂: ↑SEnh STran and Cons acted as protective and risk factors, respectively, for the effects of teacher-child conflict on maladaptative behaviours	0.22 [a] −0.21 [a] −0.28 to -0.20[f]
29. Gross & Dewaele 2018	Immigration background ↑ Value differentiation Incipient bilinguals: ↑ Open Functional bilinguals and multilinguals: ↑ CO	0.03[b] NR
30. Kapikiran & Gündoğan, 2018	Structure with 9 distinct value types	NA
31. Kandler et al. 2016	↑ Age: ↑ SD, ↓ CO ♀: ↑ BE, ↑ CO, ↑ STran ♂: ↑ PO, ↑ AC, ↑ SEnh Genetic traits explained 1/3 of individual differences Non-shared environments explained 1/2 of individual differences	−0.10 to 0.09[f] −0.26 to 0.15[f] 0.00 to 0.62 [e] 0.31 to 0.77 [e]
32. Knafo & Spinath 2011	♀: ↑ BE ♂: ↑ PO, ↑ AC Genetic traits explained 1/3 of individual differences Non-shared environments explained 1/2 of individual differences	−0.75 to 0.39[c] 0.34 to 0.49 [e] 0.51 to 0.66 [e]
33. Lee et al. 2017	↑ Age ↑ Value differentiation Boys and girls presented similar value structures, but different value priorities	NA NA
34. Łubianka & Filipiak 2020	↑ TR ↑ Conscientiousness ↑ BE ↑ Agreeableness	0.22 to 0.37[f]
35. Roazzi et al. 2016	Differences in value structure configuration between public and private schools	NA
36. Roazzi et al. 2018	Children's values more strongly related with perceived maternal values than with self-reported maternal values	−0.44 to 0.38 [a]
37. Schwartz, Melech, et al. 2001	Structure with 5 distinct and 5 intermixed basic values	NA
38. Tamm & Tulviste 2015	♀: + BE ♂: + PO, + CO ↑ Aggression: ↓ CO	0.02 to 0.07[b] −1.11 [d]
39. Tamm, et al. 2021	↑ Psychological adjustment: ↑ STran, ↓ SEnh,↓ Cons, Open (mixed evidence)	−0.94 to 0.91 [a]
40. Tamm & Tulviste 2022	School children displayed higher value differentiation than pre-school children ↑ Age: ↑ Open, ↓ SEnh	0.47 to 0.74[c]

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Table 3 (*continued*)

Authors	Summary of main findings	Effect sizes
41. Tulviste & Tamm 2014	Moderate to high stability of values	0.40 to 0.51 [a]
	Gender and cultural differences in value importance	0.01 to 0.03 [b]
42. Tulviste et al. 2018	↑ Age: ↑ Open, ↓ Con	−0.05 to 0.07 [d]
	↓ Parental educational level: ↓ Open, ↓ Senh, ↑ STran	−0.44 to 0.44 [d]
	Rural schools: − Open, + SEnh	−0.21 to 0.22 [d]
	♀: + STran ♂: + SEnh	0.29 to 0.43 [d]
43. Uzefovsky et al. 2016	↑ Maternal education level: ↑ Open	0.02 [f]
	Religious families: + Con Non-religious families: +Open	NR
	Genetic traits explained 1/3 of individual differences	0 to 0.33 [e]
	Non-shared environments explained 1/2 of individual differences	0.56 to 0.81 [e]
44. Vecchione et al. 2016	Values predicted value-expressive behaviours over time (cross-lagged relations)	0.15 to 0.36 [f]
. Vecchione, et al. 2020	↑ Age: ↑ SEnh, ↑ Open	0.16 to 0.30 [c]
	♀: + BE, + UN, + SE, + CO ♂: + PO, + AC	−0.41 to 0.33 [f]
	Moderate stability of values	0.39 to 0.77 [a]

Note. + —Positive correlation, − —Negative correlation, ns —non significant; ↑ —Increase, ↓ —Decrease;
[a] Correlation;
[b] Partial eta squared;
[c] Cohen's d;
[d] Unstandardized regression coefficients;
[e] Heritability estimates;
[f] Standardized regression coefficients; NR-Not reported, NA-Not applicable.

At the level of the 10 basic values, it is noteworthy that none of the misplaced items appeared in the opposite value region. At the higher-order level, only 3.4% of the total number of deviations were found in the opposite region (4 conservation items appeared in the openness to change region, and 3 openness to change items appeared in the conservation region).

For more detailed information about the findings of each study regarding value structures, see Tables 2 and 3.

