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Abstract

Background: Perceived parental self-efficacy (PSE) is thought to play a crucial role in parental well-being, the parent-infant relationship, and other aspects of infant development, particularly in the early postnatal period. The Karitane Parenting Confidence Scale (KPCS) is a 15-item self-report questionnaire designed for parents with infants aged 0-12 months.

Objective: To explore the factor structure of a French translation of the KPCS and assess its psychometric qualities.

Method: Using a French-language translation of the KPCS (KPCS-F), 257 parents of children aged 0-12 months were recruited via childcare structures (e.g. nurseries, community centers, mother and child protection centers). Confirmatory factor analyses (CFA) were conducted to examine 2- and 3-factor solutions for the KPCS-F scale. Internal reliability and convergent validity were evaluated.

Results: The best model was a two-factor solution (PSE “infant care” and PSE “parental role”) restricted to 12 items. Sound internal consistency was indicated, with a Cronbach’s alpha coefficient of 0.80 and a McDonald’s omega coefficient of 0.80. Test-retest reliability was good. KPCS-F score was correlated with social support and psychological well-being scores.

Conclusion: The KPCS-F showed substantial validity and reliability for this sample. The translated scale should therefore improve assessment and intervention processes for professionals working with parents of young children.

Keywords: parental self-efficacy, Karitane Parenting Confidence Scale, French translation

Résumé

Contexte : Le sentiment d'efficacité parental (SEP) semble jouer un rôle crucial dans le bien-être parental, la relation parent-enfant et d'autres aspects du développement de l'enfant, particulièrement durant la période postnatale précoce. La Karitane Parenting Confidence Scale (KPCS) est un questionnaire d'auto-évaluation de 15 items, conçu pour des parents d'enfants âgés de 0 à 12 mois.

Objectif : Explorer la structure factorielle de la traduction française de la KPCS et évaluer ses qualités psychométriques.

Méthode : Après la traduction de la KPCS en français (KPCS-F), 257 parents d'enfants âgés de 0 à 12 mois ont été recrutés via les structures d'accueil de petite enfance (i.e. crèches, centres sociaux, centres de protection maternelle et infantile). Des analyses factorielles confirmatoires (AFC) ont été menées pour examiner les solutions à deux et trois facteurs pour la KPCS-F. La cohérence interne et la validité convergente ont été évaluées.

Résultats : Le meilleur modèle correspond à une solution à deux facteurs (SEP « soins de l'enfant » et SEP « rôle parental »), restreinte à 12 items. La cohérence interne s'est révélée bonne, avec un coefficient alpha de Cronbach de 0.80 et un coefficient Omega de McDonald de 0.80. La fiabilité test-retest est satisfaisante. Des corrélations ont été observées

entre le score de la KPCS-F et les scores de soutien social et de bien-être psychologique.

Conclusion : La KPCS-F a montré une bonne validité et fiabilité pour cet échantillon. Elle devrait ainsi permettre d'améliorer les processus d'évaluation et d'intervention pour les professionnels travaillant avec les parents de jeunes enfants.

Mots-clés : sentiment d'efficacité parental, Karitane Parenting Confidence Scale, traduction française

INTRODUCTION

The early postpartum period is a difficult time for parents, especially mothers, who must cope with the demands that come with caring for their baby while confronting physical, emotional and social challenges (Barnes, 2015; Khajehei, 2016). During this period, one of the essential conditions for parental adjustment is a high level of Parental Self-Efficacy (PSE) with respect to the care given to one's baby (Mihelic et al., 2016; Ngai & Chan, 2011). Based on social cognitive theory (Bandura, 1977, 1997, 2003), PSE reflects parents' perceptions about competence in their parental role and their abilities to positively affect their child's behavior and development (Coleman & Karraker, 1998; Teti & Gelfand, 1991). Leahy-Warren (2005) defined PSE as a system of beliefs or judgments parents have about their capacities to carry out tasks related to the care of their infant. In keeping with Bandura's theory, de Montigny and Lacharité (2005) defined four sources of PSE: (a) parents' previous experience (i.e. learning by doing), (b) vicarious experience with other parents (i.e. learning by observing others), (c) verbal persuasion, and (d) parents' physical and emotional states.

