



Exploring relationships between family food behaviour and well-being in single-headed and dual-headed households with adolescent children

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Abstract

This study explores the relationship between food-related parenting practices, satisfaction with food-related life and satisfaction with family life in mothers-adolescent children dyads with different family structures. We assessed the relationships between satisfaction with food-related life and life satisfaction as well as the relationship between satisfaction with family life and life satisfaction in mothers and their children. A questionnaire was applied to a non-probabilistic sample of 300 married or cohabiting mothers and 170 single mothers and one of their children between 10 and 17 years of age in Temuco, Chile. The questionnaire included the Family Food Behaviour Survey (FFBS), Satisfaction with Life Scale, Satisfaction with Food-related Life scale, and the Satisfaction with Family Life scale. Using principal component factor analysis in the mothers subsample, three components were detected on the FFBS: “Maternal control of child snacking behaviour”, “Maternal presence during eating” and “Child involvement in food consumption”. Using confirmatory factor analysis, the three factor-structure of the FFBS was validated in mothers and children subsamples of both family structures. Using structural equation modelling, we found that maternal presence was positively related to food-related and family life satisfaction in mothers and children of both family structures. A positive relationship was found between child involvement and food-related and family life satisfaction in married or cohabiting mothers. A negative relationship was found between child involvement and family life satisfaction in children of single mothers. We also found that mothers and children life satisfaction was related to satisfaction with family life and food-related life in both family structures. These findings suggest that maternal presence when adolescents eat may improve satisfaction with food-related life, with family life and life satisfaction in mothers and children independent of the family structure.

Keywords Food-related parenting practices · Subjective well-being · Family structure · Structural equation modelling

Introduction

Although several factors impact adolescent eating behaviours, family has an important influence (Ferris et al. 2017; Robson et al. 2016; Salvy et al. 2017; Watts et al. 2017). In this regard,

family mealtime routines and food-related parenting practices are factors of increasing interest in the development of adolescent eating habits (Anderson et al. 2012; Vaughn et al. 2013). Feeding practices are specific behaviours that parents use to influence what, when or how much a child eats (Fries et al.

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2017; Vaughn et al. 2013). This includes controlling (e.g. pressure to eat, restriction of certain foods, using food as a reward) (Kiefner-Burmeister et al. 2016; Vaughn et al. 2013), parent food modelling (Robson et al. 2016; Vaughn et al. 2013), encouraging healthy eating behaviours (Reicks et al. 2015), modifying availability of food and beverages in the home and family mealtime environment (Loth et al. 2016; Nepper and Chai 2016; Reicks et al. 2015; Watts et al. 2017), food preparation practices and the involvement of children in food planning and preparation (Vaughn et al. 2013).

Often, parental influence via food-related parenting practices is based on the parental presence and involvement in the daily routines of adolescents (Reicks et al. 2015), such as family meals. A recent study reported that controlling food-related parenting practices may have a protective effect against adolescent overweight and obesity risk (Chong et al. 2017). Increasing evidence indicates that a high frequency of family meals and an adequate emotional atmosphere during family meals are associated with positive outcomes for adolescents, such as a healthier diet (Berge et al. 2013; Haines et al. 2016; Hebestreit et al. 2017; Larson et al. 2017; Reicks et al. 2015; Watts et al. 2017), a lower likelihood of obesity or being overweight (Haines et al. 2016; Ramalho et al. 2016; Roach et al. 2017), better family interaction, opportunities for communication, the strengthening of interpersonal relationships, the expression of affection (Berge et al. 2013; Salvy et al. 2017; Speirs et al. 2016) and an increase in the psychological well-being of adolescents (Neumark-Sztainer et al. 2014).

Although parents still typically provide foods and are responsible for mealtimes during adolescence, this life stage is associated with increasing autonomy (Ferris et al. 2017; Mustapic et al. 2017; Pearson et al. 2017), as adolescents want make their own decisions regarding what and when to eat (Olsen and Ruiz 2008). Adolescents also influence their parents' food choices by expressing their preferences, negotiating, persuading and making demands (Alm et al. 2015). In this regard, it has been reported that adolescent involvement in food preparation is a positive factor affecting diet quality among this age group (Reicks et al. 2015). Other authors have reported that parents tend to give their children increased influence over meals, given that time together and enjoyment are prioritized (Alm et al. 2015). In addition, it is suggested that involving children in food preparation might be an effective strategy for encouraging children to eat healthy foods, giving children a sense of pride and empowerment and creating a happy, relaxed atmosphere (Alm et al. 2015).

Parents use feeding practices to promote healthy eating habits in their adolescent children and to prevent overweight or obesity (Berge et al. 2015). Nevertheless, there is evidence that indicates this may result in the opposite outcome. A high level of restriction of unhealthy food may induce psychological reactance and lead to an increase in the consumption of unhealthy foods or overeating when the restricted food is made

available (Alm et al. 2015; Stok et al. 2015). Also, high parental control, low firm control and low parental food structuring are related to increased adolescent consumption of unhealthy snacks (Reicks et al. 2015). Regarding family meals, not all families sit down to regularly share family meals due to numerous factors that include conflicting work and school schedules, stress, financial resources, etc. (Nepper and Chai 2016). Eating alone has been associated with unhealthy eating habits in adolescents (Reicks et al. 2015). Family meals also might be a source of tension, given that meal time can be used to exert control or reinforce the authority of some family members over others (Jarosz 2017). This results in avoidance or shortening of some family meals (Jarosz 2017). Regarding the involvement of children in food planning and preparation, evidence has shown that the more influence children have, the less healthy the food choices tend to be (Papaioannou et al. 2013).

