Towards a conceptualisation of intensive parenting norms: Testing exact and approximate measurement invariance across social and country contexts

Klímová Chaloupková, Jana; Pospíšilová, Kristýna

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Jana Klímová Chaloupková[1] & Kristýna Pospíšilová[1]

[1] Institute of Sociology of the Czech Academy of Sciences

Address correspondence to: Jana Klímová Chaloupková, Czech Academy of Sciences, Institute of Sociology, Jilská 1, 110 00 Prague (Czech Republic). Email: jana.chaloupkova@soc.cas.cz

Abstract

Objective: We examine the measurement invariance (MI) of intensive parenting norms across three European countries as well as across gender, education, and parental status.

Background: The social norms of intensive parenting have become increasingly dominant in recent decades. However, there is no measurement model of intensive parenting norms in large-scale social surveys and it is unknown whether these norms convey the same meanings across different social and cultural contexts.

Method: This study draws on data from the European Social Survey Cross-national Online Survey panel (2017) administered in Estonia, Slovenia, and Great Britain. We conducted a multi-group confirmatory factor analysis and alignment optimization to assess the exact and approximate MI of intensive parenting norms across three countries and social contexts.

Results: Due to a poor fit of the previously suggested four-factor model of intensive parenting norms, a revised two-factor model with stimulation and child-centred dimensions—excluding items that measure expert guidance and parental responsibility—was proposed. The two-factor model attained scalar invariance between educational groups and between parents of children aged under 12 years and others; however, only metric invariance was achieved among countries, gender, and parental status. The alignment optimization results suggest that the reduced scale is approximately invariant across all examined groups.

Conclusion: This study highlights that the MI of parenting norms should not just be assumed but tested. This study provides insights into the conceptualisation of intensive parenting norms and recommendations for future research and development on measurement.

Key words: intensive parenting, measurement invariance, alignment optimization, European Social Survey, cross-national comparison, gender, education

1. Introduction

In recent decades, growing parental investment and time spent in childcare by both mothers and fathers has been widely documented (Craig et al., 2014; Dotti Sani & Treas, 2016; Faircloth et al., 2013; Gauthier et al., 2004; Gauthier & de Jong, 2021; Hays, 1996). Increased parental investment has been associated with an increase in intensive parenting norms, the rise of individualisation, an emphasis on personal responsibility, and the aim of providing children with a better education to prepare them for an increasingly competitive labour market (Gauthier & de Jong, 2021). The importance of exploring intensive parenting norms has been highlighted in fertility research as well, as men and women who perceive childrearing as too demanding may have weaker fertility intentions (Mynarska & Rytel, 2020).

Further, there has been a rapid increase in research on intensive parenting norms over the last few decades. The concept of intensive parenting (mothering) was first introduced by Sharon Hays (1996). Based on an analysis of in-depth interviews with mothers of preschool children and an analysis of parenting manuals in the United States, Hays argued that a child-centred, expert-guided, emotionally absorbing, labour-intensive, and financially expensive model of parenting has become the dominant cultural model (Hays, 1996). To examine intensive parenting norms, Liss et al. (2013) developed the Intensive Parenting Attitudes Questionnaire (IPAQ) in the United States, where it has been widely used to study variations in parenting norms across gender, education, child's age, and between parents and childless individuals as well as the impact of endorsing these norms on child and parental well-being and children's developmental outcomes (Forbes et al., 2020; O'Brien et al., 2020; Rizzo et al., 2013; Schiffrin et al., 2014, 2015). The IPAQ has also been adapted for use in France (Loyal et al., 2017, 2021). However, most of these studies have relied on convenience non-representative samples, which predominantly comprise mothers of small children. Thus far, there is a lack of a measurement model of intensive parenting norms in social large-scale cross-country comparative surveys, which would enable empirical testing of the assumptions regarding the impact of intensive parenting norms on parental involvement and other outcomes.

It is only recently that intensive parenting norms have been examined in large-scale scale social surveys across different country contexts using the European Social Survey Cross-national Online Survey (ESS CRONOS) panel, administered in 2017 in Estonia, Slovenia, and Great Britain (Gauthier et al., 2021). Using this data, Gauthier et al. (2021) proposed the intensive parenting scale (see below for details) and explored a variation of these norms across these three countries and socio-demographic characteristics.

Nevertheless, surprisingly little attention has been paid to assessing the measurement invariance (MI) of parenting norms across social groups and countries. MI refers to the underlying assumption that the same concept is compared across different groups—meaning that all respondents perceive and interpret items in a consistent manner. In case MI across countries or groups is not tested or is absent, there is a significant risk of drawing biased or invalid conclusions on differences in the concept across groups (Cieciuch et al., 2019; Davidov et al., 2014; Leitgöb et al., 2022). There are various reasons that can lead to a lack of invariance, notably methodological (such as variations in data collection methods, and translation issues) or cultural biases (Cieciuch et al., 2019; Leitgöb et al., 2022). Therefore, assessing whether intensive parenting norms scale measures the same constructs across different countries and social groups without measurement bias is a prerequisite for making valid comparisons of these norms between groups or country contexts (Cieciuch et al., 2019; Dyer, 2015; Leitgöb et al., 2022).

Yet, previous findings indicate a few concerns regarding the comparability of intensive parenting scales across different countries and social groups. The scale proposed by Gauthier et al. (2021) is mostly based on the analysis of pooled cross-national data, and the authors admit that separate analyses reveal a different factor structure in Estonia. This might suggest that certain dimensions of parenting norms are constructed in different ways across different country contexts and may be shaped by structural factors, such as family policies, women's employment participation, or cultural factors. Loyal et al. (2017) have not been able to verify the structural validity of the IPAQ in France, thereby suggesting a few differences in the perception of specific items compared to the context of the United States. Moreover, O'Brien et al. (2020) found low reliability estimates for several subscales of the IPAQ using data from the United States and South Korea.

Furthermore, studies that examined IPAQ revealed that MI has not been achieved across genders and races, which may suggest that the responses of mothers and fathers are based on different underlying response processes (Long et al., 2021). Therefore, using data from ESS CRONOS (2017) panel, the primary aim of this study is to establish whether the intensive parenting scale proposed by Gauthier et al. (2021) is a) internationally comparable across Estonia, Slovenia, and Great Britain and b) whether the scale is invariant

across selected socio-demographic groups. Since we concluded that the scale proposed by Gauthier et al. (2021) has a few limitations in terms of measurement invariance, our secondary aim was to identify a reduced scale for measuring intensive parenting norms using the existing battery of questions in ESS CRONOS (2017), which would be comparable across given country contexts and socio-demographic groups.

We consider gender, educational groups, parental status, and age of a child, as these were identified as factors that influence differences in parenting norms (Forbes et al., 2020; Gauthier et al., 2021; Liss et al., 2013; Loyal et al., 2021). Moreover, it may be that group differences are spurious in cases where MI across groups has not been established. The responses of individuals with different socio-demographic characteristics might be formed by different underlying response processes, such as different construct relevance of certain items, different response styles, and different reference frames (Robert et al., 2006). If MI is not tested, these biases could be completely overlooked.

For MI testing, we apply the following two methods. First, we apply the exact approach using multi-group confirmatory factor analysis (MGCFA). Second, since scalar MI was not achieved for all groups using the exact approach, we use alignment optimization (Asparouhov & Muthén, 2014; van de Schoot et al., 2013) to confirm approximate MI across countries and socio-demographic groups.

We contribute to the literature on parenting norms in several ways. First, the findings provide a cross-national perspective to the operationalisation of intensive parenting norms. Although the sample of countries is limited, it is relatively diverse; therefore, the findings on MI in this sample will inform the future construction of intensive measurement of parenting norms in cross-country comparative research.

Second, this study contributes to discussions on how to measure mothering and fathering by investigating whether parenting norms are perceived similarly by men and women (Crapo et al., 2021; Fagan et al., 2014). It also adds to our understanding of social variations in parenting norms by assessing the comparability of these constructs in diverse socio-demographic groups (Amato & Fowler, 2002; Crapo et al., 2021; Shaffer et al., 2022). Moreover, these findings shed light on which aspects of parenting norms are perceived similarly and which ones are perceived differently across various groups, thereby enabling us to assess the extent to which intensive parenting norms can be directly compared across educational groups and among parents and those who are childless. A valid assessment of intensive parenting norms is of vital importance to expanding our understanding of social variations in parenting norms and their links with parental behaviour, fertility decisions, and child and parental well-being.

Finally, the study contributes to the operationalisation of the concept of intensive parenting norms in large-scale social surveys by discussing the dimensionality of the construct of intensive parenting norms.

In the following section, we outline the intensive parenting norms scale proposed in ESS CRONOS and prior research on social variations in intensive parenting norms. Then, we describe our data and analytical strategy employed. In the analysis section, we present the MI tests of parenting norms. We conclude the article by outlining the implications of the findings and recommendations for future measurement development and further research into attitudes towards parenting.