Regarding the number of basic values identifiable during middle childhood and early adolescence, studies that examined all basic values found a wide range of distinct value regions (from four to ten). The evidence on the relationship between age and the level of differentiation in the structure of values (e.g. the number of basic values that emerge in a distinct region) over this developmental period is mixed. While some studies found an increased differentiation with age (Döring et al., 2017; Tamm & Tulviste, 2022; Tulviste et al., 2018), others found a fully differentiated structure already at age 5 (Abramson et al., 2018), and a stable level of differentiation throughout middle childhood and early adolescence, identifying 7 to 8 value regions (Bilsky et al., 2013; Cieciuch et al., 2016; Döring et al., 2015). However, the differentiation level found across samples in other studies varied considerably both within and between age groups (e.g. 6–7 years: 6 to 8 regions; 8–9 years: 8 to 10 regions; 10–12 years: 7 to 10; 13–14 years: 7 to 9). Despite of the heterogeneity, the highest level of value differentiation has been found between 8–9 and 10–12 years of age, which is consistent with a U-shape curvilinear relationship between age and value structure coherence with the TBHV with the peak at 9–10 years of age (Daniel et al., 2022). There is also some evidence that gender may moderate the effect of age in value differentiation. Within older age groups (e.g. 10–12 years), girls showed a higher level of differentiation than boys (Bubeck & Bilsky, 2004); whereas no gender differences were found among younger age groups (5 to 12-year-olds) (Lee et al., 2017). Interestingly, a longitudinal study that examined the structure of value change over a three-year period starting at the age of 13, found a fully differentiated structure with 10 value regions that closely followed the theoretical structure (Daniel & Benish-Weisman, 2019). No gender differences were found in the patterns of change.

It should be noted, however, that some groups may experience a less coherent intra-individual value system due to their culture environment. Daniel et al. (2012b) observed that the structure of values varied across contexts (family, school, country of residence, and ethnic group) among adolescents from two minority groups in Germany, but not in Israel. Specifically, self-direction and conformity values in the ethnic context were located in the opposite value regions and were negatively correlated with the same values in the other contexts. These results highlight the relevance of the cultural environment to the coherence of the value structure.

In sum, the reviewed studies show that each value type is located in the expected region or in its adjacent regions in the vast majority of samples/ sub-samples (Tradition 80% to Universalism and Benevolence 100%). The systematic deviations from the theoretical model identified are between adjacent values and are mostly consistent across cultures. While some studies find an adult-like set of values before the age of 10, the level of differentiation of the basic values significantly varies between studies. Cultural factors may explain part of this variability, but their influence is mostly evidenced by specific deviations from the circular structure of values and inconsistencies in the value structure across contexts.

3.5. The development of value hierarchy and importance from middle childhood to early adolescence

3.5.1. Development of value hierarchy and importance

The development of value hierarchy and importance from middle childhood to early adolescence is one of the central questions of this review. Our analysis shows that 77.8% of the studies provide information regarding value hierarchy and/or priorities.

Regarding value hierarchy, self-enhancement frequently emerges as the least important higher-order value for both children and early adolescents. Regarding the most important higher-order values, the evidence was consistent, but the pattern varies with age. Specifically, for children (12 years and younger), self-transcendence emerged as the most important higher-order value in most studies (28 out of 34 samples/ sub-samples, 82.4%). In some studies, value priorities were presented separately according to age and/or country; in these cases, we considered these groups as sub-samples). This evidence reports to 11 countries: Australia, Bulgaria, Estonia, France, Germany, Italy, Israel, Poland, Portugal, Switzerland, and the United States. In four samples/ sub-samples (11.2%), openness to change was the most important higher-order value: Chile (Bilsky et al., 2013), New Zealand (Döring et al., 2015), Poland (Cieciuch et al., 2016), and Turkey (Kapikiran & Gündoğan, 2018), and in one sample (2.9%), conservation ranked first in a sample from Italy (Vecchione et al., 2016). In most samples/ sub-samples, openness to change and conservation appeared as a medium preference (in second or third place).

Table 4
Location of each value type in Schwartz's value structure in 45 samples/ sub-samples from 18 countries.