Family structure is an important aspect of the family context that is linked with many child development outcomes (Schmeer 2012). Nevertheless, studies that focus on differences in family structure, such as single-headed vs. dual-headed households are still scarce (Berge et al. 2013). Schmeer (2012) reported that children in married mother households have healthier body mass indexes, which may be due to lower stress levels and more emotional support in these households compared to those living in single mother households. Other studies reported that adolescents in single parent families are more likely to have unhealthy eating habits compared to children who live with both parents (Baek et al. 2014; Reicks et al. 2015; Stewart and Menning 2009). This includes lower frequency of family meals (Baek et al. 2014; Jarosz 2017; Reicks et al. 2015), lower intake of fruit and vegetables (Baek et al. 2014; Reicks et al. 2015) and greater consumption of fast food (Stewart and Menning 2009). These factors may be related to less parental monitoring and control over meals (Reicks et al. 2015), reflecting time scarcity in single-headed households (Jarosz 2017). Although some authors have suggested that single mothers have additional barriers to regular family meals compared to parents living in dual-headed households (Berge et al. 2013; Levin and Kirby 2012), there is evidence indicating that barriers to family meals exist in both family types and can differ among them (Berge et al. 2012).

Food parenting practices have both positive and negative effects on adolescent eating habits and differ according to family structure; however, little is known about the outcomes of different food-related parenting practices on adolescent well-being (Utter et al. 2016). Subjective well-being can be analysed by looking at global judgments of life satisfaction and satisfaction in specific life domains (Diener et al. 1999). Bottom-up approaches to life satisfaction suggest that overall life satisfaction depends on the satisfaction with life domains such as family, health and leisure (Brief et al. 1993). In this paper, we concentrate specifically on exploring the relationship between food-related parenting practices and satisfaction

in two life domains, food and family, as well as overall life satisfaction.

Higher levels of satisfaction with food-related life have been positively associated with greater parental support (Schnettler et al. 2015a; Schnettler et al. 2016), better eating habits (Schnettler et al. 2013, 2015b), greater frequency and importance assigned to family meals (Schnettler et al. 2015a, 2015b; Schnettler et al. 2016) and having a lower prevalence of being overweight or obese (Schnettler et al. 2013, 2015a) in youth. Nevertheless, to our knowledge, no studies exist that assess the relationships between food-related parenting practices, satisfaction with food-related life and satisfaction with family life. Therefore, the primary objective of the current study is to explore the relationship between four food-related parenting practices and satisfaction with food-related and family life among mothers and their adolescent children in single-headed and dual-headed households. We focus only on female single-headed households and not on male-single headed households due to two main reasons. First, although the level of fathers' engagement in childrearing tasks has increased over the decades (Sharif et al. 2017), mothers are still a primary influence on their children's diet (Johnson et al. 2011; Schnettler et al. 2017d). This may be due to social norms that pressure women more than men to take responsibility for family routines including meals (Sharif et al. 2017). This effect is more pronounced in Latin American countries. Second, this study uses Chile as a case of study and, currently in Chile, 44.1% of families are single-headed households and more than 75% of them are headed by single-mothers (CASEN 2015).

Most studies on children's and adolescents' eating behaviour and the way they are controlled by parents rely on the parents' assessment of a child's behaviour, which may not necessarily reflect a child's actual behaviour or diet (Fries et al. 2017). For instance, it has been found that there are important differences between what adolescents reported their parents do to impact their eating habits and what parents reported (Musher-Eizenman and Kiefner 2013). In this study, we surveyed both mothers and their adolescent children.

Recent studies suggest that satisfaction with food-related life is positively correlated to overall life satisfaction in both students and adults (Schnettler et al. 2013, 2014, 2015a, b, c, 2016). Some of these studies have related levels of life satisfaction and satisfaction with food-related life to family interactions involving food (Schnettler et al. 2013, 2015a, b, 2016). More recently, Schnettler, Miranda-Zapata, Grunert et al. (2007) found that students' life satisfaction was positively and significantly related to satisfaction with food-related life and to satisfaction with family life. Therefore, the second objective of the current study is to assess the relationships between satisfaction with food-related life and life satisfaction and between satisfaction with family life and life satisfaction in mothers and their children. In this regard, it has been reported that family relationships are strongly linked to

subjective well-being in adult samples (Botha and Booysen 2014; Loewe et al. 2014). Furthermore, recent studies report that family relationships are among the factors most closely related to adolescent subjective well-being (González-Carrasco et al. 2017; Lee and Yoo 2015).

Material and Methods

Sample and Procedure

The methodology of this study was approved by the Ethics Committee of the Universidad de La Frontera. Data collection took place in the city of Temuco, in Southern Chile. Samples were taken using a quota system where quotas were proportionally based on the distribution of families in Temuco in accordance with data on family structure obtained from the 2013 CASEN survey (Ministry of Social Development 2015). Non-probability sampling was used to recruit a sample of 300 dual-headed families and 170 single-headed families with at least one adolescent child between 10 and 17 years of age in Temuco, Chile. In the case of dual-headed families, married mothers and unmarried cohabiting mothers were included. This is because of a growing preference for cohabitation in lieu of legal marriage which has recently been observed in Chile (Calvo et al. 2011). In the case of single parent families, such families were only included if the mother was the head of the household. Single parent families where the father was the head of the household were excluded as this is an uncommon scenario in Chile (CASEN 2015).