2. Theoretical background

2.1 Measurement of intensive parenting norms

Even though the previous operationalisations of intensive parenting norms follow Hays' concept (1996), the dimensions covered vary considerably across studies (for a summary, see Table 1 in Gauthier et al. 2021; Liss et al. 2013; Loyal et al. 2017). The intensive parenting norms scale proposed by Gauthier et al. (2021) using ESS CRONOS data explored in this study includes 14 items and includes four dimensions of parenting norms: child-centeredness, focus on stimulating children's development, personal responsibility to do one's best for one's children, and pressure to follow expert advice (for a graphical representation of the model, see Figure 1; the wording of individual items is presented in Table 1).

The first two dimensions capture the perspective that childcare is resource-intensive and emphasise that the importance of parents facilitating their children's development are core for the concept of intensive

parenting and have been identified in all prior studies (Gauthier et al. 2021; Liss et al. 2013; Loyal et al. 2017).[1] These dimensions also correspond to the main characteristics of the intensive child-centred 'concerted cultivation' parenting style (in contrast to 'the accomplishment of natural growth' parenting), whereby parents deliberately facilitate children's cognitive and social development through organised leisure activities and extensive reasoning and negotiation as well as encourage children to express their individual needs (Ishizuka, 2019; Lareau, 2011).

In contrast to previous studies, the intensive parenting scale in ESS CRONOS adds two dimensions that are an integral part of Hays' concept: the importance of listening to experts on how best to raise one's children and parental responsibility to do their best for their children (Gauthier et al., 2021). These dimensions reflect an expansion of parenting advice derived from developmental psychology, which emphasises the importance of optimal cognitive and social development in young children in contemporary parenting (Lee, 2014; Ramaekers & Suissa, 2012; Wall, 2018).

Compared to IPAQ (Liss et al., 2013) and its French adaptation (Loyal et al., 2017), ESS CRONOS scale focuses specifically on the 'intensification' of parenting per se and does not include items related to various perspectives on the primary responsibility of mothers for childcare and the view that parenting should be fulfilling and challenging. In addition, the present scale does not cover any distinct factors related to emotional involvement, as items relating to parenting as emotionally absorbing were mostly excluded because of low factor loadings or inconsistency or were loaded on the 'stimulation' factor (Gauthier et al., 2021). This is in line with Nomaguchi and Milkie (2020), who argue that the perspective that parenting is emotionally exhausting should be examined as an outcome of endorsing intensive parenting norms, particularly when the link between parenting norms and parents' mental health is explored (Nomaguchi & Milkie, 2020).

2.2 Social variation in intensive parenting norms

Both qualitative (Johnston & Swanson, 2006; Romagnoli & Wall, 2012; Walls et al., 2016) and quantitative studies (Forbes et al., 2020; Gauthier et al., 2021; Liss et al., 2013; Loyal et al., 2021) suggest that intensive parenting beliefs are endorsed and constructed in different ways based on socio-economic characteristics, such as gender, education, income, age, mother's employment status, parental status, and age of children. For example, qualitative studies have revealed that stay at-home mothers consider good mothering to include constant physical accessibility, while working mothers emphasise quality interaction with children (Johnston & Swanson, 2006). In contrast, quantitative studies have revealed that mothers endorse intensive parenting norms more than childless women (Liss et al., 2013; Loyal et al., 2021), particularly mothers with small children (Forbes et al., 2020). In addition, stay-at-home mothers rate essentialism higher, while working mothers place a greater emphasis on children's cognitive stimulation (Liss et al., 2013; Loyal et al., 2021). Prior studies have revealed mixed evidence on variation in parenting due to gender and social class.

Gender. Although Ishizuka (2019) found that the social norms related to child-centred, time-intensive parenting relate to both mothers and fathers, other studies have suggested that these expectations are experienced less intensively by fathers than mothers who see themselves as more responsible for their child's development (Hays, 1996; Schiffrin et al., 2014; Shirani et al., 2012). With regard to gender, Gauthier et al. (2021) found a difference only in the subscale related to parental responsibility, where women scored higher (Gauthier et al., 2021). Yet, prior studies have revealed that the MI of intensive parenting norms has not been achieved across genders (Long et al., 2021). Similarly, Crapo et al. (2021) found support for the MI of certain structures of parental beliefs across gender, while not for others. These differences might be affected by the social construction of gender roles and by gender socialisation (Crapo et al., 2021). Therefore, there may be different underlying response processes in relation to parenting norms between genders. For example, as women may feel more responsible for childcare than men, they may employ different reference frames than men, which might lead to different response patterns.

Education. Studies have widely documented that highly educated parents spend more time in childcare than their lower-educated counterparts (England & Srivastava, 2013; Kalil et al., 2012) and adopt an intensive 'concerted cultivation' parenting approach (Lareau, 2011). However, certain studies that explore parenting norms have found that highly educated respondents scored lower on the child-centred and stimulation

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1 Developed based on a sample of mothers from the United States, IPAQ consists of five scales: (1) 'Essentialism', (2) 'Fulfilment', (3) 'Stimulation', (4) 'Challenging', and (5) 'Child-Centred' (Liss et al., 2013). The French scale adds the dimension of 'Sacrifice', which relates to the expectation that parents be prepared to put their personal lives and personal time on hold (Loyal et al., 2017a).

subscales but higher on the parental responsibility subscale (Forbes et al., 2020; Gauthier et al., 2021). In contrast, Ishizuka (2019) conducted a vignette survey experiment with a nationally representative sample of parents from the United States and found that both high- and low-educated parents share a strong preference for an intensive parenting style. Yet, non-college graduates tend to rate intensive parenting somewhat more positively than college graduates (Ishizuka, 2019). Previous studies have attempted to explain these contradictions based on the social desirability effect, traditional gender role attitudes, and work orientations (Forbes et al., 2020). Individuals with different socio-economic backgrounds differ in terms of their broader social values and socio-economic resources. These factors might affect the manner in which they interpret specific items related to parenting norms.

Parental status and age of the child. Previous studies also revealed a few differences between parents and childless individuals in endorsement-intensive norms (Gauthier et al., 2021; Liss et al., 2013; Loyal et al., 2017). Further, parents scored higher on children-centred scales than childless individuals but placed a lower emphasis on the importance of listening to experts in parenting compared to childless (Gauthier et al., 2021). Previous studies on intensive norms were mostly based on samples of parents of small children; therefore, it is not clear whether the same measures might be applied to childless individuals or parents of older children. Since a child's developmental needs and childcare demands vary significantly with the age of the child, parents of younger children might interpret certain items in a different manner compared to parents of older children or those who are childless.

To sum up, individuals with different socio-economic backgrounds might interpret particular items differently and this might lead to biased responses to items, although real differences in the underlying construct might be absent. Therefore, to better understand social variation in intensive parenting norms, it is important to empirically investigate the comparability of these constructs across diverse social groups.

3. Data, measures, and method of analysis

3.1 Data

In this study, we use data from the second wave of the ESS CRONOS panel administered in 2017 in Estonia, Slovenia, and Great Britain. This is a pilot study of a cross-national probability-based online panel in which participants were recruited after participating in ESS Round 8 (2016/17) (www.europeansocialsurvey.org).[2] To ensure the representativeness of the general population and to reduce non-response bias related to technological barriers, tablets with internet connection were offered to respondents who had no internet access. Approximately 34%–38% of the Round 8 ESS respondents participated in wave 2 of CRONOS, thereby yielding a sample of 1,828 respondents aged over 18 (Estonia N = 662, Great Britain N = 685, Slovenia N = 481) (Gauthier et al., 2021; Villar, A., Sommer, E., Finnøy, D., Gaia, A., Berzelak, N., & Bottoni, 2018).

The CRONOS wave 2 data included a battery of 18 items that measured parenting norms (presented in Table 1; for more details, see Gauthier et al. 2021). The original response scale ranged from '1' strongly agree to '5' strongly disagree. To maintain consistency with Gauthier et al.'s (2021) analysis, we followed their approach of listwise deletion of cases with missing values.[3] After excluding cases with missing values for the parenting norms items used in the original intensive parenting scale (Gauthier et al. 2021) (see Table 1) and socio-demographic characteristics, our analytical sample was reduced to 1,713 respondents. The sample sizes in individual countries and the descriptive statistics are summarised in Table 2. In the analysis of the reduced 7-item model, we used data from 1,720 respondents.

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2 CRONOS Wave 2, edition 1.1. (2018). NSD—Norwegian Centre for Research Data, Norway—Data Archive and Distributor of CRONOS data for ESS ERIC.

3 The proportion of missing values on parenting norms reached approximately 9% in Estonia, approximately 4% in Great Britain, and approximately 3% in Slovenia. The number of missing values related to socio-demographics was negligible (information on education was missing for eight cases in Great Britain and one in Slovenia). There was no missing information on gender and parental status. In addition, the distribution of missing values did not differ systematically between socio-demographic groups, except in Estonia, where the proportion of parents of young children who did not respond was higher—13.8 %.