	Correct location		Location and frequency of misplaced items					
			In an adjacent region		In the theorized higher-order region, but not in an adjacent region		In non-adjacent regions and in other higher-order values	
	n (%)	Country	n (%)	Country	n (%)	Country	n (%)	Country
Universalism[a]	31 (68.89)	AU, BG[b], CH, DE, EE, FR, IL, IT[b], NZ[b], PL, PT, TR[c], UAb, UKb, US[b]	14 (31.11)	AU, BR, CL, DE, EE, FR, IL, UG	NA	–	1 (2.22)	UG
Benevolence[a]	23 (51.11)	AU, BG[b], DE, FR, IL, IT[b], NZ[b], PL, TR[c], US[b]	22 (48.89)	AU, BGb, BR, CL, CH, DE, EE, FR, IL, ITb, NZb, PL, PT, TRc, UAb, UG, UKb, USb	NA	–	1 (2.22)	CH
Tradition[a]	18 (40.00)	AU, BR, CL, DE, EE, IL, PL, PT, TR[c]	18 (40.00)	AU, BG[b], CH, DE, IL, IT[b], NZ[b], PL, UG, US[b]	5 (11.11)	DE, EE, IL	7 (15.56)	AU, CL, DE, FR, IL, UG
Conformity[a]	21 (46.67)	AU, BGb, CL, DE, FRb, IL, ITb, NZb, PL, PT, TR[c,UAb,UKb,USb]	22 (48.89)	AU, BG[b], BR, CH, DE, EE, FR, IL, IT[b], NZ[b], PL, UG, US[b]	NA	–	3 (6.67)	AU, DE
Security[a]	28 (62.22)	AU, BGb, DE, FR, IL, ITb, NZb, PL, PT, TR[c,UAb,UKb,USb]	13 (28.89)	BG[b], BR, CH, CL, DE, EE, FR, IT[b], NZ[b], PL, UG, US[b]	7 (15.56)	AU, EE, CH, IL, UG	3 (6.67)	EE, UG
Power	23 (51.1)	AU, CL, DE, EE, FR, IL, PT, TR[c], UG	21 (46.67)	AU, BR, BG[b], CH, DE, EE, IL, IT[b], NZ[b], PL, TRc, UAb, UKb, US[b]	NA	–	1 (2.22)	AU
Achievement[a]	26 (57.78)	AU, BR, DE, EE, FR, IL, PL, PT, TR[c], UG	17 (37.78)	AU, BG[b], CL, DE, EE, IL, IT[b], NZ[b], PL, TRc, UAb, UKb, US[b]	NA	–	2 (4.44)	CH, FR
Hedonism[a]	30 (66.67)	AU, BG[b], CL, DE, EE, FR, IL, IT[b], NZ[b], PT, TR[c], UAb, UG, UKb, US[b]	10 (22.22)	AU, BR, CH, DE, FR, IL, PL	5 (11.11)	DE, EE	3 (6.67)	DE, EE
Stimulation	33 (73.33)	AU, BG[b], DE, EE, FR, IL, IT[b], NZ[b], PL, TR[c], UAb, UG, UKb, US[b]	10 (22.22)	AU, BR, CH, CL, DE, EE, IL, PT	NA		1 (2.22)	IL
Self-direction[a]	31 (68.89)	AU, BG[b], BR, CL, DE, EE, FR, IL, IT[b], NZ[b], PL, TR[c], UAb, UG, UKb, US[b]	9 (20.00)	AU, DE, IL, PL, PT	4 (8.89)	CH, DE, EE	3 (6.67)	DE, EE

Note.
AU—Australia, BG—Bulgaria, BR—Brazil, DE—Germany, CH—Switzerland, CL—Chile, EE—Estonia, FR—France, IL—Israel, IT—Italy, NZ—New Zealand, PT—Portugal, PL—Poland, TR—Turkey, UG—Uganda, UA – Ukraine, UK – United Kingdom, US—United States of America. The abbreviation of country names is according to ISO (ISO 3166 International Standard), Alpha-2 Code. NA—Not Applicable.
As shown in Table 4, basic values were, in most cases, located in the expected region (51.1% power and benevolence to 73.3% stimulation), except for tradition and conformity. Most misplaced items appeared in one of the adjacent regions (55.6% hedonism to 95.7% benevolence) and were not country-specific. No clear age trend (not shown in Table 3) was identified in the number of misplaced items (6–7 years: 3 to 7 deviations; 8–9 years: 4 to 5 deviations; 10–12 years: 3 to 6; 13–14 years: 4 to 13.
[b]The deviation was observed in the mean configuration of several countries.
[c]Final model with 9 basic values.
[a] Row percentage exceeds 100 as items of the same value type appeared in more than one value region in at least one sample/ sub-sample.

In most studies with early adolescents (5 out of 6 samples/ sub-samples, 83.3%), openness to change was considered the most important value domain followed by self-transcendence. This evidence refers to 3 countries: Estonia, Israel, and Italy. In one sub-sample from Poland (Cieciuch et al., 2016), self-transcendence was identified as the most important higher-order value (16.7%). In all samples/ sub-samples, conservation ranked third in the higher-order values hierarchy.

Overall, in most studies including children aged 12 years and/or younger, we identify a value hierarchy where self-transcendence values are at the top and self-enhancement values are at the bottom; while openness to change and conservation values occupy intermediate positions. In studies including early adolescents (from 13 years old), a different hierarchy is consistently observed with openness to change values at the top and self-enhancement values at the bottom, while self-transcendence and conservation values are in intermediate positions. Although it is possible to identify this general pattern, as previously reported, the location of values throughout the hierarchies, could vary according to the age group or the country.

For more detailed information about the findings of each study regarding value hierarchy and importance, see Tables 2 and 3.

3.5.2. *Differences in value priorities*

As the previous findings show, it is possible to identify age and cultural differences in value priorities. Gender differences in value priorities were also consistently reported in several studies (n = 19). The findings showed that while girls attributed more importance to self-transcendence (Aquilar et al., 2018; Benish-Weisman et al., 2020; Bilsky et al., 2013; Daniel et al., 2020; Döring et al., 2015, 2017; 2018; Elizarov et al., 2023; Tulviste et al., 2018; Uzefovsky et al., 2016), boys ascribed more importance to self-enhancement (Aquilar et al., 2018; Benish-Weisman et al., 2020; Bilsky et al., 2013; Daniel et al., 2020; Döring et al., 2015, 2017, 2018; Elizarov et al., 2023; Uzefovsky et al., 2016) and openness to change (Bilsky et al., 2013; Daniel et al., 2020; Döring et al., 2017). Also, these same gender differences were observed across countries (Bilsky et al., 2013; Döring et al., 2015). Moreover, these differences were even more salient at the level of the ten basic values, where girls prioritised benevolence as the most important value (Kandler et al., 2016; Knafo & Spinath, 2011; Tamm & Tulviste, 2015; Tulviste & Tamm, 2014; Vecchione et al., 2020) and boys prioritised power (Kandler et al., 2016; Knafo & Spinath, 2011; Tamm & Tulviste, 2015; Tulviste & Tamm, 2014; Vecchione et al., 2020). In this line of research, the Knafo and Spinath (2011) study on genetic and environmental influences on gender-typed (self-transcendence vs. self-enhancement) and gender-neutral (conservation vs. openness to change) values constitutes a crucial contribution to understanding the impact of gender differences on value priorities. The study found significant gender differences in the heritability estimates at the extremes of the distribution of gender-typed values. For girls, low self-transcendence (high gender-atypical) values showed large group heritability (0.76), whereas for boys, no heritability was found for gender-atypical values (high self-transcendence).