Participants were recruited from seven schools that serve socioeconomically diverse populations. Directors in each school signed authorization letters allowing research to be conducted with their students and provided a list of students from fifth grade upwards (corresponding to an age of at least 10 years), with their mothers' telephone numbers. Mothers were contacted by trained interviewers who explained the objectives of the study and the strictly confidential treatment of the information obtained. Then, they provided detailed information about the questionnaires and asked if they wanted to participate with one of their adolescent children. Interviews were conducted in participants' homes or in schools according to their preference. The date and time that the questionnaires were completed were determined according to participant availability. After mothers and children signed written informed consent forms, the questionnaires were personally administered separately to the mothers and one child between 10 and 17 years per household by the trained interviewers during June and December 2016. The interviewers read the questions aloud to each family member and recorded participant responses on the paper questionnaires. The anonymity of the respondents was ensured.

A pilot test of the questionnaires was conducted on 5 female single-headed families and 5 dual-headed families using the same method described above. As the results of the pilot test of the instrument were satisfactory, no changes were required in either the questionnaires or the interview procedure.

Measures

The questionnaire included the following instruments, which were answered by the mothers and their children:

- **Family Food Behaviour Survey:** the Family Food Behaviour Survey (FFBS; McCurdy and Gorman 2010), is a scale consisting of 20 items grouped into four dimensions that assess family mealtime practices mothers with children aged 2–11 years old, using a 5-level Likert scale (0: never true; 4: always true). In this regard, although children from ages 2 to 11 and 10 to 17 years old (the age range of children in this study) have different needs and eating behaviours, the FFBS was used. This is because its factors assess food-related parenting practices also used by mothers from adolescent children (Alm et al. 2015; Berge et al. 2013; Chong et al. 2017; Haines et al. 2016; Hebestreit et al. 2017; Kiefner-Burmeister et al. 2016; Larson et al. 2017; Reicks et al. 2015; Stok et al. 2015; Vaughn et al. 2013; Watts et al. 2017). The first factor is called “maternal control of child eating behaviour” (e.g. “*Child has a regular snack and mealtime routine*”), the second “maternal presence during eating” (e.g. “*I sit down with my child when she/he eats*”), “child involvement in consumption” (e.g. “*Child chooses foods from what is served*”) and “organization of eating environment” (e.g. “*My child eats and watches TV at same time*”). The Cronbach α ranged from 0.73 to 0.83 according to McCurdy and Gorman (2010). Two bilingual translators translated all original items from English to Spanish. Subsequently, a third bilingual translator back-translated the Spanish version of the scale into English. The differences found were resolved by discussion, with all the translators agreeing on the final versions of the scale. Then, a version was created and adapted for children (e.g. “*I have a regular snack and mealtime routine*”, “*My mother sits down with me when I eat*”, “*I choose foods from what is served*”, and “*I eat and watch TV at same time*”).
- **Satisfaction with Life Scale:** The Satisfaction with Life Scale (SWLS; Diener et al. 1985) is a scale consisting of five items grouped into a single dimension that evaluates the overall cognitive judgments about a person’s own life (e.g. “*In most ways my life is close to my ideal*”). The respondents were asked to indicate their degree of agreement with the five statements using a 6-level Likert scale (1: completely disagree; 6: completely agree). This study used the Spanish-language version of the SWLS which has shown good internal consistency in previous studies with youth, adolescents and adults in Chile (Schnettler et al. 2015a, b; Schnettler Lobos et al. 2015; Schnettler et al. 2017b, c, d). In the present study, the SWLS showed a good level of internal consistency (Cronbach’s α mothers = 0.903, children = 0.910). The SWLS score is the sum of the 5 items of the scale. Higher scores indicate higher life satisfaction.
- **Satisfaction with Food-related Life:** Satisfaction with Food-related Life (SWFoL; Grunert et al. 2007) is a scale consisting of five items grouped into a single dimension that evaluates a person’s overall assessment of their food and eating habits (e.g. “*Food and meals are positive elements*”). Respondents were asked to indicate their degree of agreement with the five statements using a 6-level Likert scale (1: completely disagree; 6: completely agree). This study used the Spanish-language version of the SWFoL which has shown good internal consistency in previous cross-sectional, longitudinal and cross-cultural studies with adolescents, youth and adults (Schnettler et al. 2015a, b, c, 2017a, c, d). In this study, the SWFoL showed a good level of internal consistency (Cronbach’s α mothers = 0.864, children = 0.906). The SWFoL score is the sum of the 5 items of the scale. Higher scores indicate more satisfaction with food-related life.
- **Satisfaction with Family Life Scale:** the Satisfaction with Family Life scale (SWFaL), proposed by Zabriskie and McCormick (2003), is a modified version of the SWLS (Diener et al. 1985) in which the words “family life” replace the word “life” in each of the five original SWLS items. Family satisfaction can be defined as a conscious cognitive judgment of one’s family life where the judgment criteria are up to the individual (Zabriskie and Ward 2013). The SWFaL has shown good internal consistency in previous studies in samples of families from the US, Canada, UK, Australia and New Zealand when the five items were grouped into a single dimension (Zabriskie and Ward 2013). Respondents were asked to indicate their degree of agreement with the five statements using a 6-level Likert scale (1: completely disagree; 6: completely agree). This study used the Spanish-language version of the SWFaL which showed good internal consistency in a previous study with undergraduate students and adolescents in Chile (Schnettler et al. 2017c, d). In this study, the Spanish version of the SWFaL also showed a good level of internal consistency (Cronbach’s α mothers = 0.927, children = 0.923). The SWFaL score is the sum of the 5 items of the scale. Higher scores indicate higher life satisfaction.

