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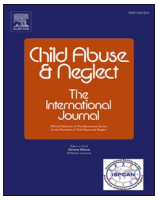

Psychometric properties of the parenting belief scale in a multi-country sample of parents from high-income countries

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ABSTRACT

Background: Parents' beliefs about how private/public their parenting role is and their acceptability of the use of corporal punishment as a disciplinary measure have been associated with how parents raise their children and their willingness to seek support. However, there are no reliable and valid instruments measuring these beliefs.
Objective: This study evaluated the psychometric properties of the Parenting Belief Scale, a self-reported brief measure targeting parents' perception of parenting as a private concern and their attitudes towards the use of corporal punishment.
Participants and setting: Participants were 6949 parents from several high-income countries (i.e., Australia, Belgium, Canada, Germany, Hong Kong, Australia, and the UK) who completed the International Parenting Survey, an online cross-sectional survey focused on parents' self-report of their parenting, children, and family.
Methods: This study evaluated the internal consistency, factor structure (i.e., exploratory and confirmatory factor analyses), and convergent and discriminant validity of the Parenting Belief Scale.
Results: Findings indicated that this scale was a relatively reliable measure to evaluate parents' perceived privacy in their role and acceptability of corporal punishment. A two-factor structure was confirmed by both exploratory and confirmatory factor analyses. Correlations with scales of parenting practices supported the convergent and discriminant validity of the Parenting Belief Scale.
Conclusions: This study supported the use of the Parenting Belief Scale across high-income countries to evaluate parenting beliefs in influencing parenting practices and parents' help-seeking behaviours.

1. Introduction

Worldwide, more than two in three children have experienced violent discipline by parents at home in the last month (UNICEF, 2023). In Australia, where corporal punishment is legal, nationally-representative data indicates that 62.5 % of Australians have been

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exposed to corporal punishment and 53.7 % of parents have used corporal punishment (Haslam et al., 2023). Although many countries have endorsed the Convention on the Rights of the Child (United Nations, 1991), only one third of countries worldwide have banned corporal punishment (Global Partnership to End Violence Against Children, 2021). Knowledge about the beliefs and attitudes of parents to physical discipline and parenting in general is needed to enhance policy and practice initiatives aimed at promoting child wellbeing and reducing violence towards children. This study introduces and validates the Parenting Belief Scale using a multi-country sample and outlines the implications of parenting beliefs.

Corporal punishment refers to physical punishment in the form of physical force towards a child to cause pain but not injury, which includes smacking (Calhoun et al., 2019). It is influenced by a number of factors including parents' attitudes towards the use of coercive strategies (Perron et al., 2014), perceived social acceptability of using these strategies (Latham et al., 2017), and country laws about corporal punishment (Lansford et al., 2017). Corporal punishment is a risk factor associated with poorer child development because it has been linked to child adverse outcomes in the short and long term (Cuartas, 2021; Durrant & Ensom, 2017; Gershoff & Grogan-Kaylor, 2016). Meta-analyses have linked corporal punishment to a wide range of negative outcomes for children and their later development, including internalising and externalising behaviours, mental health problems, antisocial behaviour, and increased risk of other types of child maltreatment (Ferguson, 2013; Gershoff & Grogan-Kaylor, 2016). Furthermore, parents who reported that they had experienced harsh and abusive parenting as a child were more likely to use corporal punishment (including smacking) and anger towards their children (Baydar et al., 2003; Wang et al., 2018), indicating that violence against children is transmitted across generations. The intergenerational transmission of corporal punishment has also been supported by a study finding that parents' beliefs supporting corporal punishment and its use were significantly related to their adolescents' reports of beliefs supporting the acceptability of corporal punishment (Afifi et al., 2022). There is good evidence suggesting that corporal punishment is also a risk factor for more severe forms of physical child abuse (Fulu et al., 2017).

Given that the elimination of violence against children aligns with the 2023 Agenda for Sustainable Development (World Health Organization, 2020), and the continuing pervasive use of corporal punishment across many communities, further actions are needed to better understand parents' use of corporal punishment and other types of coercive parenting, and protect children from coercive discipline strategies. In order to advance international efforts to eliminate violence against children (Global Partnership to End Violence Against Children, 2021), it is essential that parents are supported to reduce their use of coercive strategies, such as corporal punishment. Data about the beliefs and opinions of parents is needed to determine if policy or legislative reform is needed and to predict parental reactions to proposed policy changes.

Theories of child maltreatment have shown that parents' attitudes towards corporal punishment influence their likelihood of using them for discipline and behavioural control. For example, social cognitive theory (Bandura, 1986) suggests that parents who have learnt from their parents that corporal punishment is appropriate, effective, and necessary are more likely to find it acceptable and use it if needed (Deater-Deckard et al., 2003; Wang et al., 2018). According to social processing theory (Milner, 1993), parents' pre-existing beliefs are the gateway for other processes leading to the parental disciplinary response, i.e., using corporal punishment or alternative positive strategies (Camilo et al., 2020). The ecological model of corporal punishment (Belsky, 1980) goes beyond the individual factors (i.e., parents beliefs) by including micro- (i.e., family system), *exo*- (i.e., work and neighbourhood), and macro-systems (i.e., cultural attitudes and values, society's general attitude towards children, policies). Thus, the ecological model also includes the relationship between parents' beliefs about their own parenting and what is promoted in the public space at the societal level (Austin et al., 2020; Cicchetti & Lynch, 1993).