A review of extant literature shows that in the early postnatal period, parents' confidence influences their ability

to care for their infants (Dumka et al., 2010; Poobalan et al., 2007). Moreover, low PSE can affect parental well-being, engendering an increase of parental stress and post-partum depression (Dunning & Giallo, 2012; Jones & Prinz, 2005; Kleinman & Reizer, 2018; Wernand et al., 2014). Conversely, a high level of PSE has been shown to act as a buffer against negative factors and facilitate adaptation to stressful events by promoting parental well-being (Ngai & Chan, 2011; Verhage et al., 2015). PSE is a crucial variable in a child's development, as it directly influences parenting practices (Coleman & Karraker, 2003; Jones & Prinz, 2005; Junttila & Vauras, 2014). PSE can also influence how much energy parents devote to teaching, playing with, and rearing their children (Bohman et al., 2013). Furthermore, parental sensitivity and engagement has been directly linked to PSE (Grimes, 2012). For this reason, PSE has been included as one of the target areas for intervention among parents in the immediate postnatal period (Amin et al., 2018; Benzies et al., 2013). Several studies inspired by the personal self-efficacy theory (Bandura, 1977, 1997) have showed parental self-efficacy beliefs to be fueled by social support (Biehle & Mickelson, 2011; Gao et al., 2014; Kuo et al., 2012; Leahy-Warren et al., 2011; Ong et al., 2014). Social support is a multidimensional concept. It can be defined as the provision of assistance arising from intrafamilial or extrafamilial social

networks to help parents cope with stressors. It encompasses five basic dimensions (Cutrona & Russell, 1990): emotional support, informational support, tangible assistance (instrumental or material support), esteem support, and social integration (e.g. companionship). Depending on its form, social support can involve vicarious experience, verbal persuasion, or regulation of parents' physical and emotional states.

In the aforementioned studies, researchers used various measures of PSE, such as the Maternal and Infant Care Confidence Scale (Kapp, 1998) and the Perceived Maternal Parental Self-Efficacy Scale (Barnes & Adamson-Macedo, 2007). However, these measures do not account for the specificity of parental tasks in the early stages of child development. During the first year of life, parents have to cope with the rapidly evolving needs of their young child as well as the realignment of their identity, finances and social life. In order to provide targeted support in this vulnerable period or plan out interventions for families with young children, professionals stood in need of a dedicated PSE measure. To address said need, Črnčec et al. (2008), developed the Karitane Parenting Confidence Scale (KPCS) by identifying parental experiences had when caring for children from birth to twelve months. The original validation study

showed the questionnaire to have adequate psychometric properties, mainly high internal consistency and adequate test-retest reliability. Some researchers (Bernardi et al., 2011; Črnčec et al., 2010; Jones et al., 2013; Kohlhoff & Barnett, 2013) claim the KPCS to be an applicable, reliable, and valid measure for assessing parental confidence in infant care. The scale is also looked upon as the best self-report measure of PSE (Wittkowski et al., 2017). KPCS has been translated into and validated in Nepali (Shrestha et al., 2016), Brazilian Portuguese (Pereira et al., 2018), Danish (Pontoppidan et al., 2019) and Japanese (Usui et al., 2019). The study's aim was therefore to translate the original version of the KPCS into French and examine the validity and reliability of said translation (KPCS-F), including its factor structure.

METHOD

Participants

The sample consisted of 257 parents, aged 18 years or older, with children aged 0-12 months. Parents were recruited in the North of France (*Départements du Nord et du Pas-de-Calais*) over a three-year period (2016-2018) through childcare structures (e.g. nurseries, community centers, mother and child protection centers [*Protection maternelle et infantile*,

multidisciplinary consultation centers for mother and children up to age 6]) located in urban areas.

Parents had an average age of 31.10 years (*SD* = 5.11) and five of them had twins. A minority of parents (3.5%) were divorced or single. Most of them (87.55%) had passed the baccalaureate (French post-secondary exam qualifying students for higher education), which is slightly higher than the average of the general French population which is 80% (Institut National de la Statistique et des Etudes Economiques, 2020). A total of 83.27% were employed at the time of the questionnaire, among whom 61.09% occupied a full-time job. Demographic data are presented in Table 1.

Table 1

Participants' characteristics (n = 257)

Categories	*N*	%
Gender of parents		
Female	181	70.43
Male	76	29.57
Gender of infants		
Female	98	37.41
Male	154	58.78
Twin boys	2	0.76
Twins (girl/boy)	8	3.05
Parents' age groups (years)		
>24	22	8.56
25-34	173	67.31
35-44	58	22.57
45 +	4	1.56
Infants' age groups (months)		
0 – 3	53	20.62
4 – 6	57	22.18
7 – 9	62	24.13
10 – 12	85	33.07
Marital status		
Single	9	3.5
Couples	248	96.5