The discriminant validity of the SWLS, SWFoL and SWFaL was previously demonstrated in samples of

undergraduate students and adolescents in Chile (Schnettler et al. 2017c, d).

Finally, mothers and children were asked about their age. Mothers were asked about their civil status, number of family members, number of children and the gender of the main breadwinner. Education level and occupation of the main breadwinner were used to determine the family's socioeconomic status (Adimark 2004).

Data Analysis

Descriptive statistics were derived for each variable. Frequency distributions were obtained and the mean and standard deviation were calculated for continuous variables. In order to find differences between the single mother and married or cohabiting mother subsamples, a Chi-square test was applied for discrete variables and an independent samples *t*-test was applied for continuous variables.

Following McCurdy and Gorman (2010), a principal component factor analysis (PCA) with varimax rotation was used to verify the underlying components of the FFBS in the mother sample ($n = 470$). The PCA was implemented using the Statistical Package for Social Sciences (IBM SPSS) v. 23.

Confirmatory factor analysis (CFA) was used to validate the structure of the FFBS detected by the PCA and to measure relationships between the components. This analysis was conducted separately for each subsample: single mothers, married or cohabiting mothers, children of single mothers and children of married or cohabiting mothers. The two-step procedure recommended by Anderson and Gerbing (1988) was followed to separately measure the relationships between satisfaction with food-related life and satisfaction with family life and the association between both constructs with life satisfaction in the mothers and children samples. First, a measurement model was estimated using CFA and a structural equation model (SEM) was used to test relationships considering the FFBS components as well as SWLS, SWFaL and SWFoL. To conduct CFA and SEM, the software LISREL 8.8 (Scientific Software International, Inc. Chicago 2007) was used. The parameters were estimated by robust maximum likelihood.

In terms of construct validity, we assessed convergent validity by inspecting the standardized factor loadings of each scale (ideally >0.5) as well as their significance, composite reliability (values >0.7) and average variance extracted (AVE, values >0.5) (Hair et al. 2007). Discriminant validity was obtained by comparing the AVE for each construct with the square of the correlation between the scales (Lévy and Varela 2006).

Various indicators were used to evaluate the goodness of fit for the models: the comparative fit index (CFI), the goodness-of-fit index (GFI), the adjusted goodness-

of-fit index (AGFI) and the root mean square error of approximation (RMSEA). A model fits reasonably well if CFI, GFI and AGFI are greater than 0.90 and if the RMSEA is below 0.08 (Kline 2011).

Results

Sample Description

Seventy-five per cent of the mothers from the dual-headed families were married and 25% were mothers cohabiting with their partners. Regarding marital status, 51.8% of mothers from single-headed families were single, 41.7% were divorced and 6.5% were widows. Table 1 shows the sociodemographic characteristics of the total sample and subsamples. The married or cohabiting mothers subsample had a significantly higher average number of family members ($p \leq 0.001$) and children ($p \leq 0.001$) than the single mothers subsample. In addition, the married or cohabiting mothers had a greater proportion of male children and the single mothers a higher proportion of female children ($p \leq 0.001$). In the single mothers sample, there was a greater proportion of females acting as the main breadwinner of the household compared to the married or cohabiting mother's sample. Both subsamples did not differ in the other sociodemographic characteristics examined ($p > 0.1$). Married or cohabiting mothers had significantly higher average scores in the SWFaL and SWLS than single mothers ($p \leq 0.05$). Similar results were obtained for children from married or cohabiting mothers compared with children from single mothers ($p \leq 0.05$). Mothers and children did not differ in their SWFoL scores according to family structure ($p > 0.1$).

Reliability and Validity of the Measurement Models

Using PCA in the mothers subsample, three components were detected on the FFBS that grouped 9 of the 20 original items (Table 2), with an explained variance of 66.1%: "Maternal control of child snacking behaviour" (henceforth Control), "Maternal presence during eating" (henceforth Presence) and "Child involvement in food consumption" (henceforth Choice). The three components showed acceptable levels of internal consistency in the mothers sample. Item "My child wanders during meals" was eliminated because its factor loading was below 0.4. Items "Child has a regular snack and meal-time routine", "My child and I eat at fast food restaurants", "I allow my child to take food between meals" were eliminated because they presented communality values below 0.4. Items "When my child eats I am in another room", "My child eats snacks/meals whenever s/he wants", "My child and I watch TV while eating meals", "Child eats and watches TV at mealtimes", "I allow my child to eat snacks whenever s/he

Table 1 Socio-demographic characteristics and average scores on the Satisfaction with food-related (SWFoL), Satisfaction with family life (SWFaL) and Satisfaction with life (SWLS) scales of the sample