Other variables were also found to account for variance in value

priorities across individuals. Parents' educational level, examined in three studies (Benish-Weisman, 2015; Daniel & Benish-Weisman, 2019; Hadjar et al., 2012), was found to be related with differences in value priorities. Findings showed that children with highly educated mothers rated openness to change and self-enhancement higher and self-transcendence lower than children of mothers with lower educational levels (Benish-Weisman, 2015; Hadjar et al., 2012).

Genetic factors were found to account for about one-third of individual variance on value priorities, with heritability estimates ranging from 0.00 to 0.62. Non-shared environmental factors were found to explain about half, also accounting for most of the variance across all the value dimensions with heritability estimates ranging from 0.31 to 0.81. Kandler et al. (2016), Knafo and Spinath (2011), Uzefovsky et al. (2016). Genetic factors were, moreover, found to have positive effects on value congruence between parents and children in all values, except in the case of security (Kandler et al., 2016).

Finally, migratory background was also related with value priorities. Children with migratory background gave more importance to conservation and self-enhancement and less importance to openness to change than children with no migratory background (Döring et al., 2018; Gross & Dewaele, 2018).

3.5.3. Patterns of stability and change

A second research question was if value priorities change over time starting from childhood to early adolescence. To answer this, we searched for patterns of stability and change in value priorities by inspecting the longitudinal studies included in the review (n = 10). Studies explored the development of values either assessing the rank-order stability across different time points or estimating change based on values means (e.g. as the evolution of the mean importance of values across time).

As regards rank-order stability, the correlations between adjacent time points across the studies including the youngest children (5–7 years old) were low to moderate, ranging from 0.18/.37 to 0.40/49 (Cieciuch et al., 2016; Daniel et al., 2020). Studies with samples of older children (from 10 years old) found higher correlations, ranging from 0.38 to 0.77 in the case of studies at the level of the ten basic values (Daniel et al., 2020; Tulviste & Tamm, 2014; Vecchione et al., 2020) and from 0.42 to 0.78 in the case of studies at the level of the four higher-order values (Aquilar et al., 2018; Benish-Weisman, 2015; Vecchione et al. 2016). Across these studies, stability was consistently highest for power and self-enhancement values. Conversely, values with the lowest stability were not consistent across studies: while some found hedonism or universalism as the lowest, others found openness to change or self-transcendence. Together, these results point to an increase on value stability with age from childhood onwards and suggest higher levels of stability in early adolescence.

Five of the previously mentioned longitudinal studies also assessed the mean-level change by estimating the direction and strength of the longitudinal change, indicated by the mean of the slope parameter. Overall, the results indicated that self-enhancement values tended to increase in importance in the majority of the studies with samples of older children (Aquilar et al., 2018; Cieciuch et al., 2016; Daniel & Benish-Weisman, 2019; Vecchione et al., 2020) with the means of the slopes varying between 0.08 and 0.18 ($p < 0.001$). Furthermore, openness to change values tended to increase in importance (0.12 to 0.25, $p < 0.001$-mean of the slopes). In a less consistent pattern, conservation values tended to decrease in 3 out of the 5 studies (−0.08 to −0.52, $p < 0.001$-mean of the slopes) (Cieciuch et al., 2016; Daniel & Benish-Weisman, 2019; Vecchione et al., 2020). Similarly, self-transcendence values, remained stable in some studies (Cieciuch et al., 2016; Daniel & Benish-Weisman, 2019; Vecchione et al., 2020).

4. Discussion

This review aimed to identify and summarise the empirical evidence on the development of basic human values in childhood and early adolescence within the framework of Schwartz's TBHV. Specifically, we focused on 1) the fit of children's values to the circular structure of the TBHV; 2) the development of value hierarchy and importance from middle childhood to early adolescence and, 3) the instruments used to assess children's and early adolescents' values. The main findings regarding these three central questions are outlined and discussed below.

4.1. Fit of children's and adolescents' value structure to the TBHV

Overall, the evidence from the studies included in this review shows that the structure of values in childhood and early adolescence is similar to adults and older adolescents. Children's and early adolescents' values are arrayed on a circular structure with two basic bipolar dimensions (self-enhancement versus self-transcendence and openness to change versus conservation) and four to ten distinct value regions can be identified (from the four higher-order values to the ten basic values). A highly differentiated value structure was found in most studies with children from 5 to 14 years from several countries. These findings have important implications for the literature.