Parous		
Primiparous	121	47.08
Multiparous	136	52.92
Occupation		
Unemployed	43	16.73
Part-time employment	57	22.18
Full-time employment	157	61.09
Educational level		
< 12th grade	32	12.45
High school diploma	55	21.40
Bachelor's degree	112	43.58
Master's or PhD	47	18.29
Other	11	4.28

Measures

The Karitane Parenting Confidence Scale (KPCS; Črnčec et al., 2008) is an instrument designed to measure perceived parental self-efficacy among parents of children aged 0-12 months. The instrument, rooted in the self-efficacy theory (Bandura, 1977,1997), was originally devised and drafted in English. It is a 15-item scale designed as a self-administrated questionnaire with four possible answers coded accordingly: 0 "*No, hardly never*"; 1 "*No, not very often*"; 2 "*Yes, some of the time*" or 3 "*Yes, most of the time*". The KPCS contains one

reverse-scored item (item 12). Two items (1 and 9) can be marked *not applicable*, assigned the score of "2". Scores are then added up to get a total score (range = 0-45). Factor analysis of the original scale revealed a three-factor structure (efficacy, support, and child development). However, Črnčec et al. (2008) have recommended only using the KPCS' total score. They obtained a Cronbach's alpha of 0.81, indicating that the original scale had good reliability (Sharma, 2016). The correlation coefficient for test-retest reliability was large (r = .88, p < .001). Validity was borne out by acceptable correlations with other measures of PSE and well-being indicators such as stress and depression. Moreover, the rating scale and scoring are straightforward and user-friendly for both parents and professionals.

Échelle de Mesure des Manifestations du Bien-Être Psychologique – Version courte (EMMBEP; Massé et al., 1998, Psychological Well-Being Manifestation Measure Scale – Short version). This instrument, designed to measure psychological well-being, was constructed and validated in the French language. It is composed of 25 items and five response options: "never", "rarely", "half the time", "frequently" and "almost always". In the original study, Cronbach's alpha was 0.93. For our sample, it was 0.72. McDonald's omega was .91.

Echelle des Provisions Sociales-10 items (EPS-10; Caron, 2013; Short version of the *Social Provision Scale*; Cutrona & Russell, 1987). This 10-item scale measures the perception of social support received. Participants are asked to respond in one of the following ways: “strongly disagree”, “disagree”, “agree” and “strongly agree”. For the original version, Cronbach’s alpha was 0.88. In this study, it was 0.78. McDonald’s omega was .77.

Questionnaire d’auto-évaluation des compétences éducatives parentales (QAECEP; Terrisse & Trudelle, 1988; French adaptation of the Parenting Sense of Competence Scale - PSCS; Gibaud-Wallston, 1977). This scale is composed of 17 items measuring PSE. Participants respond using one of the following phrases “completely agree”, “agree”, “moderately agree”, “moderately disagree”, “disagree” or “completely disagree”. For the original version, Cronbach’s alpha was 0.87. For the current sample, it was 0.73. McDonald’s omega was .74.

A demographic questionnaire was developed to assess variables including participants’ age and socio-cultural background.

Procedure

The study was approved by the University of Lille Ethics Committee (references 2016-3-S42). All parents were assured that their data would be kept confidential. They were also informed that their participation was completely voluntary and they could withdraw at any time without impacting the quality of services they receive.

After approval by the Ethics Committee, an informed consent procedure was carried out. Parents were asked to participate in two stages of the study. The first mainly aimed to explore the structure and validity of the KPCS-F. The second attempted to determine its test-retest reliability and examine convergent validity. Only 49 parents among the 257 participants agreed to participate in both stages. The participants were subsequently handed a paper version of all questionnaires administered, with an unmarked envelope to be returned to the researcher after completion.

During the first stage, all parents completed the KPCS-F, the EMMBEP (Massé et al., 1998), and the EPS-10 (Caron, 2013). During the second stage of the study, set four weeks later, participants were asked to complete only two scales: the KPCS-F (for a second time) and then the QAECEP (Terrisse & Trudelle, 1988). The latter scale was employed in order to test the convergent validity of the KPCS-F. A four-week gap was opted for, as this was deemed long enough to significantly

reduce the likelihood that parents would recall their previous KPCS-F responses, but short enough to prevent effects from new child development challenges on parents' self-efficacy ratings.