Furthermore, empirical evidence of child maltreatment has shown that parents who endorsed attitudes supporting the use of corporal punishment were more likely to actually use it towards their children, including psychological and physical violence (Dănilă et al., 2022; Lansford et al., 2014; Perron et al., 2014; Plessy et al., 2018). Furthermore, parents who find it acceptable to use corporal punishment and reported that they have used it with their children were also more likely to experience other difficulties with their parenting practices such as poor monitoring and inconsistent discipline (Plessy et al., 2018). Parents' level of belief in the acceptability and use of corporal punishment predicted their children's symptoms of depression and involvement in violent acts at school (Chen et al., 2021).

It is especially important to understand parents' beliefs about corporal punishment because beliefs are likely to underpin parents' continued use of corporal punishment with their children, despite the adverse outcomes reported in the literature for child development in the short and long term (Calhoun et al., 2019; Gershoff & Grogan-Kaylor, 2016). Australian data suggests that although most parents do not believe corporal punishment is necessary to raise children, more than half have used it (Haslam et al., 2023; Havighurst et al., 2023). Little is known about why parents use corporal punishment, particularly if they do not view it as necessary. Insight about parental beliefs about the acceptability of corporal punishment can help address this knowledge gap. For example, if parents do not believe a particular practice such as corporal punishment is necessary, but they perceive it as acceptable, they may just view it as another potentially useful strategy. Parents' beliefs about the acceptability of corporal punishment, separate to beliefs about its necessity, are important because they influence the quality of the parent-child relationship, their children's adjustment over the lifespan, and parents' help-seeking behaviours (Bornstein et al., 2018; Gonzalez et al., 2021; Johnston et al., 2018). Parents who have positive attitudes towards corporal punishment are more likely to use such strategies, placing their children at risk for parental abusive behaviour (Dănilă et al., 2022). Therefore, evaluating parenting beliefs may help to better understand why parents endorse coercive strategies and can contribute to preventing violence towards children by their parents.

Apart from parents' endorsement of coercive strategies, it is important to consider how they conceptualise their parenting role in relation to the broader context. Parenting is often conceptualised as a community responsibility where parents and their children are in continuous interactions with their social-ecological environment, i.e., extended family, school, suppporting services, and society (Finan & Yap, 2021). However, many parents also perceive parenting as an intimate, private role (Higgins et al., 2019; Smith et al.,

2015), which may prioritise a parent-centrered approach to their parenting role rather than prioritising the child's best interest (Barnett et al., 2010). This perception needs further attention because it may limit parents' engagement in services and their responses to broad policy and practice initiatives. Some studies have shown that parents who were concerned about their privacy were less likely to share their concerns and engage in appropriate support. For example, parents who were less willing to discuss their family topics with other parents and program facilitators were less likely to intend to participate in a parenting intervention (Patel et al., 2011). Furthermore, Heinrichs et al. (2005) identified that most parents who did not participate in an intervention indicated that they were concerned about someone intruding into private matters, so they were less likely to engage to parenting support. Thus, valuing privacy in the parenting role may prevent parents from considering others and parenting interventions as a source of support. If corporal punishment is removed from the repertoire of strategies used by parents to deal with their children's behaviour, parents will need access to alternative strategies through appropriate support, and their willingness to consider and engage with this support is essential. Furthermore, practitioners and researchers campaigning for legislative reform may not be viewed favourably or may even be opposed if parents view this as intrusive because they view parenting as private. This is concerning because the Convention on the Rights of the Child also established that states are responsible for providing appropriate support to parents to fulfill their role to their best capacity for the best of interest of their children (United Nations, 1991). Rather than having competing roles, it seems that government agencies and advocates need to work collaboratively with parents to make sure that children have the best supportive environment for their development from a public health perspective (Higgins et al., 2019), moving towards a collaborative effort to place children and their rights at the centre.

Despite the relevance of targeting parents' beliefs (i.e., towards corporal punishment and parenting), there is a limited availability of reliable and valid measures of parenting beliefs more broadly. In a review of parenting measures, Duppong-Hurley et al. (2014) identified that most measures focused on behavioural indicators, whereas the cognitive component of parenting practices were covered less often. They reported that only seven measures of the 25 included evaluated parents' beliefs related to their motivations, general views about their children, and satisfaction with their role of parent. However, measures assessing attitudes towards both coercive disciplining practices and parenting as a public/private role are not available. Furthermore, some measures of attitudes towards corporal punishment are available (Anderson et al., 2006; Deater-Deckard et al., 2003; Durrant et al., 2020; Graziano et al., 1992), but private/public parenting has only been measured as a barrier to participation in parenting programs (Heinrichs et al., 2005; Patel et al., 2011).

The Parenting Belief Scale (Farruggia, 2009) is a brief measure designed to assess two aspects of parents' beliefs: (i) that parenting is a private matter; and (ii) beliefs about the acceptability of corporal punishment. The measure has been widely used and has been shown to have good internal consistency (Gonzalez et al., 2021; Morawska et al., 2017; Perron et al., 2014). To the best of our knowledge, however, no research has empirically examined other psychometric properties of the scale either in general or across countries. Given the Parenting Belief Scale is a potentially important tool to understand parenting practices, especially corporal punishment, it is important to establish the scale's psychometric properties. Although this instrument does not have an explicit theoretical basis, existing theories of child maltreatment (e.g., social cognitive theory (Bandura, 1986), social processing theory (Milner, 1993), and ecological model (Belsky, 1980)) have highlighted the link between parents' beliefs and their potential use of corporal punishment as a disciplinary measure. Additionally, evidence indicates that the beliefs targeted in this scale have also been linked to coercive parenting strategies (Dănilă et al., 2022; Lansford et al., 2014; Perron et al., 2014; Plessy et al., 2018). However, most instruments in child maltreatment research have evaluated parents' attitudes towards corporal punishment (Camilo et al., 2020; Dănilă et al., 2022), but parents' perception of their interactions with the larger social context have been usually underexplored (Camilo et al., 2020). Thus, it is important to evaluate the validity of this instrument to provide further evidence of its psychometric properties and potential uses in research and clinical settings.