Table 1: The wording of the items measuring intensive parenting norms in ESS CRONOS data and the corresponding dimensions

Short label	Wording	Original four-factor scale (Gauthier et al. 2021) (14 items)	Reduced two-factor scale (7 items)
Need	Children's needs should come before those of their parents.	CHILD-CENTRED	X
AdviceProf	It is best that parents listen to the parenting advice of professionals rather than simply rely on family and friends.	EXPERT-GUIDED	X
Less Available*	It is alright for parents to, now and then, be less available for their children.	CHILD-CENTRED	X
ChSucces	A child's successes and failures mostly reflect how well their parents are bringing them up.	X	X
FamRoutine	A family's daily routine should be organized around what works best for parents rather than for their children.	X	CHILD-CENTRED
Badjob*	Parents who seek advice are admitting not doing a very good job.	PAR. RESPONSIBILITY	X
Always Available	Parents should always be available for their children.	CHILD-CENTRED	X
ChMistakes*	Parents need to give children the freedom to learn from their own mistakes.	X	X
ChAttention	Children should be the centre of their parent's attention	CHILD-CENTRED	STIMULATION
PaKnow*	Parents naturally know the best way to bring up their children.	PAR. RESPONSIBILITY	X
Activities	To reach their full potential, it is important that children take part in a wide range of organized activities outside their home.	STIMULATION	STIMULATION
PaWorry	Good parents constantly worry about their child's well-being and comfort.	STIMULATION	STIMULATION
ChTalents	It is the parent's role to discover and develop a child's special talents.	STIMULATION	STIMULATION
AwareExperts	Good parents should be aware of what experts say and write about the development of children.	EXPERT GUIDED	X
BasicNeeds	Parents should make sure their children's basic needs are met, even if it means cutting down on essentials for themselves.	CHILD-CENTRED	CHILD-CENTRED
PaLife*	Parents have a life of their own and should not be asked to sacrifice their own well-being for the sake of their children.	CHILD-CENTRED	CHILD-CENTRED
LatestToys*	Good parents are those who buy children the latest toys and gadgets.	PAR. RESPONSIBILITY	X
PaStress	Parenting is very stressful if you want to do it right.	X	X

Note: The original response scale ranged from '1' strongly agree to '5' strongly disagree. Items with an asterisk were coded accordingly, while the others were reverse-coded, as higher scores mean greater support for the intensive parenting norms. The items marked with an X were excluded from the final scale due to low or inconsistent loadings

We focused on four socio-demographic characteristics—gender, education, parental status, and age of the child—that were identified as factors that affect differences in parenting norms (Forbes et al., 2020; Gauthier et al., 2021; Liss et al., 2013; Loyal et al., 2021). Gender has two categories: (1) male and (2) female. Educational level has three categories: (1) low education (ES-ISCED I–II), (2) medium education (ES-ISCED III–IV), and (3) high education (ES-ISCED V1–V2). Parental status distinguishes parents and individuals who are childless. Finally, to test whether parents of small children differ in their perception of parenting norms from the general population, we distinguished whether or not individuals have children under the age of 12. The latter category includes both parents of older children and childless individuals.[4] Similar to the study of Gauthier et al. (2021), we used the weight W2WEIGHT, which was created by adjusting the post-stratified ESS8 design weight for CRONOS non-response (Villar, A., Sommer, E., Finnøy, D., Gaia, A., Berzelak, N., & Bottoni, 2018).

Table 2: Descriptive statistics of ESS CRONOS (2017) data by country in % (weighted data)

		Total	Estonia	Great Britain	Slovenia
Gender	Male	47.2	46.7	46.2	49.1
	Female	52.8	53.3	53.8	50.9
Educational level	Low education	21.6	16.9	28.7	17.8
	Medium education	36.9	34.0	24.9	57.3
	Higher education	41.5	49.1	46.4	24.8
Parental status	Yes	71.8	75.5	66.2	74.8
	No	28.2	24.5	33.8	25.2
Having a child under 12 years of age	Yes	21.0	21.8	20.3	20.7
	No*	79.0	78.2	79.7	79.3
Sample size (unweighted)		1713	600	647	466

*Note: *This category includes both parents of older children and childless individuals

3.2 Analytical strategy

We applied two approaches for testing MI: exact MI and approximate MI. While exact MI requires that all measurement parameters are equal across groups for valid comparisons, approximate MI assumes that a small degree of non-invariance between parameters is acceptable and still enables us to make meaningful comparisons between groups (Muthén & Asparouhov, 2012, 2013). If testing the exact MI fails, testing approximate MI helps to avoid the risk of rejection of the measurement model, with only slight differences across groups (Asparouhov & Muthén, 2014; Leitgöb et al., 2022; Lomazzi, 2018; van de Schoot et al., 2013).

First, we applied the standard exact MI approach using multi-group confirmatory factor analysis (MGCFA) to test the four-factor intensive parenting scale developed by Gauthier et al. (2021) (using 14 items) across a) countries and b) sociodemographic groups. We used the maximum likelihood with robust standard errors (MLR) estimation method.

Three main hierarchically ordered levels of measurement invariance are distinguished (Asparouhov & Muthén, 2014). The lowest level—configural invariance—assumes the existence of the same general factor structure across different groups. The second level—metric invariance—expects the factor loadings to be equal across the groups compared, suggesting the same meaning of latent construct across groups. The strictest level—scalar invariance—requires both the factor loadings and the item intercepts to be equal across groups, indicating that respondents having the same value on the latent construct have the same expected response (Davidov et al., 2014). Configural invariance allows for the comparison of latent variables among groups, metric invariance allows for a comparison of the items (questions) that make up the latent variable(s) among groups, and scalar invariance allows for the comparison of latent means across groups (Muthén & Asparouhov, 2013).

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4 As a robustness check, we also ran multi-group confirmatory factor analysis (MGCFA) to test the measurement invariance among three groups: childless, parents of children aged under 12 years and parents of children aged over 12 years, but these analyses yielded the same results.

In the baseline configural invariance model, the same factorial pattern is specified with no other restrictions for loadings or intercepts. This model serves as the reference model, and more restrictive models are compared with its model fit statistics (Byrne, 2008). Values of the Comparative Fit Index (CFI) and the Tucker–Lewis Index (TLI) above 0.9 have been considered as evidence of an acceptable fit and those above 0.95 as evidence of a good fit. For the root mean squared error of approximation (RMSEA) and the standardized root mean square residual (SRMR), the recommended cut-off is 0.06 (or lower), but 0.08 (or lower) is acceptable (Byrne, 2008; van de Schoot et al., 2012). If model fit indicators suggest different conclusions, CFI, RMSEA, and SRMR are considered and if two of the three show a good fit, the more restrictive model will be confirmed (Luong & Flake, 2022).

When configural invariance is achieved, the metric model is tested and its model fit statistics are compared with the results for the configural model. The thresholds for model fit statistics are the same and, simultaneously, the size of the changes in these statistics are evaluated. For testing metric invariance (invariance of factor loadings), a change of ≥-0.010 in CFI, supplemented by a change of ≥ 0.015 in RMSEA or a change of ≥ 0.030 in SRMR would indicate non-invariance; for testing scalar invariance (invariance of loadings and intercepts) a change of ≥-0.010 in CFI, supplemented by a change of ≥ 0.015 in RMSEA or a change of ≥ 0.010 in SRMR would indicate non-invariance (Svetina et al., 2020).

As the same factorial structure is required for testing the MI using MGCFA, we conducted exploratory and confirmatory factor analyses (EFA and CFA) for each country. For EFA and CFA,[5] we used the same extraction method as in the previous study (Gauthier et al., 2021)—principal component analysis with varimax rotation method with Kaiser normalisation.[6]

Figure 1:   . Intensive parenting norms model proposed by Gauthier et al. (2021)
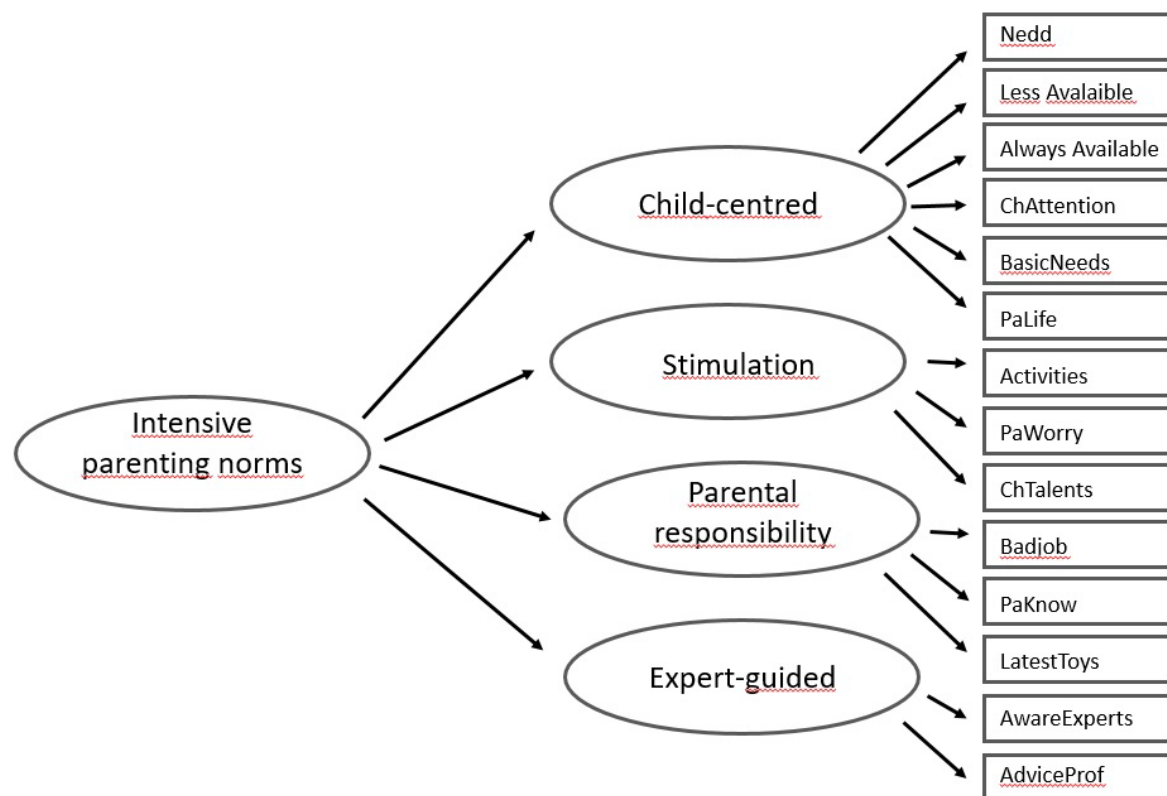
Note: Own graphic presentation based on the study by Gauthier et al. (2021). Item wording is given in Table 1

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5 For data processing and exploratory factor analysis, we used the software IBM Statistics SPSS 24. For CFA and MGCFA and alignment optimization, we used the software Mplus 8.