French adaptation of the Karitane Parenting Confidence Scale

The KPCS was translated into French by the authors of this article, all native French speakers. They then used web-based machine translation engines (Word, Reverso, Google Translate) to back-translate each item, checking for correctness. The original and French versions of the KPCS were subsequently shown to a researcher colleague fluent in English, so that she could compare the two versions. Said colleague incorporated a number of minor changes to make the wording clearer and more natural to French speakers. This version was discussed by a group of 10 maternity and child welfare professionals. They validated the translated items, but suggested using a likert scale without "Yes/No" options, as they found these responses to be too binary. As a result, slight modifications were necessary to clarify the difference between the second and third points of the scale. Since the proposed changes were consistent with the KPCS scoring rationale, the eventual responses agreed upon were "almost never", "not often" (instead of "not very often"), "often" (instead of "some of the time") and "most of the time".

Participants were prompted to tick off checkboxes (instead of underlining the answer).

Data analysis

All statistical analyses were conducted using SPSS version 19.0 and Amos 26.0, and JASP.

Confirmatory factor analysis (CFA) is recommended to test the factor structure when previous hypotheses about the dimensions of the construct are available based on theory and/or previous analyses (De Vet et al., 2011). Thus, the original three-factor model proposed by Črnčec et al. (2008) and the two-factor model proposed by Usui et al. (2019) were tested.

Several studies have indicated that the recommended sample sizes for confirmatory factor analyses (CFA) are $n \geq 200$ for theoretical models (Myers et al., 2011). However, according to MacCallum et al. (1999), the adequacy of results from factor analysis hinge to a greater extent on data characteristics than on the sample size employed. Thus, a good detection of population factors would not be difficult to achieve with communalities at around 0.5 and a small number of factors for samples inside a range of 100 to 200 cases. Based on this guiding principle, the available sample of $N = 257$ was deemed sufficient to test the models presented below.

As recommended by Byrme (2010), we carried out analyses by integrating step by step the covariances likely to improve the fit of the model, until the best fit indices were obtained. The fit of the factor structure to our data was evaluated with five indices: the χ^2 (CMIN), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), the standardized root-mean-square residual (RMSR), and the Akaike information criterion (AIC). Adequate fit was indicated by CMIN/degrees of freedom (*df*) < 3, CFI >.90, RMSEA <.08, RMSR < 0.05 and lower AIC (Byrne, 2009; Hu & Bentler, 1999; Ullman, 2001).

Upon finding the best factor structure, Cronbach's alpha and McDonald's omega coefficients were calculated to estimate the internal consistency for the KPCS-F total score and for both factors scores (Hayes & Coutts, 2020).

RESULTS

Means, standard deviations (*SD*) and percentages of responses for each item are presented in Table 2. Many items had mean values well above 2.80 and standard deviations around 0.3.

Factor structure and internal reliability

The original three-factor structure of the KPCS, proposed by Črnčec et al. (2008) include 15 items, distributed on three factors (efficacy, support and child development). The CFA for this three-factor model showed a poor fit to the data. Two pairs of covariances were added to the model. This improvement did not lead to a good model fit (Table 3).

A two-factor structure of the KPCS, including 12 items (exclusion of the items 9, 12 and 15), distributed on two factors (PSE "infant care" and PSE "parental role") was proposed by Usui et al. (2019). This two-factor model showed a poor fit to the data. Three pairs of covariances were added to the model and improved it. This two-factor model (figure 1) showed acceptable fit to data (χ^2 = 73.04; CFI = 0.957; RMSEA = 0.042; AIC = 129.044; RSMR = 0.048) (Table 3).

Table 2
Item characteristics for the Karitane Parenting Self-Confidence Scale – French (KPCS-F) (n = 257)