The current study sought to evaluate the psychometric properties of the Parenting Belief Scale in an international sample of parents by examining internal consistency, factor structure, and convergent and discriminant validity across several high-income countries. We used a large dataset to randomly draw two sub-samples to examine psychometric properties (i.e., exploratory factor analysis, EFA, and confirmatory factor analysis, CFA). We posed four hypotheses. First, based on the measure's design and established reliability, we hypothesised a two-factor structure (i.e., Parenting as a Private Concern and Acceptability of Corporal Punishment). Second, we predicted that the measure would display structural invariance (i.e., have the same two factor structure) across countries. Third, we predicted that the Parenting Belief Scale would show good reliability across countries. Fourth, we predicted the measure would have convergent validity where the Acceptability of Corporal Punishment sub-scale would have a strong, positive correlation with a measure of coercive parenting, given the positive relation between both constructs reported in previous studies (Dănilă et al., 2022; Lansford et al., 2014; Perron et al., 2014). Discriminant validity would be supported by significant but weaker relationships between Acceptability of Corporal Punishment sub-scale with measures of other parenting practices, i.e., parental consistency, parental encouragement, and parent-child relationship, as previously reported in the literature (Plessy et al., 2018).

2. Methods

2.1. Participants

In total 6949 biological, adoptive, and step-parents (henceforth ‘parents’) of children completed the International Parenting Survey between February 2012 and July 2017. They had children aged between 2 and 12 years old ($M = 5.12$, $SD = 2.90$), with slightly more boys (53.2 %) than girls (46.8 %). The number of children at home ranged from one to eight ($M = 1.40$, $SD = 0.64$). Most respondents were biological or adoptive mothers (90.4 %), followed by biological or adoptive fathers (8.9 %), having a mean age of 37.20 ($SD =$

6.30). Most children lived with both biological/adoptive parents (84.5 %), followed by single parent families (9.4 %). Table 1 reports other demographic characteristics. Parents were from Canada (34.6 %), Germany (20.0 %), the UK (10.1 %), Hong Kong (8.8 %), Australia (8.4 %), Belgium (7.9 %), Switzerland (4.7 %), Spain (2.8 %), and other countries (2.7 %). Most parents were from high-income countries (World Bank, 2023) and other characteristics of the countries are reported in Supplementary Table A.

2.2. Procedure

The IPS is a web-based survey that collected information from parents about their views about family and parenting. Morawska et al. (2017) described the development process and procedure in detail. Teams of researchers and practitioners in each participating country were responsible for seeking local ethical clearance and recruitment of parents. Advertisements were distributed through practitioners and services providing support to families (i.e., mental health services, family service providers, parent training facilitators, general practitioners), national websites, and newspapers. Using convenience sampling, parents of children aged 2–12 years were invited to visit the survey link. When parents visited the link, they were able to read the information sheet and consent by proceeding to complete the survey. Parents took between 20 and 25 min to complete the survey. Those parents with more than one child in the age range were asked to answer the survey considering their youngest child. The current research project received ethical approval from the University of Queensland's School of Psychology Ethics Review Committee (17-PSYCH-PHD-30-AH).

2.3. Measures

Of the measures included in the International Parenting Survey, below are the measures included in this study.

2.3.1. Demographics

The Family Background Questionnaire (Morawska & Sanders, 2010) collects information of parent, child, and family demographic

Table 1
Demographic characteristics of the total sample of parents (n = 6949).

Variable	*n*	%
Marital status		
Married	5181	74.5
Cohabitating	967	13.9
Divorced/Separated	421	6.1
Single	339	4.9
Widow/er	27	0.4
Other	14	0.2
Parent educational level		
Primary school or less	70	1.0
Some high school	480	7.1
Completed high school	1135	16.8
Trade/technical college qualification	1328	19.6
University degree	2438	36.0
Postgraduate degree	1145	17.0
College qualification	171	2.5
Employment		
Full-time	2901	42.9
Part-time	2029	30.0
Not working, but looking for a job	300	4.4
Home-based paid work	299	4.4
Not working	1222	18.1
Income replacement	11	0.2
Essential expenses not covered		
No	5580	82.4
Yes	1105	16.3
Do not know	85	1.3
Left over finances		
Enough that I/we can comfortably purchase most of the things we really want	2759	40.8
Enough that I/we can purchase only some of the things we really want	2770	41.0
Not enough to purchase much of anything I/we really want	1227	18.2
Formal help-seeking behaviour		
Yes	2403	34.6
No	4402	63.3
Intention to participate		
Extremely likely	353	5.2
Very likely	1025	15.2
Somewhat likely	2842	42.2
Not at all likely	2516	37.4

Note. N vary due to missing data.

characteristics, e.g., child gender, parent education, and family composition.