6 We also replicated EFA using the polychoric correlation matrix, following Gauthier et al. (2021), in STATA, which is appropriate for the ordinal items. Since the results of these analyses did not differ, we opted to treat our data as continuous, which is acceptable with over five categories (Rhemtulla et al., 2012).

Second, since the cross-country and across-group MI of the original four-factor intensive parenting scale (Gauthier et al., 2021) was not established (see the Results section), we addressed our secondary aim of identifying a reduced model that would have achieved better results in MI testing. For this purpose, we conducted a series of EFAs and CFAs using all 18 items available in ESS CRONOS data in each country separately (Table 1). We aimed to include as many items as possible while achieving an acceptable model fit in each country and at least configural invariance, which is a prerequisite for applying approximate MI testing (which is discussed below). We excluded items with factor loadings lower than 0.3 and then items with unstable factor assignments across countries. Consequently, we reduced the intensive parenting norms scale in two core dimensions using seven items, and we applied CFA and MGCFA to test the cross-country and cross-group MI of this reduced model.

Finally, we tested the approximate MI of the reduced model between countries and across two socio-demographic groups using alignment optimization. We applied this method to assess whether a less strict concept of invariance than the exact approach would yield an acceptable degree of non-invariance. We preferred using the approximate MI approach compared to testing for partial scalar invariance, because achieving a suitable partial invariance model may not be straightforward. While partial invariance testing can be used when we expect larger deviations for a small number of parameters (while others have to be equal), approximate MI is used when we expect smaller deviations for a larger number of parameters (Zercher et al., 2015). The alignment optimization employs a simplicity function, which attempts to estimate all the model parameters in such a manner that the number of non-invariant items and the size of the non-invariance are minimal (Muthén & Asparouhov, 2014). According to Muthén and Asparouhov (2014: 3), the comparison of factor means and factor variances across all groups is meaningful when up to approximately 25% of the parameters (factor loadings and intercepts) are non-invariant. The configural invariance is an assumption of alignment optimization because only factor loadings and intercepts are optimized in the procedure (Luong & Flake, 2022).

4. Results

4.1 Exact MI testing of the original intensive parenting norms scale

To test whether the intensive parenting norms scale proposed by Gauthier et al. (2021), which was based on pooled data, is internationally comparable, we replicated their model for three countries—Estonia, Slovenia, and Great Britain—separately using EFA (Table 3). Consistent with Gauthier et al.'s original finding, our results indicate that the data from Estonia reveal a different factorial structure compared to that of the original model based on pooled data. In Estonia, only 9 of 14 items scored highest for the factor to which they should belong based on the original model, while 5 items belonged to a different factor compared to the original factor solution. In Great Britain, two items did not fit the model, and in Slovenia one item did not fit the model. Therefore, we conclude that this model does not meet the requirements for testing the cross-country MI by MGCFA and does not appear to be suitable for cross-country comparisons because the items measuring intensive parenting norms create different concepts. Yet, even after excluding Estonia, the model does not attain a configural level of MI tested by MGCFA between Great Britain and Slovenia (results not shown). This might be caused by methodological, structural (such as demographic, educational structures, female participation in the labour market, work–family balance policies), and cultural factors (Loyal et al., 2017; Seddig & Lomazzi, 2019). With regard to gender role attitudes, Sedding and Lomazzi (2019) emphasised the role of broader societal value orientations in providing different cultural frameworks for interpretation of the wording of items, particularly in cases in which items are ambiguous or vaguely formulated.

Further, to address whether this model is comparable across genders, educational levels, and parental status, we applied the MGCFA to pooled cross-national data. This model was not found to be comparable between those socio-demographic groups, as it did not attain even the configural level of measurement invariance. As presented in Table 4, for all explored social-demographic characteristics, the CFI for the configural model is approximately 0.7 and TLI is approximately 0.6, which is significantly lower than the recommended cut-off of 0.95. In all cases, the RMSEA and SRMR are over 0.6, which does not suggest a good fit. Since even configural models do not reveal a good fit, we do not proceed to interpret higher levels of invariance. Therefore, these findings suggest that the parenting norms scale proposed by Gauthier et al. (2021) is non-invariant

across the named socio-demographic groups and the mean scores of the intensive parenting norms factors or means of individual items cannot be compared across groups.

Table 3: Factor loadings from the exploratory factor analysis of the intensive parenting norms scale proposed by Gauthier et al. (2021) (14 items) in Estonia, Great Britain and Slovenia; ESS CRONOS 2017

Short label*	Estonia				Great Britain				Slovenia			
	Child-centred	Stimu-lation	Parental respon-sibility	Expert-guided	Child-centred	Stimu-lation	Parental respon-sibility	Expert-guided	Child-centred	Stimu-lation	Parental respon-sibility	Expert-guided
Need	0.670				0.635				0.613			
Less Available		**0.693**			0.637				0.642			
Always Available	**0.234**	**0.742**			0.746				0.653			
ChAttention	0.366	**0.451**			0.620				0.612			
BasicNeeds	0.681				**0.330**	0.550			0.470			
PaLife	0.693				0.516				**0.292**		0.714	
Activities		**0.212**		0.581	0.606					0.746		
PaWorry		0.466			0.681					0.701		
ChTalents		**0.409**		0.436	0.688					0.743		
Badjob			0.728				0.722				0.560	
PaKnow			0.647			-0.538	**0.357**				0.562	
LatestToys			0.647				0.554				0.694	
AwareExperts				0.736				0.749				0.691
AdviceProf				0.651				0.828				0.817

Note: weighted data; principal component analysis, varimax rotation with Kaiser normalization. The item wording is available in Table 1. The factor loadings in bold do not fit the factor solution based on pooled data (Gauthier et al. 2021) (marked in grey). Small coefficients were suppressed (except grey fields)

Table 4: Model fit indices of the MGCFA testing MI of the intensive parenting norms scale proposed by Gauthier et al. (2021) (14 items) for different socio-demographic groups

	Chi-Square	DF	Sig.	RMSEA	RMSEA C.I.	CFI	TLI	SRMR
Gender								
Configural	884.882	142	0.000	0.078	0.073 - 0.083	0.725	0.648	0.069
Metric	891.574	152	0.000	0.076	0.071 - 0.080	0.727	0.673	0.072
Scalar	959.643	162	0.000	0.076	0.071 - 0.081	0.705	0.669	0.077
Parental status								
Configural	866.045	142	0.000	0.077	0.072 - 0.082	0.729	0.653	0.068
Metric	855.485	152	0.000	0.074	0.069 - 0.079	0.737	0.685	0.069
Scalar	911.425	162	0.000	0.074	0.069 - 0.078	0.720	0.685	0.072
Child under 12								
Configural	872.129	142	0.000	0.078	0.073 - 0.083	0.728	0.651	0.068
Metric	852.101	152	0.000	0.073	0.069 - 0.078	0.739	0.687	0.069
Scalar	900.092	162	0.000	0.073	0.068 - 0.078	0.725	0.691	0.07
Education								
Configural	772.577	213	0.000	0.068	0.063 - 0.073	0.723	0.645	0.073
Metric	777.752	233	0.000	0.064	0.059 - 0.069	0.730	0.684	0.079
Scalar	831.718	253	0.000	0.063	0.059 - 0.068	0.713	0.691	0.082

Note: RMSEA: root mean squared error of approximation; CFI: comparative fit index; TLI: Tucker–Lewis index; SRMR: standardized root mean square residuals. The recommended cut-off for CFI and TLI is 0.95 (or higher), but 0.90 is acceptable. The recommended cut-off for RMSEA and SRMS is 0.06 (or lower), but 0.08 (or lower) is acceptable. The changes in model fit indicators are not included in this table because the model fit indices CFI and TLI do not meet the required criteria (significantly less than the recommended cut-off of 0.95) and neither RMSEA nor SRMR show a good fit (Chen, 2007)

4.2 Exact MI testing of the reduced intensive parenting norms scale

To identify a reduced model that would be internationally comparable, we conducted exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) on three countries separately using all 18 items available in ESS CRONOS data. After excluding the items that have low or inconsistent loadings across countries, we ended up with a two-factorial model (Table 5). These two factors largely correspond with the stimulation and child-centred dimensions identified by Gauthier et al. (2021), but our model includes the item 'FamRoutine' that was not included in the original scale. Further, in contrast to the original model, the item 'ChAttention' shows the highest factor loadings in the stimulation factor (0.365–0.466), but it also loads at 0.3 or higher on the child-centred factor in Estonia and Great Britain. This suggests that parental attention to children is normatively associated with the emphasis on stimulating their children's development. As 'ChAttention' covers the important part of the intensive parenting concept, we decided not to exclude it due to the cross-loadings from the final model; however, we added a covariance between 'ChAttention' and the child-centred factor. Adding this covariance improved the model parameters in each country as well as the results of the MGCFA.[7] The model fit indicators of the reduced model for each country suggest good fits (Table 6). However, in Great Britain, the value of CFI was slightly below the recommended cut-off, but RMSEA and SRMR showed a good fit.