Items / Means, standard deviations and percentages of responses	*M* (*SD*)	*"Almost never"*	*"Not often"*	*"Often"*	*"Most of the time"*
1. I am confident about feeding my baby. [a]	2.63	0.39	1.17	31.13	67.31
J'ai confiance en ma capacité à nourrir mon bébé. [b]	(0.53)				
2. I can settle my baby.	2.55	0	1.17	45.14	53.69
Je sais contenter mon bébé.	(0.53)				
3. I am confident about helping my baby to establish a good sleep routine.	2.42	0.39	8.17	43.97	47.47
Je me sens confiant·e pour aider mon bébé à établir un bon rythme de sommeil.	(0.65)				
4. I know what to do when my baby cries.	2.35	0	6.62	54.47	38.91
Je sais quoi faire quand mon bébé pleure.	(0.61)				
5. I understand what my baby is trying to tell me.	2.30	0.39	8.56	54.86	36.19
Je comprends ce que mon bébé essaye de me dire.	(0.65)				
6. I can soothe my baby when he/she is distressed.	2.50	0	3.5	46.69	49.81
Je suis capable d'apaiser mon bébé quand il est en détresse.	(0.58)				
7. I am confident about playing with my baby.	2.67	0.39	0.78	29.57	69.26
Je me sens sûr·e de moi pour jouer avec mon bébé.	(0.52)				
8. If my baby has a common cold or slight fever, I am confident about handling this.	2.28	1.17	10.5	48.25	40.08
Quand mon bébé a attrapé froid ou a un peu de fièvre, j'ai confiance en moi pour gérer cela.	(0.70)				
9. I feel sure that my partner will be there for me when I need support.	2.70	0	2.72	26.46	70.82
En cas de besoin, je suis sûr·e de pouvoir compter sur l'aide de mon conjoint ou de ma conjointe.	(0.55)				
10. I am confident that my baby is doing well.	2.65	0	2.34	29.96	67.7
Je suis persuadé·e que mon bébé va bien.	(0.52)				
11. I can make decisions about the care of my baby.	2.59	0	1.56	39.69	58.75
Je suis capable de prendre des décisions concernant les soins de mon bébé.	(0.52)				
12. Being a mother/father is very stressful for me.	1.90	7	21.4	43.58	28.02
Être mère/père est très stressant pour moi.	(0.90)				
13. I feel I am doing a good job as a mother/father.	2.34	0.39	5.84	47.86	45.91

Je suis convaincu·e que je fais du bon travail en tant que mère/père.	(0.64)				
14. Other people think I am doing a good job as a mother/father.	2.54	0.39	0	46.31	53.3
Les autres personnes estiment que je fais du bon travail en tant que mère/père.	(0.53)				
15. I feel sure that people will be there for me when I need support.	2.61	0.39	4.28	30.35	64.98
En cas de besoin, je suis sûr·e de pouvoir compter sur l'aide de quelqu'un.	(0.60)				

Note. [a] Item from the original version of the KPCS (Karitane Parenting Confidence Scale). [b] Item of the KPCS-F

Table 3
Goodness-of-Fit Statistics for Factor Models of the Karitane Parenting Confidence Scale – French (KPCS-F)

			Measures of fit			
Factor model	χ^{2}[a]	*Df*	CFI	RMSEA[b]	AIC[c]	RSMR[d]
Original three-factor model (Črnčec et al., 2008)	195.64	87	.829	.700	261.640	.069
Improved three-factor model	153.567	85	.892	.056	223.567	.0617
Original two-factor model (Usui et al., 2019)	114.74	53	.829	.067	188.748	.061
Improved two-factor model	73.044	50	.957	.042	**129.044**	.0483

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; AIC = Akaike's Information Criterion. [a] Significant at the $\alpha < 0.05$ level. [b] Standardized RMSEA. [c] Lowest AIC is in bold. [d] Standardized Root-Mean Square Residual.

The first factor included KPCS items 2-8. All of the items had a high factor loading (>.40) on the first factor, except item 7. This first factor was named PSE “infant care”. The second factor included KPCS items 1, 10, 11, 13, and 14, all factors had loadings >.48. These items dealt with the parent’s self-evaluation as a parent. This factor was named PSE “parental role”. The two latent factors were highly correlated with each other (r = .58, p < .001; Table 4).

Insert here figure 1.

The Cronbach’s alpha coefficients were .80 for the 12-item version of the KPCS-F, .73 for the first factor (PSE “infant care”) and .63 for the second (PSE “parental role”). McDonald Omega coefficients are quite similar: respectively .80, .72 and .64. Internal consistency was rather low (Sharma, 2016) for the second factor. Each factor was strongly correlated to the total score (Table 4).

For this 12-item version of the KPCS-F, scores ranged from 17 to 36, with a mean score of 29.71 and a standard deviation of 3.88 (see Table 4 for each factor).

According to the Shapiro-Wilk and Kolmogorov-Smirnov normality tests, the scores of the KPCS-F did not follow a

normal distribution (W = .97, p < .001 ; D = .35, p < .01 ; skewness = -0.46 ; kurtosis = 0.11). Therefore, for the following tests with the KPCS-F total score and the two factors scores, we used non-parametric statistical analyses (Spearman's correlation, Mann-Whitney U test and the Kruskal-Wallis test).

Table 4.