2.3.2. Parenting beliefs

The Parenting Belief Scale (Farruggia, 2009) asks parents about their perception of Parenting as a Private Concern (4 items, range 4–24) and their Acceptability of Corporal Punishment (4 items, range 4–24). Response options for each item ranges from 'strongly disagree' (1) to 'strongly agree' (6). Higher scores indicate higher levels of perception of parenting as a private matter and higher acceptability of corporal punishment, respectively. This measure had excellent internal consistency for the subscales of Parenting as a Private Concern ($\alpha = 0.82$) and Acceptability of Corporal Punishment ($\alpha = 0.90$) in the total sample.

2.3.3. Parenting practices

This study included the 18-item Parenting scale of the Parent and Family Adjustment Scales (PAFAS; Sanders et al., 2014), which measures parents' level of inconsistency in how they discipline their children (Parental Consistency, 5 items), use of coercive strategies when dealing with their child's behaviour (Coercive Parenting, 5 items), use of positive parenting practices (Positive Encouragement, 3 items), and quality of the relationhip with their children (Parent-Child Relationship, 5 items). Higher scores indicate greater level of problems. In this study, the internal consistency of the total sample for the Parenting scale was $\alpha = 0.70$. The internal consistencies per subscale were: Parental Inconsistency $\alpha = 0.51$, Coercive Parenting $\alpha = 0.60$, Lack of Positive Encouragement $\alpha = 0.60$, and Poor Parent-Child Relationship $\alpha = 0.78$.

2.4. Statistical analysis

Data screening followed Tabachnick and Fidell (2013) and Schlomer et al. (2010). Statistical analyses were conducted using IBM SPSS Statistics 27 and IBM SPSS Amos 28 Graphics. Descriptive statistics were reported for study variables. Given that the structure of the instrument has been reported but not yet empirically tested, an exploratory factorial analysis (EFA) through factor analysis in SPSS was conducted in a randomly selected sample (using SPSS Random sample of cases feature). The sample size was calculated based on the ideal sample size recommendations in relation to model parameters from Kline (2016), i.e., minimum 10 cases per parameter, ideally 20 cases per parameter. Principal axis factoring was the extraction method used because it is a better explorative solution to identify the underlying factors (Tabachnick & Fidell, 2013). Given that the factors of this scale are correlated, oblique rotation methods were used, particularly direct oblimin. Dimensionality was defined by factors with eigenvalues >1.

Once the factor structure was identified in the EFA, a first-order confirmatory factorial analysis (CFA) in Amos was conducted using the rest of the sample, i.e., cases not included in the random sample selector for EFA. Maximum Likelihood estimations were used using the following goodness-of-fit statistics to evaluate the hypothesised factor structure: Chi-square (χ^2), comparative fit index (CFI), Tucker–Lewis Index (TLI), and root-mean-squared error of approximation (RMSEA) with 90 % confidence interval. According to Blunch (2008) and Byrne (2016), the ideal cut-off values are $p < .05$ for χ^2, CFI > 0.95, TLI > 0.95, and RMSEA <0.05 (Byrne, 2016). Models where CFI >0.90 and TLI is close to 0.95 are considered acceptable (Byrne, 2016). For RMSEA >0.08 is considered acceptable but RMSEA ≥0.10 indicate poor fit (Blunch, 2008; Byrne, 2016). Standardized residuals and modification indexes were evaluated to detect model misspecification and improve model fit by adding one modification at the time, following the procedure proposed by Byrne (2016). To compare groups of parents across countries, measurement and structural invariance was evaluated as suggested by Byrne (2016), i.e., significant differences in $\chi 2$ and ΔCFI < 0.01 across models. However, when one of these values does not support invariance, ΔCFI should be definite indicator. Following Kline (2016) suggestions for minimum sample size, only those countries with a sample size >450 parents were included in this analysis.

In terms of convergent and discriminant validity, Pearson product-moment correlation coefficient (r) was used, following Cohen (1988)'s suggestions to categorise strength of the relationship, i.e., $r = 0.10$ (small), $r = 0.30$ (medium), $r = 0.50$ (large). The correlations of the total score of the Acceptability of Corporal Punishment sub-scale of the Parenting Belief Scale were examined in relation to the total score of Corporal Punishment sub-scale of Parent and Family Adjustment Scale for convergent validity, and to the total score of the Parental Inconsistency, Positive Encouragement, and Parent-Child Relationship sub-scales of Parent and Family Adjustment Scale to determine discriminant validity.

3. Results

3.1. Missing values and data screening

Little's MCAR test was χ^2 (1493) = 1839.9, $p < .001$ indicating data were not missing completely at random. The average percentage of missing data was 2.9 %, ranging from 0 % (for child age and parent marital status) to 34.3 % (i.e., parent age) for demographic variables, and from 2.1 to 2.9 %. for measure items. To further examine the pattern of missingness, further analyses were conducted using t-tests showing that data were missing at random as some parents' responses were influenced by their responses in other measures, i.e., parent age, items of acceptability of corporal punishment sub-scale, and items of parent-child relationsip sub-scale. Expectation-maximization algorithm was used to impute data for continuous variables, given that this procedure has shown to be adequate for missing at random data (Bennett, 2001).