Characteristic	Total (<i>n</i> = 470)	Single mothers (<i>n</i> = 170)	Married or cohabiting mothers (<i>n</i> = 300)	<i>p</i> value
Mothers Age [Mean (<i>SD</i>)] ^a	41.4 (7.2)	41.2 (7.8)	41.6 (6.8)	0.574
Children age [Mean (<i>SD</i>)] ^a	13.3 (2.3)	13.3 (2.4)	13.2 (2.3)	0.633
Number of family members [Mean (<i>SD</i>)] ^a	4.1 (1.3)	3.6 (1.5)	4.4 (1.1)	0.000
Number of children [Mean (<i>SD</i>)] ^a	2.3 (1.0)	2.2 (1.1)	2.4 (1.0)	0.007
Mothers SWFoL [Mean (<i>SD</i>)] ^a	22.7 (4.9)	22.5 (5.2)	22.8 (4.7)	0.573
Mothers SWFaL [Mean (<i>SD</i>)] ^a	23.9 (5.0)	23.1 (5.0)	24.4 (5.0)	0.007
Mothers SWLS [Mean (<i>SD</i>)] ^a	23.4 (4.9)	22.6 (4.9)	23.8 (4.8)	0.008
Children SWFoL [Mean (<i>SD</i>)] ^a	22.6 (6.3)	22.2 (6.4)	22.8 (6.2)	0.350
Children SWFaL [Mean (<i>SD</i>)] ^a	24.1 (5.7)	23.3 (5.9)	24.5 (5.6)	0.026
Children SWLS [Mean (<i>SD</i>)] ^a	23.9 (5.6)	23.2 (5.6)	24.3 (5.5)	0.052
Children gender (%) ^b				
Female	52.3	58.8	48.7	0.034
Male	47.7	41.2	51.3	
Gender of the breadwinner (%) ^b				
Female	42.3	18.2	80.0	0.000
Male	57.7	81.8	20.0	
Studies of the breadwinner (%) ^b				
Elementary	10.5	11.3	10.0	0.497
Secondary	48.3	44.6	50.3	
University	41.2	44.0	39.7	
Socioeconomic status (%) ^b				
High and upper-middle	16.7	16.0	17.0	0.488
Middle-Middle	20.3	23.5	18.7	
Lower-Middle	33.1	29.6	35.0	
Low	23.6	22.8	24.0	
Very low	6.3	8.0	5.3	

^aIndependent sample t-test^bPearson Chi-Square Test

wants”, “I decide the time when my child eats meals” and “Child shops for food with me” were eliminated because they did not load on a single factor.

Results for CFA indicated that the composite reliability of the Control, Presence and Choice components of the FFBS were good (close or above 0.7) in all four subsamples (Table 3). The three components also satisfied the AVE values (close or above to 0.5) of the four subsamples. The standardized factor loadings for all items in each factor were above 0.5 and statistically significant. Thus, we concluded that there was convergent validity in the four subsamples. Control correlated positively with Presence in the four subsamples, but the correlation values were significant only for the married or cohabiting mothers, children of married or cohabiting mothers and children of single mothers ($p \leq 0.01$) subsamples. Control correlated negatively with Choice in the four subsamples, but the correlation value was significant only for the married or cohabiting mothers ($p \leq 0.01$) subsample. Presence

correlated negatively with Choice in the married or cohabiting mothers subsample, although the correlation was not significant. In the rest of subsamples, the correlation between these components was positive, but significant only in the children of single mothers subsample ($p \leq 0.01$). The value of the squared correlation between Control and Presence was lower than the AVE of the factors, which verified the discriminant validity between the constructs in the four subsamples. The discriminant validity between Control and Child and between Presence and Child was also verified (Lévy and Varela 2006). The CFA performed with the 9 items of the FFBS meant that the three-component structure found using PCA could be validated with a good goodness-of-fit in the single mothers (RMSEA = 0.026, CFI = 0.99, GFI = 0.97, AGFI = 0.94), married or cohabiting mothers (RMSEA = 0.025, CFI = 0.99, GFI = 0.98, AGFI = 0.96), children of single mothers (RMSEA = 0.052, CFI = 0.96, GFI = 0.96, AGFI = 0.92) and children of married or cohabiting mothers

Table 2 Results of exploratory factor analysis for the Family Food Behaviour Survey (FFBS) in the mothers sample

Items	Component		
	Control	Presence	Choice
I decide my child’s snack time	0.869	0.078	0.004
I decide how many snacks child has	0.825	0.066	−0.092
I decide what child eats between meals	0.801	0.127	−0.071
My child and I sit and eat together	0.086	0.866	0.013
I sit down with child when s/he eats	0.066	0.847	−0.012
I eat dinner with child	0.112	0.749	−0.022
Child chooses food items while shopping	−0.054	0.079	0.781
Child chooses foods from what is served	−0.022	0.023	0.772
Child chooses which food to have for meals	−0.070	−0.126	0.737
Variance explained by component (%)	23.4	23.1	19.6
Cumulative variance (%)	23.4	46.5	66.1
Cronbach’s α per component	0.789	0.760	0.647

Extraction method: Principal components analysis, Rotation method: Varimax with Kaiser Normalization. Rotation has converged in 5 iterations. Measure of sampling adequacy: Keiser-Meyer-Olkin (KMO) = 0.700. Bartlett’s Test of Sphericity, approximate Chi-square = 1045.055; df = 36; $p = 0.000$. Note: the remaining item should qualified the following standards: the eigenvalues of each extracted factor should be more than 1.000; the factor loadings of each reserved item should be more than 0.40; each item should be only loaded on a single factor; each factor should include at least 3 items

(RMSEA = 0.049, CFI = 0.97; GFI = 0.97, AGFI = 0.94) subsamples.