Mean, Standard Deviation and Cronbach's alpha of KPCS-F (total, Factor 1 and Factor 2) and correlations with other variables (n = 257)

Measures	Mean (SD)	Cronbach's alpha	KPCS-F total	F1	F2
KPCS-F total	29.65 (3.91)	.79	-	.93**	.84**
KPCS-F F1	16.88 (2.59)	.72	.93**	-	.58**
KPCS-F F2	12.77 (1.79)	.64	.84**	.58**	-
Baby age	7.18 (3.56)	-	.05	.10	.03
Parental age	31.10 (5.11)	-	.13*	.12	.12*
Parental education	-	-	.15*	.13*	.14*
QAECEP	81.00	.73	.71**	.70**	.61**

	(7.97)				
EPS	35.31	.78	.21**	.16**	.28**
	(3.74)				
EMMBEP	98.14	.92	.38**	.32**	.37**
	(12.71)				

*p < .05, **p < .01; KPCS-F = Karitane Parenting confidence Scale – French; F1 = PSE "infant care"; F2 = PSE "parental role"; QAECEP = Questionnaire d'Auto-Evaluation des Compétences Educatives Parentales; EPS = Echelle des Provisions Sociales; EMMBEP = Echelle de Mesure des Manifestations du Bien-Être Psychologique.

Test-retest reliability

The 12 item-scale demonstrated good test–retest reliability (r = .78, p < .001 for total score; r = .70, p < .001 for both factors).

Convergent validity

The KPCS-F scores were correlated with the QAECEP score (r = .71, p < .001, respectively r = .70 and r = .61, p < .001 for factor 1 and factor 2; see Table 4).

Associations between the KPCS-F scores and demographic variables

As indicated in Table 4, child age was not correlated with KPCS-F scores. Weak positive correlations were observed between KPCS-F scores, parental age and parental education (considered as a continuous variable).

Moreover, parental gender (Z = 1.30, p = .20), baby gender (Z = 0.78, p = .44), and parental occupation ($H(2, 257)$ = 2.18, p = .54) had no effects on the KPCS-F scores.

According to Bandura (1977, 1997), self-efficacy is influenced by previous performance accomplishment. In this study, it was hypothesized that parents who had previously cared for newborns would have higher levels of parental confidence than those with no previous experience. However, the KPCS-F scores obtained by multiparous parents (M = 29.66, SD = 3.84) did not differ (Z = 0.14, p = .89) from those of primiparous parents (M = 29.64, SD = 4.00).

Associations between the KPCS-F scores and psychological variables

According to the social cognitive theory of Bandura, PSE should be correlated to social support and well-being. Indeed, the KPCS-F was positively correlated with the EMMBEP (r = .39, p < .001, respectively r = .31 and r = .40, p < .001 for factor 1 and factor 2). The KPCS-F was also correlated with the EPS (r = .22, p < .001, respectively, r = .15 and r = .28, p < .001 for factor 1 and factor 2; see Table 4).

Discussion

The purpose of this study was to explore the factor structure and the psychometric qualities of a French translation of the KPCS. The results showed the best fitting of the data to occur through a two-factor structure with only 12 items, similar to the structure found for the Japanese translation. The internal consistency of the 12-item scale proved highest, considered good with a value of 0.80. That put it in the same range as the original 15-item KPCS English version (0.81; Črnčec et al., 2008). The Cronbach's alpha coefficients for the full scale (.80), the PSE “infant care” (.73) and the PSE “parental role” (.63) factors were lower than in the Japanese version (.85, .84, and .72, respectively; Usui et al., 2019). Therefore the sub-scores of the KPCS-F should be considered with caution. It should prove insightful to conduct further studies with the 15 translated items in order to replicate these results with another larger French sample.

The French 12-item scale validated in this study seems to exhibit the same qualities as the initial version of the KPCS and a significative test-retest reliability for the 12-items scale, which the Japanese online survey was unable to test. According to Bandura's theory (Bandura, 1977, 1997), the removal of items 9, 12 and 15 stands to reason. In fact,

these items are related to perceived social support (items 9 and 15) and stress (item 12), which are often correlated with those measures pertaining to beliefs about parenting efficacy. By avoiding confusion in the measurement of PSE and that of its potential causes or consequences, the 12-item scale could be seen as an improvement over the first scale. This could be of value in studying the relationship between perceived social support, parenting self-efficacy and parenting stress or well-being.

According to Bandura's social cognitive approach (1977, 1997), PSE ought to be regarded as a dynamic variable that influences parental well-being. We observed that PSE was associated with parental well-being. To our knowledge, only two studies have linked PSE with a specific measure of well-being (Freiberg et al., 2014; Junttila et al., 2015). The link between PSE and the subjective experience of well-being could be further explored by using the KPCS-F over a longitudinal perspective. Moreover, according to Bandura, PSE is fueled by social support. It appeared that PSE was actually correlated with social support. These results are consistent with those obtained in previous studies (Cutrona & Troutman, 1986; Leahy-Warren et al., 2012; Shorey et al., 2015).