Table 5: Factor loadings from the exploratory factor analysis of the intensive parenting norms scale (7 items) in Estonia, Great Britain and Slovenia; ESS CRONOS 2017

	Estonia		Great Britan		Slovenia	
	Stimulation	Child-centred	Stimulation	Child-centred	Stimulation	Child-centred
FamRoutine	-0.099	**0.363**	-0.014	**0,368**	-0.126	**0.311**
ChAttention	**0.466**	0.301	**0.365**	0,342	**0.449**	0.080
Activities	**0.334**	-0.050	**0.311**	-0,038	**0.512**	0.113
PaWorry	**0.699**	0.050	**0.624**	0,084	**0.748**	0.002
ChTalents	**0.565**	-0.077	**0.595**	0,140	**0.567**	-0.100
BasicNeeds	0.111	**0.483**	0.165	**0,362**	0.325	**0.481**
PaLife	-0.004	**0.630**	-0.003	**0,700**	0.068	**0.416**

Note: weighted data; Principal axis factoring, Varimax rotation with Kaiser normalization. The item wording is available in Table 1. The factor loadings in bold belong to a given factor solution. The item wording is available in Table 1

Table 6: Confirmatory factor analysis of the reduced intensive parenting norms scale (seven items) for Estonia, Great Britain and Slovenia

	Chi-Square	DF	Sig.	RMSEA	RMSEA C.I.	CFI	TLI	SRMR
Estonia	14.627	12	0.263	0.019	0.000 - 0.048	0.991	0.983	0.029
Great Britain	41.777	12	0.000	0.062	0.042 - 0.082	0.897	0.820	0.039
Slovenia	2.82	12	0.002	0.050	0.023 - 0.076	0.934	0.884	0.039

Note: Model with covariance between Child-centred factor and ChAttention item. The maximum likelihood with robust standard error estimation method (MLR) was used on weighted data. RMSEA: root mean squared error of approximation; CFI: comparative fit index; TLI: Tucker–Lewis index; SRMR: standardized root mean square residuals. The recommended cut-off for CFI and TLI is 0.95 (or higher), but 0.90 is acceptable. The recommended cut-off for RMSEA and SRMS is 0.06 (or lower), but 0.08 (or lower) is acceptable

Testing the exact MI of the two-factorial model across countries suggested a few deficiencies at the metric level of invariance. The magnitude of change in CFI between the metric and configural models was larger than 0.01 (0.035), thereby indicating that the factor loadings were not equal across the three countries (Table 7). However, changes in RMSEA and SRMR showed a good fit; thus, we can claim to have achieved metric invariance. Nevertheless, the scalar model was not accepted, since all indicators show a significant worsening between the metric and scalar models. Therefore, we conclude that through an exact approach, the metric

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7 As a robustness check, we ran the MGCFA to test measurement invariance using a six-item model (without 'ChAttention') for three listed countries. However, we did not find that this resulted in any substantive change in our findings and the improvement in the model fit was minimal (not shown but available on request).

and configural invariance of the reduced model was achieved among the three countries. The results for the reduced model reveal that the traditional exact MI across the three countries was not achieved at the scalar level. Thus, the exact MI test procedure suggests that mean scores on the scale are not comparable.

Table 7: Model fit indices of the MGCFA testing measurement invariance of the reduced intensive parenting norms scale (seven items) for Estonia, Great Britain and Slovenia

	Chi-Square	DF	CMIN/DF	Sig.	RMSEA (ΔRMSEA)	RMSEA C.I.		CFI (ΔCFI)	TLI	SRMR (ΔSRMR)
Configural	75.378	36	2.094	0.000	0.044	0.030	0.057	0.937	0.889	0.040
Metric	108.473	48	2.260	0.000	0.047 (.003)	0.035	0.059	0.902 (-.035)	0.871	0.060 (.02)
Scalar	239.851	58	4.135	0.000	0.074 (.027)	0.065	0.084	0.705 (-.197)	0,680	0.087 (.027)

Note: Model with covariance between the Child-centred factor and the ChAttention item. The maximum likelihood with robust standard error estimation method (MLR) was used on weighted data. RMSEA: root mean squared error of approximation; CFI: comparative fit index; TLI: Tucker–Lewis index; SRMR: standardized root mean square residuals. The recommended cut-off for CFI and TLI is 0.95 (or higher), but 0.90 is acceptable. The recommended cut-off for RMSEA and SRMS is 0.06 (or lower), but 0.08 (or lower) is acceptable. The magnitude of change in CFI (ΔCFI) ≤ 0.01, change in RMSEA (ΔRMSEA) ≤ 0.015 and change in SRMR (ΔSRMR) ≤ 0.030 (for metric invariance) or 0.010 (for scalar invariance) is suggested by Chen (2007)

With regard to socio-demographic groups, the two-factor model worked better (Table 8). In general, the configural, metric, and scalar models revealed a good fit to the data among all groups, except men, women, and parental status, where scalar invariance was not achieved. Therefore, meaningful comparisons of latent factor means and individual items can be made across educational levels and across parents of children aged under 12 years and others using a two-dimensional model of intensive parenting norms. Yet, the findings suggest that men, women, and parents versus childless individuals interpret individual items somewhat differently. This is in line with the findings of Long et al. (2021), which did not support the MI of the IPAQ for genders. Similarly, Crapo et al. (2021) found support for the MI of certain structures of parental beliefs across gender, but not for others. These differences might be affected by the social construction of gender roles and by gender socialisation (Crapo et al., 2021). However, comparisons of latent factor means and individual items between these groups were found to be problematic.

Table 8: Model fit indices of the MGCFA testing measurement invariance of the reduced intensive parenting norms scale (seven items) for different socio-demographic groups

	Chi-Square	DF	CMIN/DF	Sig.	RMSEA (Δ)	RMSEA C.I.	CFI (Δ)	TLI	SRMR (Δ)
Gender									
Configural	73.549	24	3.065	0.000	0.049	0.037 - 0.062	0.913	0.847	0.040
Metric	82.442	30	2.748	0.000	0.045 (-.004)	0.034 - 0.057	0.908 (-.005)	0.871	0.048 (.008)
Scalar	107.913	35	3.083	0.000	0.049 (.004)	0.039 - 0.060	0.872 (-.036)	0.846	0.061 (.013)
Parental status									
Configural	61.28	24	2.553	0.000	0.043	0.030 - 0.056	0.934	0.885	0.037
Metric	63.226	30	2.108	0.000	0.036 (-.007)	0.023 - 0.048	0.942 (.008)	0.918	0.041 (.004)
Scalar	82.955	35	2.370	0.000	0.04 (.004)	0.029 - 0.051	0.916 (-.026)	0.899	0.053 (.012)
Child under 12									
Configural	51.429	24	2.143	0.001	0.037	0.023 0.050	0.951	0.915	0.034
Metric	54.606	30	1.820	0.004	0.031 (-.006)	0.017 0.044	0.956 (.005)	0.939	0.038 (.004)
Scalar	65.155	35	1.862	0.002	0.032 (.001)	0.019 0.044	0.947 (-.009)	0.936	0.04 (.002)
Education									
Configural	64.003	36	1.778	0.004	0.037	0.022 0.051	0.953	0.918	0.036
Metric	93.543	48	1.949	0.001	0.041 (.004)	0.028 0.053	0.924 (-.029)	0.900	0.054 (.018)
Scalar	116.545	58	2.009	0.009	0.042 (.001)	0.031 0.053	0.902 (-.022)	0.893	0.061 (.007)

Note: Model with covariance between the Child-centred factor and the ChAttention item. The maximum likelihood with robust standard error estimation method (MLR) was used on weighted data. RMSEA: root mean squared error of approximation; CFI: comparative fit index; TLI: Tucker–Lewis index; SRMR: standardized root mean square residuals. The recommended cut-off for CFI and TLI is 0.95 (or higher), but 0.90 is acceptable. The recommended cut-off for RMSEA and SRMS is 0.06 (or lower), but 0.08 (or lower) is acceptable. The magnitude of change in CFI (ΔCFI) ≤ 0.01, change in RMSEA (ΔRMSEA) ≤ 0.015 and change in SRMR (ΔSRMR) ≤ 0.030 (for metric invariance) or 0.010 (for scalar invariance) is suggested by Chen (2007)

4.3 Approximate MI testing of the reduced intensive parenting norms scale

Despite all efforts, a reduced model with scalar invariance among all examined groups has not been found. Since exact MI may be too strict, we applied alignment optimization to test whether the scale will at least be approximately invariant.