First, they provide overall support for the validity of TBHV for younger samples and, to some extent, for the universal nature of the structure of values (Bilsky et al., 2013; Bubeck & Bilsky, 2004, Döring, 2010). Each value type was located in the expected region or in its adjacent regions (80% to 100%). Similar percentages were found for adult samples (Schwartz & Sagiv, 1995). The mutual compatibilities and incompatibilities between values suggest that the motivational meaning of values is similar for children, adolescents, and adults (Döring, 2010; Döring et al., 2010; Uzefovsky et al., 2016). In this review, however, we found systematic deviations from the theoretical structure that may show a developmental change in values meaning, which we will discuss later (Bubeck & Bilsky, 2004; Döring et al., 2010).

Second, 5 to 7-year-olds showed a well-developed value structure (Döring et al., 2015; Lee et al., 2017; Tamm & Tulviste, 2022). Nonetheless, the questions of *when* and *how* it starts to develop remain unanswered due to the lack of studies of children below this age (Döring et al., 2015). In our view, during this developmental period from childhood to early adolescence processes of identity development and formation (where values assume a central role) take place, therefore focus on it can make significant contributions to the knowledge on early value development. Also, during this period important socialization sources come into play (e.g. teachers, school principals, peers) that likely influence value development (Benish-Weisman, et al. 2022; Berson & Oreg, 2016).

Third, considering that the ability for abstract thinking develops during late childhood (Dumontheil, 2014), it is remarkable that the value structures of children, adolescents, and adults show such strong similarities. Empirical evidence indicates that with age, children increasingly conceive values as abstract concepts that can be generalized across contexts, whereas younger children tend to describe them in terms of specific situations or behaviours (Shachnai & Daniel, 2020). Longitudinal studies suggest that this developmental shift is supported by cognitive advances: improvements in working memory foster the ability to form general concepts, which in turn predicts later value abstraction (Misgav & Daniel, 2022). In parallel, as children's understanding of the social world expands, values appear to shift from being perceived as observable to mental constructs, thereby becoming more effective motivators of behaviour (Misgav et al., 2023). Building on this evidence, some authors argue that children's conception of values at this stage is largely implicit rather than explicit (Abramson et al., 2018; Döring et al., 2015). Accordingly, children seem to hold an emerging awareness that some goals are compatible (e.g., being the best and being the leader), while others may conflict (e.g., being the best and helping others; Abramson et al., 2018; Döring et al., 2015). The presence of such a differentiated structure at an early age has been interpreted as

evidence that values reflect basic psychological structures (Döring et al., 2016). The two bipolar dimensions of the TBHV mirror central conflicts described in the moral development literature. Specifically, the self-transcendence vs. self-enhancement dimension reflects the tension between self-interest and concern for others, while the openness-to-change vs. conservation dimension corresponds to the conflict between autonomy seeking and adherence to social conventions (Smetana et al., 2014).

Fourth, for some authors, socialization factors may, at least, partly explain why the circular structure of values is identified in children as young as five (Abramson et al., 2018), research has shown that socialization factors have an important role in values development (Bubeck & Bilsky, 2004; Collins et al., 2017). Interestingly, even the development of abstract thought doesn't follow a universal developmental trajectory, being more context-sensitive than previously thought (Carstensen et al., 2019). In fact, children aged 5 to 12 showed that the level of abstraction in children's explanations of their values varies according to the societal relevance of those values, independent of age (Shachnai & Daniel, 2020). Children who gave more importance to self-transcendence and openness to change (generally more widely endorsed values) demonstrated higher levels of abstraction in their descriptions of values than children who gave more importance to self-enhancement and conservation (less widely endorsed values).

Fifth, the early development of value structure poses important theoretical questions, namely for the field of developmental psychology. Research on the underlying basic processes (e.g. cognitive) could provide important insights into the field (Döring et al., 2015). Despite the knowledge gaps, the TBHV has been recognised as a useful framework for educational psychology (Boekaerts et al., 2006), namely for identifying goals that are compatible with one another in learning settings and those that represent opposite motivations.

As previously mentioned, despite the similarities in the value structure between children, early adolescents, and older samples, we identified systematic deviations from the theoretical structure that were consistent across instruments. They were characterized by the reversed order of individual values, namely between universalism and benevolence (self-transcendence values), power and achievement (self-enhancement values), and security and conformity (conservation values). Reversed order of adjacent basic values, like those mentioned above, have been attributed little conceptual significance (Schwartz & Sagiv, 1995). Some authors, however, argue that these deviations warrant more attention, as they may reveal developmental changes in value structure and meaning (Bubeck & Bilsky, 2004; Döring et al., 2010).