3.2. Exploratory factor analysis

The two-factor structure of the scale was examined using EFA. Following Kline (2016)'s recommendation for sample size, and considering the number of parameters (45) a random sample of 900 parents was selected. Before conducting this analysis, normality was evaluated. Although Kolmogorov-Smirnov and Shapiro-Wilk normality tests were significant indicating non-normality, skewness and kurtosis of the items were primarily within −1 and + 1. Two items showed mild skewness ("Sometimes smacking/spanking children is the only way to make them understand" = +1.05, "As long as it doesn't leave a mark, smacking/spanking your child is not a big deal" = +1.39) and one item showed mild kurtosis ("As long as it doesn't leave a mark, smacking/spanking your child is not a big deal" = +1.32). Given that factor analysis is a robust analysis even when distributions are not normal (Tabachnick & Fidell, 2013), the factor structure of the scale was evaluated using Principal Components Analysis with direct oblimin rotation. Two factors emerged with eigenvalues >1. The first factor (eigenvalue = 3.92) explained 48.9 % of the variance, including the items: Parents have the right to raise their children any way they choose, People should mind their own business when it comes to other peoples' children, Disciplining children is a private, family matter, and Government has no right deciding how parents should discipline their children. The second factor (eigenvalue = 1.87) explained a further 23.4 % of the variance through the following four items: It is ok to give your child a smack/spank if they misbehave; Sometimes smacking/spanking children is the only way to make them understand; As long as it doesn't leave a mark, smacking/spanking your child is not a big deal; and the reversed item of It is not alright to smack/spank your child. Both factors explained 72.3 % of the variance in parenting beliefs.

3.3. Confirmatory factor analysis

Overall, the CFA model fit relatively well, $\chi^2_{(19)} = 1525.7$; CFI = 0.95; TLI = 0.92; RMSEA = 0.11, 90 % C.I. 0.10, 0.11. However, RMSEA values were over the suggested cut-off. Factor loadings ranged from 0.37 to 0.77. Following recommendations from the modification indexes and theoretical considerations, one covariate between the errors of items 1 (i.e., Parents have the right to raise their children any way they choose) and 2 (i.e., People should mind their own business when it comes to other peoples' children) was added as shown in Table 2. The final CFA model (Fig. 1) showed a good fit, $\chi^2_{(18)} = 613.9$; CFI = 0.98; TLI = 0.97; RMSEA = 0.07, 90 % C.I. 0.06, 0.07.

To evaluate the measurement and structural invariance across countries, multi-group CFA was conducted (Byrne, 2016). Considering sample size recommendations (Kline, 2016), countries with 450 or more participants from the total sample ($n = 6949$) were selected for this analysis: Canada ($n = 2405$), Germany ($n = 1392$), the UK ($n = 703$), Hong Kong ($n = 611$), Australia ($n = 583$), and Belgium ($n = 550$). The final CFA model fitted reasonably well across countries, see Table 3. The configural model fitted well, $\chi^2_{(108)} = 739.4$; CFI = 0.97; TLI = 0.96; RMSEA = 0.03, 90 % C.I. 0.03, 0.03. In terms of the measurement model, χ^2 was significantly different from the configural model but ΔCFI was at the recommended cut-off (0.01), indicating that the factor loading was equivalent across countries. However, the structural model (i.e., the relationship among the variables) was not comparable across countries given that there were significant differences in χ^2 and ΔCFI = 0.18. A further correlation analysis indicated that Parenting as a Private Concern and Acceptability of Corporal Punishment sub-scales were significantly correlated (medium strength), $r = 0.36$, $p < .001$, in the total sample.

3.4. Reliability

The reliability of the scales two factors (i.e., Parenting as a Private Concern; and Acceptability of Corporal Punishment) were evaluated using Cronbach's α for those countries included in the CFA analyses, indicating good internal consistency (Table 4). However, Germany showed poor levels of internal consistency in the sub-scale of Acceptability of Corporal Punishment ($\alpha = 0.51$). Post hoc analyses indicated that removing reverse item 'It is not alright to smack/spank your child' would increase $\alpha = 0.60$.

3.5. Convergent and discriminant validity

Acceptability of Corporal Punishment sub-scale was significantly (medium strength) correlated to Coercive Parenting sub-scale, $r = 0.32$, $p < .001$, for the total sample and per country (Table 5). On the contrary, acceptability of corporal punishment was mostly not

Table 2
Model fit indices for confirmatory factorial analysis of the parenting belief scale (n = 6049).

	Overall model fit					
	χ^2	*df*	CFI	TLI	RMSEA	90 % C.I.
A. First-order model	1525.7*	19	0.95	0.92	0.11	0.10–0.11
B. Model with added covariance between errors of two items (item 1 Parents have the right to raise their children any way they choose and 2 People should mind their own business when it comes to other peoples' children) of Parenting as a private concern (Final model)	613.9*	18	0.98	0.97	0.07	0.06–0.07

Notes. χ^2 = chi-square, *df* = degrees of freedom, CFI = comparative fit index, TLI = Tucker–Lewis Index, RMSEA = root mean square error of approximation, C.I. = confidence intervals.
* $p \leq .001$.