Several limitations were observed in this study. The KPCS was translated based on the back-translation method; professional translators were not used in the initial translation due to time and budget constraints. Likewise, the pre-final version of the translated questionnaire was not pilot tested on a small sample. Nor did we inquire into participants' thoughts on items in order to ensure accurate translation of meaning. The literature nevertheless contains several other validation studies having been carried out in the same manner (Pereira et al., 2018; Shrestra et al., 2016). Despite these shortcomings, our procedure yielded improved responses. Slight changes relative to the initial KPCS response options indeed introduced greater continuity. The KPCS-F may lessen a feeling of being judged for each item as a successful or unsuccessful parent, which some professionals have suggested may have been inferred from the "Yes/No" responses used previously. Though KPCS-F appears well-suited for use in France, its items may need to be worded differently to accommodate the cultural and language customs of French speakers living outside metropolitan France.

Our analysis yielded satisfactory results, through room for improvement in future research still remains. Our sample was composed of 257 parents. However, Structural Equation Modelling (SEM) is a large-sample technique, and so a more sizeable sample (> 500 cases) would have been preferable in

order to reduce bias in parameter estimates. As such, the results of our analysis should be treated with caution.

Furthermore, previous validation studies of the KPCS in different languages only included mothers (Črnčec et al., 2008; Pereira et al., 2018; Pontoppidan et al., 2019; Shrestha et al., 2016; Usui et al., 2019). In this study, fathers were included in order to expand the applicability of the KPCS-F to both groups. Fathers made up only 30% of the sample, because they proved harder to reach from within childcare structures. Moreover, the study's topic may elicit less interest in fathers than mothers, who remain, despite socio-cultural shifts, the main caregiver figures for young children (Champagne et al., 2015; Yavorsky et al., 2015). A similarly weak participation was observed among men in an ongoing topically germane online survey, which may lend credence to this hypothesis.

No differences were found in KPCS-F scores between mothers and fathers, but a greater feeling of parental self-efficacy was expected in mothers than in fathers, for two main reasons. First, women more so than men appear to be groomed from an early age to take care of others through socialization processes (Coulon & Cresson, 2007). Second, as the primary caregivers for infants, women may have more opportunities to have mastery experiences. However, since the social pressure to excel in parenting is probably stronger for women than for men, the items may not have the same meaning relative to the

ideal standards to be attained as a good father or mother. It may therefore be relevant to conduct a comparative study with a quantitative and qualitative mixed method in order to explore the possible differences in meanings given to items by fathers and mothers.

Contrary to previous studies (Črnčec et al., 2008; Pereira et al., 2018, Pontoppidan et al., 2019), no difference was observed in KPCS scores between primiparous and multiparous parents, and there was only a weak correlation showing that confidence increased with parents' age. This may be due to a sampling bias. There could be a difference in confidence between primiparous and multiparous parents during the first few months of the child's life, detectable in a larger sample with a homogenous distribution of babies' ages.

Despite the limitations noted, the results showed the KPCS-F to be an applicable instrument for assessing parental confidence, with straightforward, user-friendly rating and scoring scales for both parents and professionals.

Since researchers from other countries have already used KPCS to test the impact of early intervention programs (Jones et al., 2016; Pontoppidan et al., 2016), the KPCS-F could be employed for the same purpose. In France, parenting support is a strategy promoted by current public policy (Ministère des Solidarités et de la Santé, 2018), which may foster novel intervention practices for young children and parents. The

KPCS-F could, for example, be used to evaluate early childhood home visiting programs or support activities offered by mother and child protection centers, thereby strengthening evidence-based practices.

KPCS-F is not a diagnostic tool and further studies are needed to determine a clinical cut-off score for the KPCS-F, or perhaps different cut-off scores for mothers and fathers. But the lack of a cut-off score should not preclude clinical exploration. Parental confidence in particular can be assessed with this tool during the neonatal period, since low levels of parental confidence can underlie vulnerabilities needing to be addressed immediately once identified (Olafsen et al., 2007). Maternal confidence needs to be emphasized as a key component in the concept of motherhood. Just as low levels of parental confidence can adversely affect parent-infant interactions, the promotion feelings of parental competence can prove tremendously valuable. Due consideration must be given to the clinical relevance of parental feelings of confidence, which are crucial for development into adaptive and rewarding fatherhood and motherhood roles. The KPCS-F could also be employed in a more participatory manner. For example, once the KPCS-F is completed, parents and professionals could review and discuss responses together. Such a participation-friendly strategy could be useful for both assessment and intervention, allowing professionals to

determine parents' strengths and weaknesses based on the scoring of each item. By providing feedback informed by parents' concerns and support needs, more appropriate and better-tailored assistance could be provided through formal and informal social support.