The deviation of benevolence to universalism region and of power to the openness to change values region suggests that, for children and early adolescents, these values may be closely related to independence and autonomy (e.g., to have the power to decide what they want to do). This may come from the conflict between lacking control over one's personal life (dependent on significant others) and being increasingly aware of their capabilities. According to Erikson's theory of psychosocial development (Erikson, 1968), between 5 and 12 years, children experience a psychosocial crisis characterised by a conflict between industry (competence) vs. inferiority. The successful resolution of this crisis is characterised by a sense of competence that stems from feeling encouraged and reinforced by demonstrating their abilities and developing new skills. Children and early adolescents strive for mastery and are increasingly required to have a more active role in their relationships with close others (e.g. at home and school), as they are recognised by their more developed capabilities. Therefore, the ability to help others and to make others happy may rely on the recognition of the competence to do tasks with increasing levels of autonomy that continue through adolescence. Lastly, the deviation of security to conformity region and nearby tradition suggests that the sense of safety may be closely related with the self-restraint of actions that harm others or violate social expectations. Altogether, these systematic deviations from the circular structure proposed by Schwartz et al. (2001) may suggest that the meaning of some values might be slightly different for children, adolescents, and adults in most countries. While random variation due to unreliability of measurement has been pointed out as the most likely explanation for values to emerge in adjacent locations, consistent deviations in most samples/sub-samples likely indicate distinctive patterns (Schwartz & Sagiv, 1995). The evidence is especially consistent for countries where most or all samples revealed a specific deviation (e.g. reversed ordering of power and achievement in samples/ sub-samples from Germany and Poland). This suggests that, for children and early adolescents in these countries, personal success obtained by the recognition of competence is consistently and primarily associated with a sense of safety, possibly due to socialization.

Recent large-scale studies in adult populations show that the Schwartz value structure is highly robust, with fewer than 20–25% of items deviating from their expected positions, usually shifting only to adjacent values (Smallenbroek et al., 2025; Cieciuch & Schwartz, 2012; Coelho et al., 2019). These minor deviations, often attributed to measurement or cultural factors, do not disrupt the overall structure. The deviations found in child and adolescent samples follow a similar qualitative pattern, though they appear more frequent at younger ages, possibly reflecting ongoing developmental processes in value differentiation and abstraction.

There is mixed evidence regarding the stability of the value structure during middle childhood and early adolescence. While some cross-sectional and longitudinal studies have found a stable level of differentiation throughout this period, identifying 7 to 8 value regions (Bilsky et al., 2013; Cieciuch et al. 2016; Tamm & Tulviste, 2022), the differentiation level found across samples in other studies varied considerably both within and between age groups. Methodological differences may partly explain inconsistent findings. For example, in adults, socioeconomic status was associated with differences in value structure (Fischer et al., 2011). There is some evidence that this may also occur in children and early adolescents (Döring et al., 2015; Roazzi et al., 2016). Comparisons between studies regarding developmental changes in value structure are particularly difficult when the analyses are reported for very different age intervals (e.g., 6–11 years, 7–9 years, 8–11 years). In addition, some studies report only an overall structural pattern covering a large age range (e.g. 5–12 years; 7–14 years), possibly with the underlying assumption of structure stability across this period. Importantly, the acknowledged differences across contexts and countries highlight the need to consider not only developmental factors but also contextual and sample characteristics—such as cultural background, socioeconomic conditions, or parental education—when interpreting inconsistencies in value differentiation across studies.

Value change patterns (in structure and/or mean levels) examined in longitudinal studies during middle childhood and late childhood (Cieciuch et al., 2016; Daniel et al., 2022; Daniel et al., 2023b; Vecchione et al., 2020) and adolescence (Daniel & Benish-Weisman, 2019) are consistent with Schwartz's circular structure of values. They suggest that value development unfolds in a coordinated manner with increases in one value being accompanied by (or stemming from) a decrease in a conflicting value (Daniel & Benish-Weisman, 2019). However, this coordinated pattern was only partly observed on late childhood and adolescence (Daniel et al., 2022; Vecchione et al., 2020). Value importance changes that occur during this period may create transient incoherence in value systems (Daniel et al., 2022). While values importance varies with culture, the process of value development appears to follow a similar general trend across cultures (Daniel et al., 2022).

4.2. Development of value hierarchy and value importance

Research on the early development of values under the framework of Schwartz's TBHV (Schwartz, 1992) has also focused on another fundamental question- How are the different values prioritized in the course of childhood and early adolescence?. In this review, most studies on middle and late childhood carried out in different countries support the pan-cultural value hierarchy found in adults (Schwartz, 1994). In this

hierarchy, self-transcendence (benevolence and universalism) and self-enhancement (achievement and power) are ranked as the most and the least important values, respectively; with openness to change and conservation in between (Benish-Weisman, 2015; Cieciuch et al., 2013a; 2013b; Collins et al., 2017; Döring, 2010; Gross & Dewaele, 2018; Döring et al., 2017, 2018). Longitudinal studies have confirmed the stability of this hierarchy throughout childhood (Cieciuch et al., 2016; Daniel et al., 2020) and recent research has continued to support this trend (Daniel et al., 2023b). The similarities in the value priorities of children and adults have been considered as a demonstration of the socialization process carried out within the family. In fact, research has supported this hypothesis by showing that parent–child value similarity was largely explained by the socio-cultural context (national value profiles) shared by family members highlighting the parents' role as socializing agents (Barni et al., 2013; Döring et al., 2017). In the family context, but also at school, society's most important values (self-transcendence and conservation values) appear to be easily transmitted as they minimize the risk of conflicts between social groups, promote cooperation in the attainment of collective goals and, ultimately, have a fundamental role in the survival of societies (Döring et al., 2017; Tomasello & Vaish, 2012). Children might be particularly influenced by the prevailing values of society due to their increased adherence to social norms (Daniel et al., 2020; House et al., 2019).