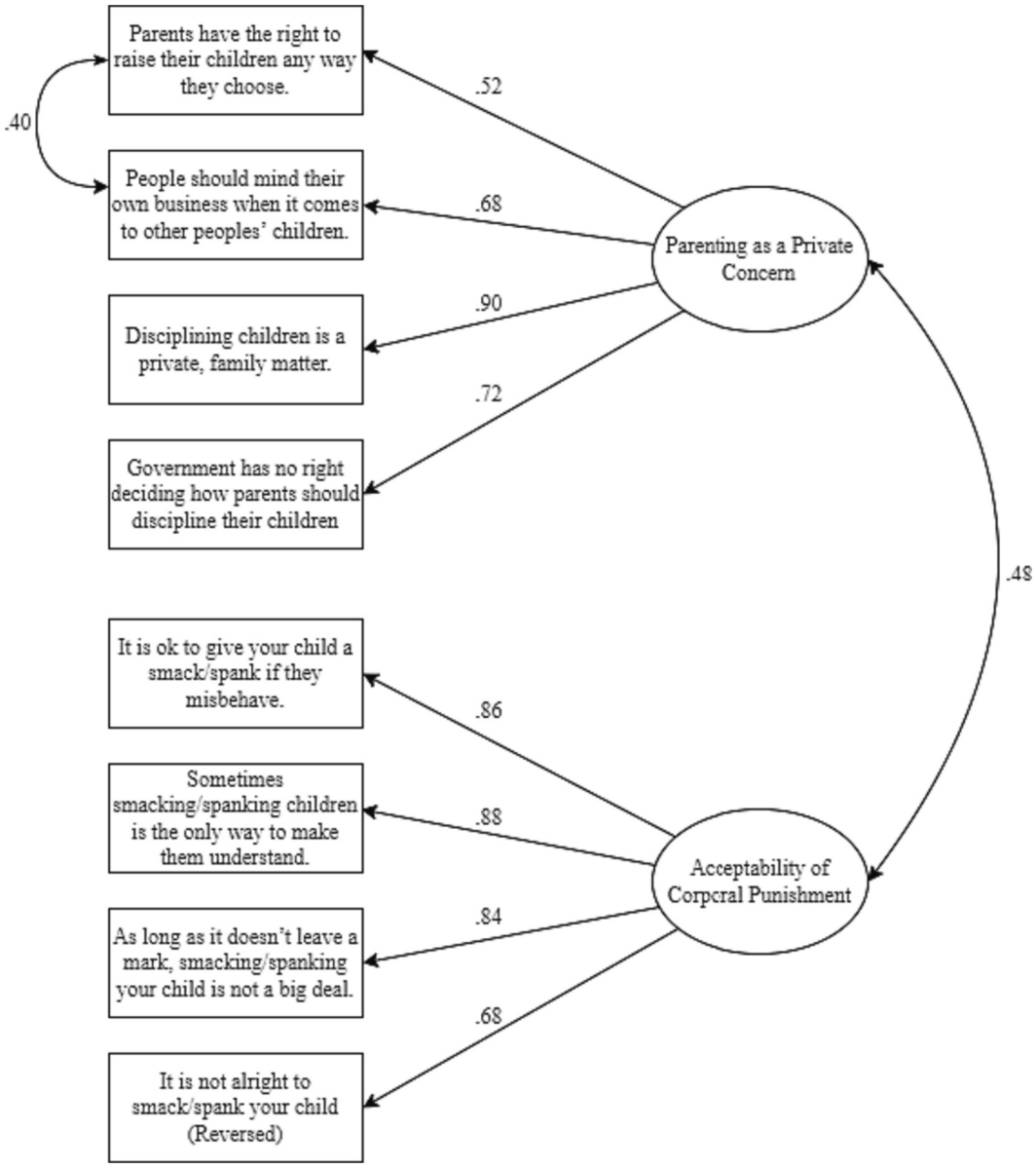

Fig. 1.. Two-factor structure of the parenting belief scale based on confirmatory factor analysis.

significantly related to the Parental Inconsistency sub-scale. High acceptability of corporal punishment was significantly (small strength) associated with lack of positive encouragement and poor parent-child relationship when evaluating total sample and each country.

4. Discussion

This study evaluated the psychometric properties of the Parenting Belief Scale across a number of high-income countries using a sample of parents who participated in the International Parenting Survey. This scale measures parents' perceptions of the level of privacy that they attribute to their parenting role and the level of acceptability towards the use of corporal punishment. Overall, findings indicated that the Parenting Belief Scale is a reliable and valid measure across countries.

Most of the study hypothesis were confirmed. A two-factor structure was obtained from the exploratory and confirmatory analyses, indicating that parents' perception of parenting as a private matter and their acceptability of corporal punishment were two distinct constructs within the scale. However, the hypothesis regarding model invariance was only partially supported. Parenting as a private concern and Acceptability of corporal punishment are two distinct sub-scales within the instrument in each country. However, modification indexes indicated that adding a covariance between two items within the same factor increased the model fit in some

Table 3
Fit indices of the final model of the multi-group confirmatory factor analysis for parenting belief scale (6 countries, n = 6244).

	Overall model fit								
	χ^2	*df*	$\Delta\chi^2$	Δdf	CFI	ΔCFI	TLI	RMSEA	90 % C.I.
Final model for Canada (n = 2405)	186.8*	18			0.99		0.98	0.06	0.06–0.07
Final model for Germany (n = 1392)	203.3*	18			0.93		0.89	0.09	0.08–0.09
Final model for UK (n = 703)	40.9*	18			0.99		0.99	0.04	0.03–0.06
Final model for Hong Kong (n = 611)	124.0*	18			0.94		0.91	0.10	0.08–0.12
Final model for Australia (n = 583)	106.1*	18			0.97		0.96	0.09	0.08–0.1
Final model for Belgium (n = 550)	78.3*	18			0.97		0.95	0.08	0.06–0.10
Configural model	739.4*	108			0.97		0.96	0.03	0.03–0.03
Measurement model	987.9*	138	248.5[a]	30[a]	0.96	0.01	0.96	0.03	0.03–0.03
Structural model	5209.7*yy	193	4470.2[a]	85[a]	0.79	0.18	0.82	0.07	0.06–0.07

Note. χ^2 = chi-square, *df* = degrees of freedom, CFI = comparative fit index, TLI = Tucker–Lewis index, RMSEA = root mean square error of approximation, C.I. = confidence intervals.
* $p < .001$.
[a] Δ when compared to the configural model.