Based on the above results, we compared the z-score of each detected component in the FFBS between single and married or cohabiting mothers and also between children from both family structures using independent sample t-tests. There were only statistical differences between children in the Choice component (results not shown). Children of single mothers had a significantly higher z-score compared with children of married or cohabiting mothers ($p \leq 0.05$).

Results for CFA with correlated latent constructs indicated that the SWLS, SWFoL and SWFaL scales satisfied the composite reliability test (above 0.7) in the mothers and children subsamples (Table 4). The scales also satisfied the AVE values in both subsamples (above to 0.5). The value of the squared correlation between the SWLS and SWFoL was lower than the AVE of the scales, which verified the discriminant validity between the constructs in both subsamples. The discriminant validity between SWLS and SWFaL and between SWFoL and SWFaL was also verified in both subsamples (Lévy and Varela 2006). The CFA showed a good goodness-of-fit in the mothers (RMSEA = 0.060, CFI = 0.99, GFI = 0.94, AGFI = 0.91) and children (RMSEA = 0.059, CFI = 0.99, GFI = 0.94, AGFI = 0.92) subsamples.

Table 3 Composite reliabilities, average variance extracted (AVE), correlations and squared correlations between the three FFBS components in mothers and children according to family structure

Subscale	Composite reliability	AVE	Control	Presence	Choice
<i>Single-headed households</i>					
Mothers (n = 170)					
Control	0.735	0.481	–	0.032	0.029
Presence	0.769	0.531	0.18	–	0.014
Choice	0.706	0.446	−0.17	0.12	–
Children (n = 170)					
Control	0.775	0.539	–	0.129	0.0036
Presence	0.680	0.417	0.36 *	–	0.057
Choice	0.722	0.466	−0.06	0.24 *	–
<i>Dual-headed households</i>					
Mothers (n = 300)					
Control	0.816	0.598	–	0.078	0.0256
Presence	0.785	0.554	0.28 *	–	0.0025
Choice	0.660	0.393	−0.16 *	−0.05	–
Children (n = 300)					
Control	0.795	0.566	–	0.110	0.0009
Presence	0.746	0.500	0.34 *	–	0.0001
Choice	0.702	0.441	−0.03	0.01	–

The values over diagonal indicate squared correlations between constructs

The values under diagonal indicate correlations between constructs
* $p \leq 0.01$

Table 4 Composite reliabilities, average variance extracted (AVE), squared correlations between the Satisfaction with Food-related Life scale (SWFoL), Satisfaction with Family Life (SWFaL) scale Satisfaction with Life Scale (SWLS) in mothers and children

Subscale	Composite reliability	AVE	SWFoL	SWFaL	SWLS
Mothers (n = 470)					
SWFoL	0.856	0.545	–	0.31	0.27
SWFaL	0.930	0.727	0.56 *	–	0.55
SWLS	0.898	0.639	0.52 *	0.74 *	–
Children (n = 470)					
SWFoL	0.905	0.657	–	0.32	0.32
SWFaL	0.928	0.721	0.57 *	–	0.62
SWLS	0.918	0.692	0.57 *	0.79 *	–

The values over diagonal indicate squared correlations between constructs

The values under diagonal indicate correlations between constructs
* $p \leq 0.01$

Exploring Relationships with Structural Equation Model

The structural equation model for single mothers had an acceptable goodness-of-fit (RMSEA = 0.075, CFI = 0.95, GFI = 0.90, AGFI = 0.90). Path coefficients between Control and SWFoL and between Control and SWFaL were negative but not significant (Fig. 1). Similar results were obtained in the case of the Choice component. Path coefficients between Presence and SWFoL and between Presence and SWFaL were positive and statistically significant, although according to Cohen (1988), both relationships are considered of low strength. Path coefficients between SWFoL and SWLS and between SWFaL and SWLS were positive and significant. According to Cohen (1988), the relationship between SWFoL and SWLS is considered medium strength, whereas

the relationship between SWFaL and SWLS is considered high strength.

Figure 2 shows the results of the structural model for children of single mothers, which also had an acceptable goodness-of-fit (RMSEA = 0.072, CFI = 0.96, GFI = 0.91, AGFI = 0.90). Similar to the findings obtained in the subsample of single mothers, there were negative non-significant relationships between Control and SWFoL and between Control and SWFaL. Although path coefficients between Presence and SWFoL and between Presence and SWFaL were both positive, only the relationship between Presence and SWFaL was significant. However, this relationship, according to Cohen (1988) corresponded to low strength. Path coefficients between Choice and SWFoL and between Choice and SWFaL were also negative. However, in this subsample, only the last relationship was significant but was also considered to be of low