We also identified early adolescence as a period of life when changes in patterns of value priorities occur with a shift from self-transcendence to openness to change as the most important values (e.g. Benish-Weisman & McDonald, 2015; Kandler et al., 2016). The increased importance of openness to change values can be understood through two main developmental processes during this period: the increase in the confidence in their growing abilities and the development of a *sense of identity* that corresponds to the successful resolution of the *identity* vs. *role confusion* crisis (Erikson, 1968; 1993). As children grow, they feel more confident in their abilities and start feeling more autonomous, which makes them search for new sensations and try out new roles and beliefs (Döring et al., 2015). Moreover, the development of a sense of identity or "individual uniqueness", accompanied by an "unconscious striving for a continuity of experience" lead children to explore alternatives and engage in choosing those most meaningful, contributing to an increase in values that promote experimentation and curiosity, crucial characteristics for identity formation. Thus, the prioritization of openness to change values is not surprising as these values perfectly embody such traits and emphasize novelty, excitement, challenge and independent thought and action (Schwartz, 1994). Additional explanations have been provided from the perspective of propensity for risk taking and desire for autonomy during adolescence (e. g. Benish-Weisman, 2019; Daniel et al., 2020).

While identity formation unfolds, values become more stable (e.g. Aquilar et al., 2018; Daniel & Benish-Weisman, 2019; Döring et al., 2016). The longitudinal studies included in this review support this idea and point to an increase on value stability with age from childhood onwards. Even among the younger samples, the reported stability coefficients of values were similar to the stability coefficients of personality traits in childhood (mean stability of values among 7–11-year-olds: 0.4; Cieciuch et al., 2016) mean stability of personality traits 6–12-year-olds: 0.43 (Roberts & DelVecchio, 2000). While it is recognised that values are moderately stable during childhood and that stability is higher during adolescence, the evidence regarding value priorities, previously presented, and the results of studies on values' mean-level changes during these periods indicate that there are some changes over time. During childhood and early adolescence, the importance of openness to change values increases, while the importance of conservation decreases (Cieciuch et al., 2016). Throughout these periods, there is also evidence of an increase in self-transcendence values and a decrease in self-enhancement values (Döring et al., 2017). These patterns of value change support the motivational compatibilities and oppositions between values that underline Schwartz's (1992) model: increases in importance in one higher-order value were accompanied by decreases in importance in the opposite higher-order value. Altogether, these findings suggest that the stability of values is similar to the stability of other personality traits during this period of development. In addition, these results also demonstrate that value change patterns maintain the coherence of the value structure, as previously found in adults (Maio et al., 2009). Value priorities change as children grow older, but also significant life events, personal experiences or context's specifics can trigger value change (Döring et al., 2016). Patterns of gender differences in value priorities were identified consistently across studies and cultures and were found to be the same to those already found in adults. The social role theory, and other gender theories, help to explain these findings (Eagly et al., 2000). Cross-culturally consistent gender role expectations for men to exhibit agentic traits such as ambition, dominance, or decisiveness, postulate the preference for agentic-instrumental values, such as power and achievement. In the same way, gender role expectations for women to exhibit communal traits, such as caring, sensitivity or sympathy, also postulate the preference for expressive-communal values, such as benevolence and universalism (Schwartz & Rubel, 2005).

Evidence was also found regarding the role of parents' educational level on children's and adolescents' value priorities. Children of highly educated parents prioritized openness to change and self-enhancement values more than self-transcendence values (Benish-Weisman, 2015; Hadjar et al., 2012). These results reinforce the idea that educational experiences promote the intellectual openness, flexibility, and breadth of perspective essential for these values (Schwartz, 2007). They highlight the importance of socialization for value development during childhood and early adolescence.

Studies on genetic factors have shown that non-shared environmental factors explain most of the variability of the individual differences in value priorities (on average, 59 to 69% of the variance). Nonetheless, genetic factors also play an important role in values at this stage of life explaining, on average, 23 to 42% of the variance, while shared environmental factors (shared by core family members) have a weak effect on values explaining, on average, 0 to 8% of the variance. These findings suggest that although socialization plays an important role in instilling specific values to children and adolescents, it may not be the only way. Peer influence and individual events seem also to play a part in the process. Parents may, however, influence children's value priorities by selecting contexts matching their genetic characteristics that, in turn, influence children's value priorities (Kandler et al., 2016).

4.3. Instruments used to assess children's and early adolescents' values

Our review shows that the Portrait Values Questionnaire (PVQ) is the most widely used instrument to assess values in children and adolescents, particularly in its short version (PVQ-21). While it has proven suitable for adolescents, its reliance on reading and abstract reasoning makes it less appropriate for younger children. To address this limitation, the Picture-Based Value Survey for Children (PBVS-C) was developed, offering a pictorial and age-appropriate format that has demonstrated structural validity across diverse cultural contexts and even with children as young as five. More recently, the Animated Values Instrument (AVI and AVI-r) has further expanded the possibilities of early assessment by incorporating audiovisual stimuli and best–worst scaling, thus reducing literacy demands while preserving compatibility with Schwartz's model.