The results of alignment optimization are presented in Table 9 (non-invariant parameters are bolded and in parentheses). All non-invariant parameters can be found in the intercepts. Five (12%) parameters are non-invariant between countries, which is considerably less than 25%, a rough cut-off value proposed by Muthén and Asparouhov (2014). The most problematic items between countries appeared to be 'ChAttention' (non-invariant in all countries); 'ChTalents' is non-invariant in Slovenia and 'BasicNeeds' is non-invariant in Estonia. Between men and women, no parameters are non-invariant and between parents and childless individuals, two (7%) parameters are non-invariant (in item 'Activities'). These results indicate that the reduced scale is approximately invariant across countries, gender, and parental status and aligned factor means can be compared across these groups.

Table 9: Approximate measurement invariance (noninvariance for groups) of the reduced intensive parenting norms scale (seven items) across countries and different socio-demographic groups

Short Labels	Across countries	Across men and women	Across parental status
	Intercepts/Thresholds	Intercepts/Thresholds	Intercepts/Thresholds
FamRoutine	1 2 3	1 2	0 1
ChAttention	(1) (2) (3)	1 2	0 1
Activities	1 2 3	1 2	(0) (1)
PaWorry	1 2 3	1 2	0 1
ChTalents	1 2 (3)	1 2	0 1
BasicNeeds	(1) 2 3	1 2	0 1
PaLife	1 2 3	1 2	0 1
	Loadings for F1	Loadings for F1	Loadings for F1
ChAttention	1 2 3	1 2	0 1
Activities	1 2 3	1 2	0 1
PaWorry	1 2 3	1 2	0 1
ChTalents	1 2 3	1 2	0 1
	Loadings for F2	Loadings for F2	Loadings for F2
FamRoutine	1 2 3	1 2	0 1
BasicNeeds	1 2 3	1 2	0 1
PaLife	1 2 3	1 2	0 1

Note: Alignment optimization on weighted data, type=mixture, estimator = MLR, alignment=fixed. The groups in which this current parameter is NOT invariant even after alignment are bolded and in parentheses. The parameters are compared across groups using a convenient confidence level of 95%. Countries: 1=EE, 2=GB, 3=SL; Gender: 1=men, 2=women; Parental status: 0=childless, 1=parents

5. Conclusion and discussion

Building on Gauthier et al. (2021), this study assessed whether an intensive parenting norms scale using ESS CRONOS conveys the same implications across different cultural and social contexts. We applied multi-group confirmatory factor analysis and alignment optimization to assess the MI of intensive parenting norms across three country contexts (Estonia, Slovenia, and Great Britain) as well as across gender, education, parental status, and child's age. Establishing MI is indispensable for reliable and valid comparisons of a latent phenomenon.

The findings of this study do not support the MI of the original four-factor intensive parenting norms scale, which included child-centredness, a focus on stimulating a child's development, expert guidance, and parental responsibility dimensions (Gauthier et al., 2021) across the three explored countries and socio-demographic groups. The present findings do not confirm an assertion that these dimensions are interpreted similarly across the three countries investigated. This is consistent with Gauthier et al.'s (2021) original finding that items measuring parenting norms form different latent structures across countries, especially in

Estonia. The lack of invariance of the original scale between explored socio-demographic groups suggests that some items measuring parenting norms might be understood differently across social groups. Yet, this discrepancy might stem from cultural differences between countries because these tests were estimated on pooled data.

To sum up, our results suggest that the original intensive parenting norms scale is not suitable for making cross-country comparisons, nor for making within socio-demographic groups comparisons on pooled data. All such comparisons should be interpreted with caution because they might lead to misleading conclusions about the groups' differences or similarities. As the measurement properties of the original scale are not consistent across gender, education, and parental status, observed group differences might be driven by measurement differences rather than actual group characteristics.

Nevertheless, we identified the reduced invariant measurement model that encompasses two core dimensions of intensive parenting norms: stimulation and child-centredness. Using the MGCFA, we established both configural and metric MI among all examined socio-demographic groups and country contexts with a reduced scale. However, even the reduced model has not achieved scalar MI across country contexts, genders, and parental status. Using alignment optimization, the approximate MI of the two-factorial model across countries, gender, and parental status was confirmed, which indicates that meaningful comparisons can be made on aligned factor means. These results confirmed that the approach of approximate MI, which assumes that a small degree of non-invariance between parameters is acceptable, leads to better results.

Therefore, the two-factor model might be useful to study the social variation of intensive parenting norms across the three examined countries and social groups, as the latent constructs involved have the (approximately) same meaning across country contexts, genders, education levels and parental status. The reduced scale captures the basic view of resource intensiveness and parental responsibility for children's development, as emphasised by Hays (1996), and corresponds to previous operationalisations of intensive parenting norms (Liss et al., 2013; Loyal et al., 2017). This is also in line with the concept of 'concerted cultivation' parenting (Ishizuka, 2019; Lareau, 2011).

These findings have several implications for future research. First, this study underscores that it's essential to address measurement invariance issues when exploring intensive parenting norms to ensure accurate and meaningful group comparisons. Therefore, it is important to use multi-item scales to measure attitudes to parenting not to rely on single-item measures that cannot be controlled for measurement errors.

From a substantial viewpoint, the finding that certain dimensions of parenting norms are not comparable between the countries and social groups is important. It indicates that certain dimensions of parenting norms might be constructed differently across social groups or social contexts or that the measurement processes in these groups or contexts are not the same. Therefore, further studies would be welcome to clarify the reasons for a lack of item invariance norms across different country contexts and socio-demographic groups. For instance, qualitative approaches, such as cognitive interviews, might help identify possible confusion in item wording, specific implications of cultural items, or different response patterns (Robert et al., 2006).

At the individual level, individuals may interpret these items using different frameworks based on their socioeconomic resources, cultural values, social construction of gender roles, parental experiences etc. This is partially in line with previous qualitative research that has revealed different constructions of good mothering and time availability for children based on a mother's working status (Johnston & Swanson, 2006). This also aligns with previous research indicating concerns about the MI of some dimensions of parental beliefs between genders. Such disparities might be attributed to distinct gender role socialization processes. As a result, women might internalize more extensive childcare responsibilities and approach parenting norms with different reference frames compared to men (Crapo et al., 2021; Long et al., 2021).

At the country level, social and cultural factors such as the availability of formal childcare, female labour market participation in a country, and broader societal value orientations, including gender role attitudes, might account for distinct response patterns regarding parenting norms, even in the absence of real differences in the underlying construct (Loyal et al., 2017; Seddig & Lomazzi, 2019).

The varying interpretations of items across diverse cultural and social backgrounds might be explained by several mechanisms (Braun, 2009; Seddig & Lomazzi, 2019). Firstly, ambiguity-based framing effects arise when an item lacks specificity. Respondents from different social backgrounds or country contexts might tend to fill these gaps in information with their context-specific knowledge; hence the item might acquire different meanings in different contexts. Secondly, schema-based framing effects emerge when some components of an item trigger associations that were not intended, often tied to different context backgrounds. For instance, depending on the schema used, it might be unclear whether disagreeing with a statement

automatically signifies agreement with the opposite viewpoint. When respondents don't align with the opposite stance either, they often resort to selecting the middle category. As a result, the middle category takes on an additional role, beyond just representing a moderate standpoint or no opinion (Braun, 2009).

Hence, the non-invariance of some items underscores the need for a nuanced and contextually sensitive approach to the measurement of parenting norms. This could involve developing measures that provide more specifications and are less ambiguous. In particular, our findings reveal that items related to the emphasis on constant parental availability, attention to children, and prioritisation of children's needs over those of parents might be considered ambiguous with regard to the nature and the scope of availability and its situational context. The availability might be interpreted as referring to constant physical presence with their children or as being emotionally or mentally available when needed. This perception might vary based on the child's age. Respondents might question what situations or circumstances require parents to be available (any instance where the child desires parental attention or when needed but not necessarily in every moment).

Additionally, more conceptual work is required to identify the items that measure the perspectives on expert advice on parenting, as the reference to expertise on how to parent is considered a prominent feature of contemporary parenting culture (Lee, 2014; Ramaekers & Suissa, 2012; Wall, 2018). This attention to expert advice is associated with assumptions that a child's experience in early infancy has lifelong implications and that parents should manage risks to ensure appropriate child development with expert guidance (Hays, 1996; Lee, 2014; Wall, 2018). The present findings suggest that items related to expert guidance and parental responsibility might be conceptualised differently according to gender and education as well as by parents and non-parents. In particular, the item contrasting listening to the advice of professionals and that of family and friends was unspecific, which led to varying interpretations from respondents. In contrast, qualitative research has indicated more complex links between parenting choices and expert knowledge and suggested that parents interpret, challenge, and reconfigure expertise to rationalise their parenting choices and juggle expert guidance from various sources with that of their peers or families (Faircloth, 2010; Hulen, 2021; Romagnoli & Wall, 2012; Russell, 2015). Therefore, disagreement with the statement "It is best that parents listen to the parenting advice of professionals rather than simply rely on family and friends" might imply both refusal of professional advice or valuing both professional and informal advice.