Table 4
Reliability (internal consistency) of the parenting belief scale across countries (n = 6244).

Country	Parenting as a private concern	Acceptability of coercive parenting
	α	α
Canada	0.85	0.89
Germany	0.75	0.51
UK	0.86	0.91
Hong Kong	0.77	0.83
Australia	0.87	0.92
Belgium	0.81	0.85

Note. α = Cronbach's alpha.

Table 5
Correlations of PBS acceptability of corporal punishment sub-scale and PAFAS parenting sub-scales across countries (n = 6244).

Country	Acceptability of corporal punishment[a]	Parental inconsistency[b]		Coercive parenting[c]		Lack of positive encouragement[d]		Poor parent-child relationship[e]	
	M (*SD*)	*M* (*SD*)	r[f]	*M* (*SD*)	r[f]	*M* (*SD*)	r[f]	*M* (*SD*)	r[f]
Canada	9.40 (4.90)	3.85 (2.23)	0.13*	3.48 (2.04)	0.42*	2.28 (1.50)	0.05*	0.87 (1.45)	0.18*
Germany	5.50 (2.50)	4.227 (2.09)	0.03	3.98 (1.90)	0.20*	3.67 (1.86)	−0.04	1.02 (1.58)	0.14*
UK	9.70 (4.98)	3.91 (2.27)	0.01	3.40 (1.83)	0.29*	2.07 (1.67)	−0.04	0.88 (1.44)	0.09*
Hong Kong	11.10 (4.30)	5.65 (1.94)	0.04	4.41 (2.50)	0.32*	1.79 (1.63)	0.13*	3.95 (2.69)	0.20*
Australia	12.14 (5.43)	3.93 (2.26)	0.06	3.96 (2.10)	0.40*	2.43 (1.58)	−0.09*	1.12 (1.69)	0.08
Belgium	7.40 (3.20)	4.09 (1.93)	0.08	2.98 (1.72)	0.41*	2.23 (1.29)	0.12*	1.08 (1.28)	0.11*
Total sample	8.79 (4.78)	4.17 (2.21)	0.08*	3.77 (2.11)	0.32*	2.57 (1.74)	−0.12*	1.22 (1.86)	0.18*y

Notes.
PBS = Parenting Belief Scale, PAFAS = Parenting and Family Adjustment Scales.
* $p < .001$ (2-tailed).
[a] Range: 4–24.
[b] Range: 0–15.
[c] Range: 0–15.
[d] Range: 0–9.
[e] Range: 0–15.
[f] Pearson r, r = 0.10 (small), r = 0.30 (medium), r = 0.50 (large) (Cohen, 1988).

countries (i.e., Germany, Hong Kong, Australia, and Belgium) but not others. All the items suggested by modification indexes were related to the factor of parents' acceptability of corporal punishment, whereas the structure and factor loading of parents' perception of parenting as a private matter was consistent across countries. Although acceptability of corporal punishment has received theoretical and empirical attention in different countries (Deater-Deckard et al., 2003; Durrant et al., 2020; Perron et al., 2014), it seems that there are further contextual elements that would need to be taken into account. In terms of reliability, most countries showed excellent internal consistency, with the exception of Germany. Taken together, there are some slight differences between parents from Germany and the other countries. Germany is the only country in the sample that has banned all types of corporal punishment of children, which happened in 2000. Since then, German studies have reported a significant reduction in the use of corporal punishment, and increased

endorsement of this legal initiative (Bussmann, 2004). Consistent with previous research, in our study, Germany had the lowest mean acceptance of corporal punishment of all countries included. It may be that in Germany, where overall acceptance of corporal punishment is low, those in favour of corporal punishment hold very strong beliefs which influences overall reliability. Future research validating the scale in countries where corporal punishment is not permitted would be beneficial.

In terms of the convergent and discriminant validity of the Parenting Belief Scale, findings indicated that parents' acceptability of corporal publishment had a stronger relationship to parents' report on their use of coercive parenting in comparison to other parenting practices, i.e., parental consistency, parental encouragement, and parent-child relationship. These findings are in line with prior literature (Plessy et al., 2018), indicating that parents who accept the use of corporal punishment are significantly more likely to use it, and this link is stronger compared to the use of other ineffective parenting strategies (e.g. inconsistent discipline, poor parent-child relationship, and poor monitoring).

This study is the first one to explore the psychometric properties of the Parenting Belief Scale, which is an instrument measuring parents' self-reported perceptions of parenting privacy and use of corporal punishment. Although this instrument has been used in empirical research (Gonzalez et al., 2021; Perron et al., 2014), this study has provided further evidence about the reliability, factor structure, and concurrent and discriminant validity of this instrument. Furthermore, a large sample size allowed us to conduct exploratory and confirmatory analyses to evaluate the factor structure within the same study but using randomly selected, independent samples. Evaluating the instrument in a sample of parents from different high-income countries provided valuable information regarding the potential international application of this instrument.

However, this study also has limitations. Given that we used a convenience sample, we cannot imply that the sample is representative of each country. In line with this limitation, most parents were mothers, who were married, highly educated, currently employed, and without financial hardship. This study used cross-sectional data limiting our capacity to evaluate a wider range of psychometric properties, e.g., test-retest validity. The factor structure may be different for countries where corporal punishment has been banned (such as Germany), compared to other countries, which requires further testing. Furthermore, this study included high-income countries (World Bank, 2023) and most of them from an individualistic culture, with the exception of Hong Kong (Hofstede et al., 2010), leaving low-to-middle income and collectivistic countries underrepresented.