Other measures, such as the Values in Context Questionnaire (VICQ), emphasize the role of situational and social contexts and are mostly applied with adolescents. Some studies also combined age-appropriate measures (e.g., PBVS-C for younger children and PVQ for older ones), which allows developmental sensitivity but may limit comparability across samples. Overall, while the PVQ remains dominant, instruments specifically tailored for younger populations, such as the PBVS-C and AVI, represent promising alternatives. Future research should continue

to evaluate their validity across cultures and developmental stages, and to establish best practices for their combined use.

4.4. Limitations and implications for further research

This review has several limitations that need to be acknowledged. Based on the inclusion criteria, several studies that may be relevant to our research were excluded for different reasons. Studies published in languages other than English; studies without separate data analysis by age when the age span exceeded 14 years; evidence based on secondary data analysis; as well as qualitative studies, dissertations or book chapters all were dismissed, although many of them may have yielded relevant findings.

Regarding the analysis and synthesis of the evidence, we were unable to perform a *meta*-analysis to determine how and when values change from middle childhood to early adolescence. The vast majority of studies did not include age comparisons or report the necessary statistics to calculate effect sizes.

Another potentially relevant question refers to response bias, specifically when rating scale values instruments (e.g., PVQ) were used. To correct for differences in scale use, Schwartz (1992) recommends the standardisation of individuals' ratings of each value around their own mean when this type of instrument is used. However, some of the studies included in this review that used the PVQ, mention the use raw scores to compute values or do not report the application of the procedure recommended by Schwartz. In descriptive analyses, namely when comparing values' means, the use of raw data can lead to biased results and compromise the comparability of these studies with the remaining.

Through our review, it has been possible to identify some questions receiving little attention within the literature and that future research could usefully address for the benefit of the field. The question of when values start to develop remain unanswered, as studies do not investigate values before the age of five. Since the studies including five-year-olds already find a meaningful conception of values by this early age, future studies should include younger children, to increase understanding on this aspect. Future longitudinal studies starting at an early age (< 7 years) and covering the transition period from childhood to early adolescence may provide valuable information on the early emergence and development of values during this important period.

Regarding the theoretical structure of values and in contrast with adults, the universal character of the TBHV among children and early adolescents still needs to be further demonstrated. More research is needed to determine whether cultural differences between children and adolescents coincide with those found between adults. Additionally, as individual differences are important, further studies may lead to identify potential factors that account for the variance across individuals. Our results showed that the environmental factors not shared by family members account for most of the variability in values' individual differences, so an effort should be made to better identify and clarify what these factors are. It may be also interesting to study the possible interaction between school and family influences, its association to value development, and how children combine these influences and integrate them in their own value system. In a similar vein, more detailed information is needed on school influence on values during childhood and adolescence. Given that the mothers' education (a proxy of the family's socioeconomic status (SES)) is related to offspring values and that education is an important "social elevator" (Giroux et al., 2020), it would be important to examine whether school effects differ, namely by student SES. For example, school organisational factors, such as implementing measures to increase diversity (an even distribution of children from different SES/race/ethnicity across classes) may influence children's and adolescents' values, but these effects may be moderated by SES. The interaction between family influences and school contacts (classmates, teachers) in the understanding of children's and adolescents' value development may lead to important advances in this field.

5. Conclusion

Research conducted within Schwartz's Theory of Basic Human Values (TBHV) has been pivotal to our understanding of what individuals across cultures believe is important in their lives, and how those values shape our societies. This large body of work provides robust support to the universalism of 10 basic human values and their relationships of congruity and conflict that can be mapped as two bipolar meta dimensions opposing self-enhancement to self-transcendence and conservation to openness to change. Notwithstanding, it was only recently that a new body of research developed to determine if the TBHV holds when applied to the earlier stages of the life span of childhood and early adolescence and, relatedly, how values are prioritized by this younger population. The development of instruments and procedures (e.g., PBVS-C and the AVI) specifically tailored to assess younger children's values according to the TBHV has been instrumental to an exponential growth in the literature. Having systematically reviewed this empirical work, we conclude that the evidence supports the validity of the TBHV in younger ages and that children's value prioritization. Finally, we believe that this new field of inquiry on the ontogeny of values structure and prioritization has great potential to further our knowledge of human values, notably through a virtuous articulation of social developmental and cross-cultural research. From a more applied perspective, this research can also make a positive contribution to a more evidence-based and practical discussion in the different contexts and spheres of societies (e.g., schools, communities and, policy making) concerning the development, expression, and variety of human values in childhood. Ultimately, it can unveil children's perspectives on the social world, their needs, and desires, as they navigate life.

6. Funding information

This work was supported by the Portuguese Foundation for Science and Technology (FCT) within the scope of the CLAVE project ("The Social Development of Human Values in Childhood and Early Adolescence"; FCT-PTDC/SOCSOC/30635/2017).

7. Authors statement

We the undersigned declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere.

We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed.

We further confirm that the order of authors listed in the manuscript has been approved by all of us.

We understand that the Corresponding Author is the sole contact for the Editorial process. She is responsible for communicating with the other authors about progress, submissions of revisions and final approval of proofs.

Declaration of competing interest

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

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.childyouth.2026.108914.

Data availability

Data will be made available on request.

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