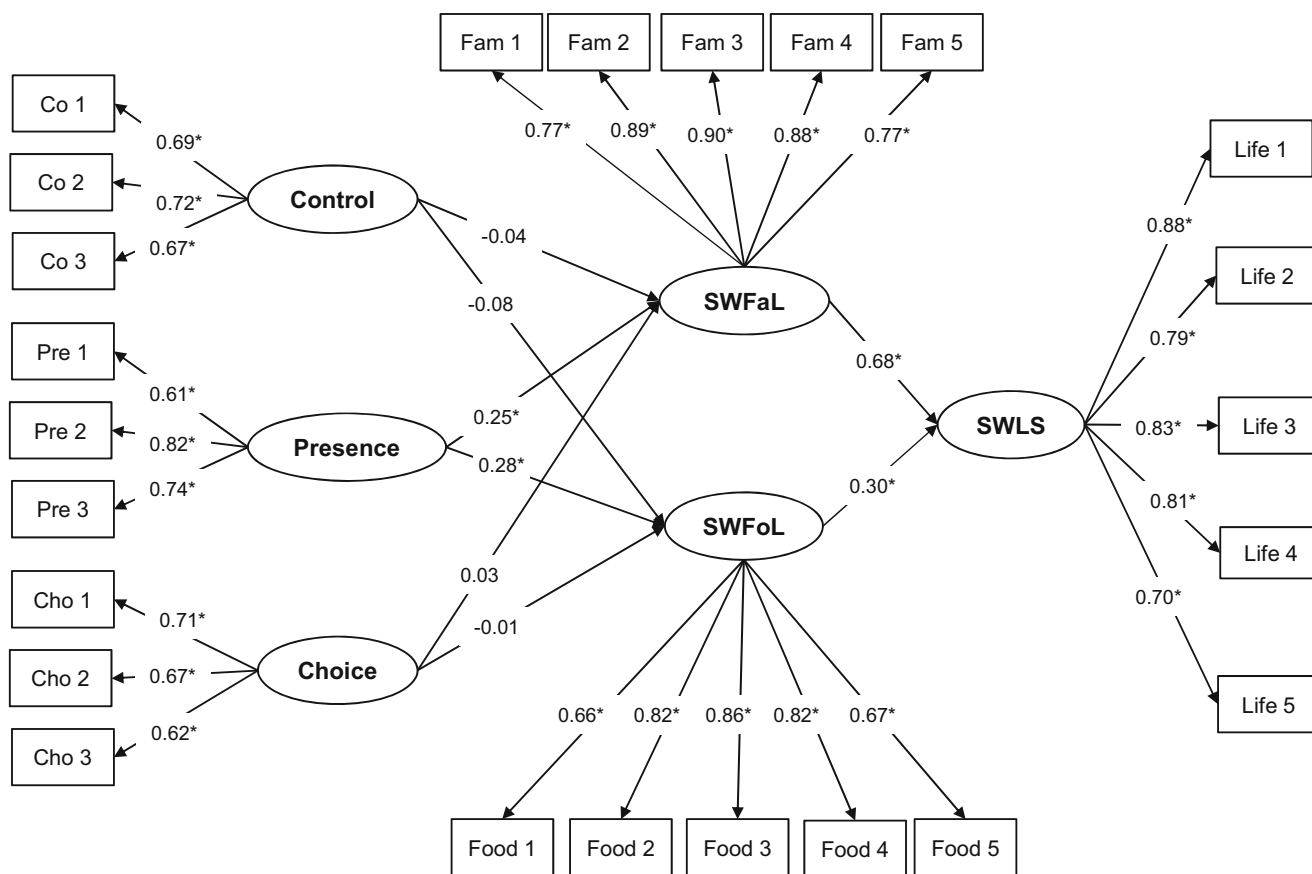


Fig. 1 Structural equation model that explains the relationship between maternal control (Control), maternal presence (Presence), child choice (Choice) and Satisfaction with Family Life (SWFaL) and Satisfaction with Food-related Life (SWFoL), and between SWFoL, SWFaL and Satisfaction with Life (SWLS) in the single mothers subsample. * $p < 0.01$. Life 1. In most ways my life is close to my ideal. Life 2. The conditions of my life are excellent. Life 3. I am satisfied with my life. Life 4. So far I have gotten the important things I want in life. Life 5. If I could live my life over, I would change almost nothing. Food 1. Food and meals are positive elements. Food 2. I am generally pleased with my food. Food 3. My life in relation to food and meals is close to ideal. Food 4. With regard to food, the conditions of my life are excellent. Food 5. Food and

meals give me satisfaction in daily life. Fam 1. In most ways my family life is close to my ideal. Fam 2. The conditions of my family life are excellent. Fam 3. I am satisfied with my family life. Fam 4. So far I have gotten the important things I want in family life. Fam 5. If I could live my family life over, I would change almost nothing. Co 1. I decide my child's snack time. Co 2. I decide how many snacks child has. Co 3. I decide what child eats between meals. Pre 1. My child and I sit and eat together. Pre 2. I sit down with child when s/he eats. Pre 3. I eat dinner with child. Cho 1. Child chooses food items while shopping. Cho 2. Child chooses foods from what is served. Cho 3. Child chooses which food to have for meals