In particular, measuring expectations regarding expert advice could reveal the extent to which parenting is considered a skill set that has to be learned and acquired (rather than one that exists through tacit knowledge or instinct) and whether parents are expected to seek expert support to acquire these skills.

This study is not without its limitations. The CRONOS data sample sizes are rather small, and data were collected online only in three countries. Therefore, this research should be considered a starting point for further analysis of a larger set of countries to assess the generalisability of the concept of intensive parenting norms across more cultural and institutional contexts. However, studies assessing CRONOS data quality suggest that their representativeness is not pronouncedly divergent from the regular face-to-face interviews conducted in the ESS, not from the target population, except for individuals aged 70 years and older and those with lower levels of education who are underrepresented (Bottoni and Fitzgerald 2021; Maslovskaya and Lugtig 2022).

Overall, the present study emphasises that the MI of parenting norms should not be assumed when exploring differences, predictors, or consequences of endorsement of intensive parenting norms. Therefore, meaningful comparisons of parenting norms across contexts require the assessment of the MI of this construct. We hope these findings inspire further exploration of parenting norms and the development of quantitative measures of parenting norms across different social groups in future cross-country comparative research.

Acknowledgments

Data availability statement

In this study, we used CRONOS ESS data Wave 2, edition 1.1. (2018). NSD—Norwegian Centre for Research Data, Norway—Data Archive and Distributor of CRONOS data for ESS ERIC. These data are publicly available for not-for-profit purposes at https://www.europeansocialsurvey.org/data/download_cronos.html.

References

Amato, P. R., & Fowler, F. (2002). Parenting practices, child adjustment, and family diversity. *Journal of Marriage and Family, 64*(3), 703–716. https://www.jstor.org/stable/3599936 [retrieved March 14, 2022]

Asparouhov, T., & Muthén, B. (2014). Multiple group factor analysis. *The American Statistician, 37*(4), 326. https://doi.org/10.2307/2682781

Braun, M. (2009). The role of cultural contexts in item interpretation: The example of gender roles. In *The International Social Survey Programme 1984-2009: Charting the Globe* (pp. 395–407). https://doi.org/10.4324/9780203880050

Byrne, B. M. (2008). Testing for multigroup equivalence of a measuring instrument: A walk through the process. *Psicothema, 20*(4), 872–882. http://www.uniovedo.net/reunido/index.php/PST/article/view/8744 [retrieved March 14, 2022]

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(3), 464–504. https://doi.org/10.1080/10705510701301834

Cieciuch, J., Davidov, E., & Schmidt, P. (2019). How to obtain comparable measures for cross-national comparisons. *Kölner Zeitschrift Für Soziologie Und Sozialpsychologie, 71*(S1), 157–186. https://doi.org/10.1007/s11577-019-00598-7

Craig, L., Powell, A., & Smyth, C. (2014). Towards intensive parenting? Changes in the composition and determinants of mothers' and fathers' time with children 1992-2006. *British Journal of Sociology, 65*(3), 555–579. https://doi.org/10.1111/1468-4446.12035

Crapo, J. S., Miller, J. A., Bradford, K., & Higginbotham, B. J. (2021). Mothering and fathering, or just parenting: measurement invariance of parental beliefs by gender. *Journal of Family Issues, 42*(12), 2782–2810. https://doi.org/10.1177/0192513X20988772

Davidov, E., Meuleman, B., Cieciuch, J., Schmidt, P., & Billiet, J. (2014). Measurement equivalence in cross-national research. *Annual Review of Sociology, 40.* https://doi.org/10.1146/annurev-soc-071913-043137

Dotti Sani, G. M., & Treas, J. (2016). Educational gradients in parents' child-care time across countries, 1965–2012. *Journal of Marriage and Family, 78*(4), 1083–1096. https://doi.org/10.1111/jomf.12305

Dyer, W. J. (2015). The vital role of measurement equivalence in family research. *Journal of Family Theory & Review, 7*(4), 415–431. https://doi.org/10.1111/jftr.12115

England, P., & Srivastava, A. (2013). Educational differences in US parents' time spent in child care: The role of culture and cross-spouse influence. *Social Science Research, 42*(4), 971–988. https://doi.org/10.1016/j.ssresearch.2013.03.003

Fagan, J., Day, R., Lamb, M. E., & Cabrera, N. J. (2014). Should researchers conceptualize differently the dimensions of parenting for fathers and mothers? *Journal of Family Theory & Review, 6*(4), 390–405. https://doi.org/10.1111/jftr.12044

Faircloth, C. (2010). What science says is best: Parenting practices, scientific authority and maternal identity. *Sociological Research Online, 15*(4). https://doi.org/10.5153/sro.2175

Faircloth, C., Hoffman, D. M., & Layne, L. L. (2013). *Parenting in global perspective.* Taylor & Francis. https://doi.org/10.4324/9780203103906

Forbes, L. K., Donovan, C., & Lamar, M. R. (2020). Differences in intensive parenting attitudes and gender norms among U. S. mothers. *The Family Journal, 28*(1), 63–71. https://doi.org/10.1177/1066480719893964

Gauthier, A. H., Bryson, C., Fadel, L., Haux, T., & Mynarska, M. (2021). Exploring the concept of intensive parenting in a three-country study. *Demographic Research, 44*(13). https://doi.org/10.4054/DemRes.2021.44.13

Gauthier, A. H., & de Jong, P. W. (2021). Costly children: the motivations for parental investment in children in a low fertility context. *Genus, 77*(1). https://doi.org/10.1186/s41118-020-00111-5

Gauthier, A. H., Smeeding, T. M., & Furstenberg, F. J. (2004). Are parents investing less time in children ? Trends in selected industrialized countries. *Population and Development Review, 30*(4), 647–671. https://doi.org/10.1111/j.1728-4457.2004.00036.x

Hays, S. (1996). *The cultural contradictions of motherhood*. Yale University Press.

Hulen, E. (2021). What is natural is best: A qualitative exploration of women's engagement in attachment parenting. *Journal of Family Issues*, 1–13. https://doi.org/10.1177/0192513X21993885

Ishizuka, P. (2019). Social class, gender, and contemporary parenting standards in the United States: Evidence from a national survey experiment. *Social Forces, 98*(September), 31–58. https://doi.org/10.1093/sf/soy107

Johnston, D. D., & Swanson, D. H. (2006). Constructing the "good mother": The experience of mothering ideologies by work status. *Sex Roles, 54*(7–8), 509–519. https://doi.org/10.1007/s11199-006-9021-3

Kalil, A., Ryan, R., & Corey, M. (2012). Diverging destinies: Maternal education and the developmental gradient in time with children. *Demography, 49*(4), 1361–1383. https://doi.org/10.1007/s13524-012-0129-5

Lareau, A. (2011). *Unequal Childhoods: Class, Race, and Family Life*. University of California Press. https://doi.org/10.1525/9780520949904

Lee, E. (2014). Experts and parenting culture. In E. Lee, J. Bristow, C. Faircloth, & J. Macvarish (Eds.), *Parenting culture studies* (pp. 51–75). Springer. https://doi.org/10.4324/9780203103906

Leitgöb, H., Seddig, D., Asparouhov, T., Behr, D., Davidov, E., De Roover, K., Jak, S., Meitinger, K., Menold, N., Muthén, B., Rudnev, M., Schmidt, P., & van de Schoot, R. (2022). Measurement invariance in the social sciences: Historical development, methodological challenges, state of the art, and future perspectives. *Social Science Research, 110*, 102805. https://doi.org/10.1016/j.ssresearch.2022.102805

Liss, M., Schiffrin, H. H., Mackintosh, V. H., Miles-McLean, H., & Erchull, M. J. (2013). Development and validation of a quantitative measure of intensive parenting attitudes. *Journal of Child and Family Studies, 22*(5), 621–636. https://doi.org/10.1007/s10826-012-9616-y

Lomazzi, V. (2018). Using alignment optimization to test the measurement invariance of gender role attitudes in 59 countries. *Methods, Data, Analyses., 12*(1), 1–27. https://doi.org/10.12758/mda.2017.09

Long, H., Prikhidko, A., Bendeck, A. C., & Yumusak, S. (2021). Measurement invariance of the intensive parenting attitudes questionnaire across gender and race. *Journal of Family Psychology, 35*(7), 1027–1032. https://doi.org/10.1037/fam0000889

Loyal, D., Sutter Dallay, A.-L., & Rascle, N. (2017). Intensive mothering ideology in France: A pilot study. *Encephale, 43*(6), 564–569. https://doi.org/10.1016/j.encep.2017.08.002

Loyal, D., Sutter Dallay, A. L., & Rascle, N. (2021). Validity of the measure of intensive mothering ideology (MIMI). *Encephale, 47*(1), 4–9. https://doi.org/10.1016/j.encep.2020.05.019

Luong, R., & Flake, J. K. (2022). Measurement invariance testing using confirmatory factor analysis and alignment optimization: A tutorial for transparent analysis planning and reporting. *Psychological Methods, 17*(3). https://doi.org/10.1037/met0000441