The KPCS was first developed in Australia to assist in the support and development of parenting skills for parents of children ages 0-12 months, subsequently spreading to other countries. The KPCS-F version will now afford researchers and professionals working with French-speaking parents of young children, especially those interested in planning psycho-educational interventions to enhance parental self-efficacy, with all new opportunities.

Conflicts of interest: none.

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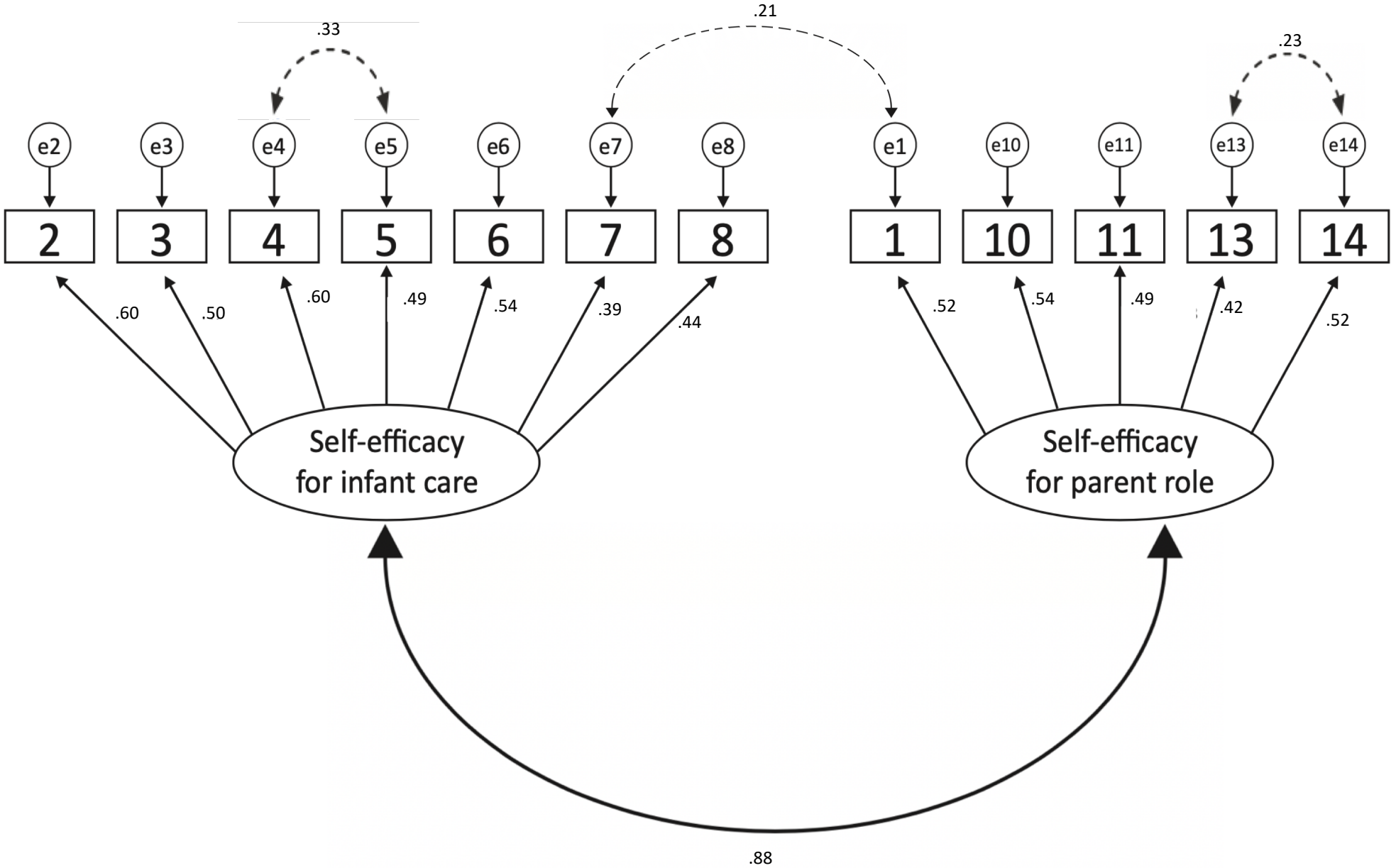

Figure 1. Confirmatory factor analysis of the Karitane parenting confidence scale – French version (KPCS-F) (*N* = 257).