Our findings have several implications for practice, research, and public policy. The Parenting Belief Scale is a brief, easily administered instrument in the daily practice of practitioners working with parents. Early identification of parents' beliefs about their parenting role would facilitate addressing them through interventions. This instrument would facilitate practitioners' early detection of parents at risk of using corporal punishment and understanding of parents' willingness to be involved in parenting support that would bring private concerns to the surface of the public domain in either a community or clinical setting. Even though parents' beliefs are considered to be stable over time (Johnston et al., 2018), asking parents about their beliefs using a short instrument would enable discussion about them and potentially facilitate parents' help-seeking behaviours and engagement with preventive and clinical support (Bornstein et al., 2018; Gonzalez et al., 2021). This is particularly important considering some evidence showing that parents' reported use of corporal punishment was reduced after participating in a parenting program (Durrant et al., 2017). Although highly educated, high-income, working mothers were over-represented in the study; the Parenting Belief Scale would be suitable to be administered to other groups of parents as it is short and easy to administer.

The Parenting Belief Scale can be integrated into national surveys and other specific research projects. Using this instrument would enable monitoring of potential changes in parents' acceptability and use of corporal punishment in response to legislation, as it has been reported in Germany (Bussmann, 2004). When targeting corporal punishment, most research has focused on the use and acceptability of this disciplinary strategy (Cuartas, 2021; Ferguson, 2013; Gershoff & Grogan-Kaylor, 2016). However, parents' perception of the private vs public role of parents has been less covered. Thus, the Parenting Belief Scale has the potential to collect information about these parental beliefs to have a better understanding on how these beliefs are related to parental (i.e., parenting practices, parenting wellbeing), child (i.e., development, emotional and behavioural adjustment, academic performance), and societal outcomes (i.e., use of parenting support, child maltreatment rates).

By better understanding parents' beliefs towards the parenting role and corporal punishment, there is a potential to maximise the community-wide impact of current initiatives to promote a nurturing and stimulating family environment for children, and in return, work towards ending any type of violence against children, particularly from their parents/caregivers (Global Partnership to End Violence Against Children, 2021). Furthermore, government agencies and advocates can use the Parenting Belief Scale to monitor current parental beliefs towards corporal punishment and towards the involvement of government and communities to design campaigns promoting parents' endorsement of corporal punishment law reform and to evaluate its impact to potentially change parents' beliefs over time. Parenting is not just parents' responsibility; governments are also guardians of children's rights (United Nations, 1991). Knowing more about the parents' beliefs targeted in the Parenting Belief Scale in each country can inform media campaigns and public policy affecting parents and their families.

Based on our findings, there is a call for future research to expand the understanding of parents' beliefs about parenting role and acceptability of corporal punishment. First of all, it is important to examine parent beliefs in representative samples. Thus, it is important to evaluate this instrument in groups of parents underrepresented in this study, e.g., fathers and parents with socio-demographic disadvantages. Although some studies have expanded the understanding of corporal punishment in low-to-middle income countries and collectivistic cultures (Cuartas, 2021), future studies need to explore in more detail parents' beliefs in terms of their acceptability of corporal punishment and parenting as a private concern as measured by the Parenting Belief Scale. There is some evidence about the prevalence of corporal punishment and its associations with other types of violence and child outcomes across countries (Cuartas, 2021; Lansford et al., 2017). However, future research would need to explore the beliefs measured by the Parenting Belief Scale. Given the cultural differences and various levels of legal bans on corporal punishment across countries (Lansford et al.,

2017), it is essential to integrate measures such as the Parenting Belief Scale in current and future research efforts to collect evidence about factors that may be perpetuating corporal punishment as a disciplinary measure for parents and other caregivers around the world. Additionally, there is a need to build a theoretical framework integrating parents' perception of parenting as a private concern in relation to their parenting practices, wellbeing, and endorsement of the international mission of ending violence against children. This study identified some differences in the acceptability of corporal punishment in the structural model of the Parenting Belief Scale across high-income countries, which were attributed to the countries' progress towards a corporal punishment ban, i.e., prohibited in all setting vs prohibited in some settings/government committed to full prohibition. Thus, it is important to understand the implications of different levels of prohibition of corporal punishment for parental beliefs. Future research also needs to evaluate, through a longitudinal design, the role of parents' perception of their parenting role and their acceptability of corporal punishment in children's outcomes, particularly child development and wellbeing.

5. Conclusions

This study evaluated the internal consistency and validity of the Parenting Belief Scale indicating that is a reliable and valid self-report instrument to identify parents' beliefs about parenting as a private matter and about the acceptability of corporal punishment. Given that this instrument has relatively good psychometric properties across high-income countries where corporal punishment has not yet been banned, it has the potential to be used by clinicians and researchers to inform practice and future research. This is particularly important to involve parents and their beliefs in collaborative actions towards reducing violence against children internationally.

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Ethical approval

The current research project received ethical approval from the University of Queensland's School of Psychology Ethics Review Committee (17-PSYCH-PHD-30-AH).

Declaration of competing interest

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Data availability

Restrictions apply to the availability of these data, which were used under license for this study. The data that support the findings of this study are available from the International Parenting Survey Project Committee, upon reasonable request.

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