Muthén, B., & Asparouhov, T. (2012). Bayesian structural equation modelling: a more flexible representation of substantive theory. *Psychological Methods, 17*(3), 313–335. https://doi.org/doi.org/10.1037/a0026802

Muthén, B., & Asparouhov, T. (2013). New methods for the study of measurement Invariance with many groups. *Mplus Web Notes*, 1–60. https://www.statmodel.com/download/PolAn.pdf [retrieved May 25, 2022]

Muthén, B., & Asparouhov, T. (2014). IRT studies of many groups: the alignment method. *Frontiers in Psychology, 5*(978), 1–7. https://doi.org/10.3389/fpsyg.2014.00978

Mynarska, M., & Rytel, J. (2020). Fertility desires of childless Poles: Which childbearing motives matter for men and women? *Journal of Family Issues, 41*(1), 7–32. https://doi.org/10.1177/0192513X19868257

Nomaguchi, K., & Milkie, M. A. (2020). Parenthood and well-being: A decade in review. *Journal of Marriage and Family, 82*(1), 198–223. https://doi.org/10.1111/jomf.12646

O'Brien, K. M., Yoo, S., Kim, Y. H., Cho, Y., & Salahuddin, N. M. (2020). The good mothering expectations scale : An international instrument development study. *The Counseling Psychologist, 48*(2), 162 –190. https://doi.org/10.1177/0011000019889895

Ramaekers, S., & Suissa, J. (2012). What all parents need to know? Exploring the hidden normativity of the language of developmental psychology in parenting. *Journal of Philosophy of Education, 46*(3), 352–369. https://doi.org/10.1111/j.1467-9752.2012.00866.x

Rhemtulla, M., Brosseau-Liard, P. É., & Savalei, V. (2012). When can categorical variables be treated as continuous? A comparison of robust continuous and categorical SEM estimation methods under suboptimal conditions. *Psychological Methods, 17*(3), 354–373. https://doi.org/10.1037/a0029315

Rizzo, K. M., Schiffrin, H. H., & Liss, M. (2013). Insight into the parenthood paradox: Mental health outcomes of intensive mothering. *Journal of Child and Family Studies, 22*(5), 614–620. https://doi.org/10.1007/s10826-012-9615-z

Robert, C., Lee, W. C., & Chan, K. Y. (2006). An empirical analysis of measurement equivalence with the INDCOL measure of individualism and collectivism: Implications for valid cross-cultural inference. *Personnel Psychology, 59*(1), 65–99. https://doi.org/10.1111/j.1744-6570.2006.00804.x

Romagnoli, A., & Wall, G. (2012). 'I know I'm a good mom': Young, low-income mothers' experiences with risk perception, intensive parenting ideology and parenting education programmes. *Health, Risk & Society, 14*(3), 273–289. https://doi.org/10.1080/13698575.2012.662634

Russell, N. U. (2015). Babywearing in the age of the internet. *Journal of Family Issues, 36*(9), 1130–1153. https://doi.org/10.1177/0192513X14533547

Schiffrin, H. H., Godfrey, H., Liss, M., & Erchull, M. J. (2015). Intensive parenting: Does it have the desired impact on child outcomes? *Journal of Child and Family Studies, 24*(8), 2322–2331. https://doi.org/10.1007/s10826-014-0035-0

Schiffrin, H. H., Liss, M., Geary, K., Miles-McLean, H., Tashner, T., Hagerman, C., & Rizzo, K. (2014). Mother, father, or parent? College students' intensive parenting attitudes differ by referent. *Journal of Child and Family Studies, 23*(6), 1073–1080. https://doi.org/10.1007/s10826-013-9764-8

Seddig, D., & Lomazzi, V. (2019). Using cultural and structural indicators to explain measurement noninvariance in gender role attitudes with multilevel structural equation modeling. *Social Science Research, 84*, 102328. https://doi.org/10.1016/j.ssresearch.2019.102328

Shaffer, A., Rodriguez, V. J., Kolko, D. J., Pilkonis, P. A., & Lindhiem, O. (2022). Measurement invariance in the Alabama parenting questionnaire: Implications for culturally inclusive parenting research. *Journal of Family Issues, 43*(8), 2040–2062. https://doi.org/10.1177/0192513X211030022

Shirani, F., Henwood, K., & Coltart, C. (2012). Meeting the challenges of intensive parenting Culture: Gender, risk management and the moral parent. *Sociology, 46*(1), 25–40. https://doi.org/10.1177/0038038511416169

Svetina, D., Rutkowski, L., & Rutkowski, D. (2020). Multiple-group invariance with categorical outcomes using updated guidelines: An illustration using Mplus and the lavaan/semTools packages. *Structural Equation Modeling, 27*(1), 111–130. https://doi.org/10.1080/10705511.2019.1602776

van de Schoot, R., Kluytmans, A., Tummers, L., Lugtig, P., Hox, J., & Muthén, B. (2013). Facing off with Scylla and Charybdis: A comparison of scalar, partial, and the novel possibility of approximate measurement invariance. *Frontiers in Psychology, 4*, 1–15. https://doi.org/10.3389/fpsyg.2013.00770

van de Schoot, R., Lugtig, P., & Hox, J. (2012). Developmetrics. A checklist for testing measurement invariance. *European Journal of Developmental Psychology, 9*(4), 486–492. https://doi.org/10.1080/17405629.2012.686740

Villar, A., Sommer, E., Finnøy, D., Gaia, A., Berzelak, N., & Bottoni, G. (2018). *CROss-National Online Survey (CRONOS) panel: Data and documentation user guide.* 654221. http://www.europeansocialsurvey.org/docs/cronos/CRONOS_user_guide_e01_1.pdf [retrieved May 25, 2022]

Wall, G. (2018). 'Love builds brains': representations of attachment and children's brain development in parenting education material. *Sociology of Health and Illness, 40*(3), 395–409. https://doi.org/10.1111/1467-9566.12632

Walls, J. K., Helms, H. M., & Grzywacz, J. G. (2016). Intensive mothering beliefs among full-time employed mothers of infants. *Journal of Family Issues, 37*(2), 245–269. https://doi.org/10.1177/0192513X13519254

Zercher, F., Schmidt, P., Cieciuch, J., & Davidov, E. (2015). The comparability of the universalism value over time and across countries in the European Social Survey: Exact vs. approximate measurement invariance. *Frontiers in Psychology, 6*(733), 1–11. https://doi.org/10.3389/fpsyg.2015.00733

Information in German

Deutscher Titel

Auf dem Weg zu einer Konzeptualisierung der Normen der intensiven Elternschaft: Eine Prüfung der exakten und approximativen Messinvarianz in verschiedenen sozialen Kontexten und Länderkontexten

Zusammenfassung

Fragestellung: Die Studie untersucht die Messinvarianz (Measurement Invariance; MI) der Normen der intensiven Elternschaft in drei europäischen Ländern sowie in Bezug auf Gender, Bildung und Elternstatus.

Hintergrund: In den letzten Jahrzehnten haben Normen der intensiven Elternschaft zunehmend an Dominanz gewonnen. Allerdings gibt es für Normen der intensiven Elternschaft kein Messmodell im Rahmen großer sozialer Erhebungen, und es ist nicht bekannt, ob diese Normen in verschiedenen sozialen und kulturellen Kontexten die gleiche Bedeutung haben.

Methode: Diese Studie stützt sich auf Daten aus dem European Social Survey Cross-national Online Survey Panel (2017), das in Estland, Slowenien und Großbritannien durchgeführt wurde. Es wurde eine Mehr-Gruppen Konfirmatorische Faktorenanalyse und Alignment-Optimierung (Alignment Optimization; AM) durchgeführt, um die exakte und approximative MI von Normen der intensiven Elternschaft in diesen drei Ländern und sozialen Kontexten zu bewerten.

Ergebnisse: Da das zuvor vorgeschlagene Vier-Faktoren-Modell der Normen der intensiven Elternschaft nur unzureichend passte, wird ein überarbeitetes Zwei-Faktoren-Modell mit den Dimensionen Stimulierung und Kindzentrierung vorgeschlagen – unter Ausschluss der Elemente, die fachliche Anleitung und elterliche Verantwortung messen. Bei dem Zwei-Faktoren-Modell wurde skalare Invarianz zwischen den Bildungsgruppen und den Eltern von Kindern unter 12 Jahren und anderen erreicht. Allerdings wurde zwischen Ländern, Gender und elterlichem Status lediglich metrische Invarianz erreicht. Die Ergebnisse der Alignment-Optimierung legen nahe, dass die reduzierte Skala über alle untersuchten Gruppen hinweg annähernd invariant ist.

Schlussfolgerung: Die Ergebnisse der Studie verdeutlichen, dass bei Erziehungsnormen keine MI unterstellt werden darf. Die Studie gibt Einblicke in die Konzeptualisierung der Normen der intensiven Elternschaft und legt Empfehlungen für zukünftige Forschung und Entwicklungen in Bezug auf die Messung dar.

Schlagwörter: intensive Elternschaft, Messinvarianz, Alignment-Optimierung, European Social Survey, länderübergreifender Vergleich, Gender, Bildung

Jana Klímová Chaloupková: https://orcid.org/0000-0003-4703-514X

Kristýna Pospíšilová: https://orcid.org/0000-0001-6788-5980