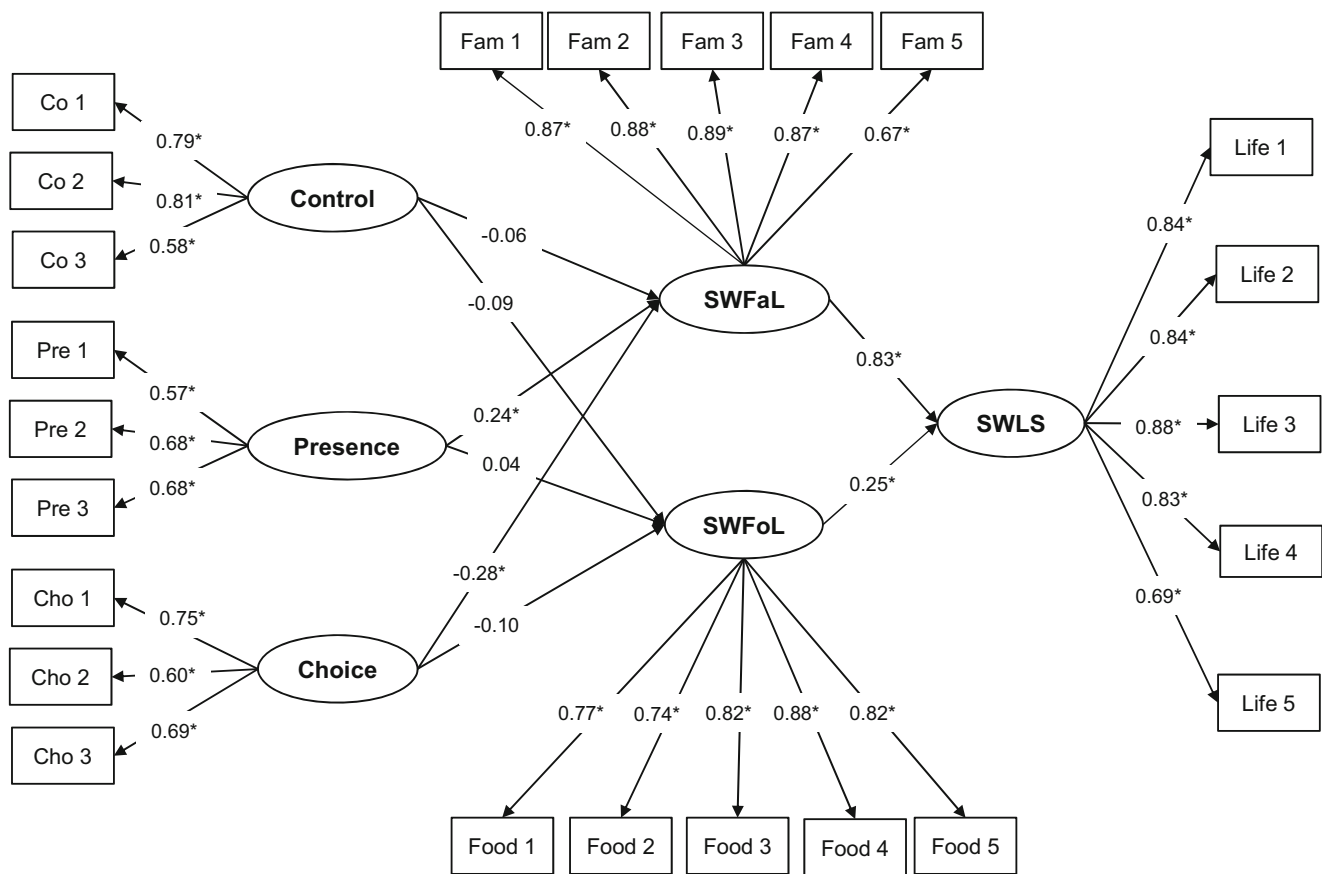


Fig. 2 Structural equation model that explains the relationship between maternal control (Control), maternal presence (Presence), child choice (Choice) and Satisfaction with Family Life (SWFaL) and Satisfaction with Food-related Life (SWFoL), and between SWFoL, SWFaL and Satisfaction with Life (SWLS) in the children of single mothers subsample. * $p < 0.01$. Life 1. In most ways my life is close to my ideal. Life 2. The conditions of my life are excellent. Life 3. I am satisfied with my life. Life 4. So far I have gotten the important things I want in life. Life 5. If I could live my life over, I would change almost nothing. Food 1. Food and meals are positive elements. Food 2. I am generally pleased with my food. Food 3. My life in relation to food and meals is close to ideal. Food 4. With regard to food, the conditions of my life are excellent. Food 5. Food

and meals give me satisfaction in daily life. Fam 1. In most ways my family life is close to my ideal. Fam 2. The conditions of my family life are excellent. Fam 3. I am satisfied with my family life. Fam 4. So far I have gotten the important things I want in family life. Fam 5. If I could live my life over, I would change almost nothing. Co 1. My mother decides my snack time. Co 2. My mother decides how many snacks I have. Co 3. My mother decides what I eat between meals. Pre 1. My mother and I sit and eat together. Pre 2. My mother sit down with me when I eat. Pre 3. I eat dinner with my mother. Cho 1. I choose food items while shopping. Cho 2. I choose foods from what is served. Cho 3. I choose which food to have for meals

strength. In this subsample, path coefficients between SWFoL and SWLS and between SWFaL and SWLS were also positive and significant. In this case, the relationship between SWFoL and SWLS is considered low strength, whereas the relationship between SWFaL and SWLS is considered high strength.

The structural model for married or cohabiting mothers also had an acceptable goodness-of-fit (RMSEA = 0.064, CFI = 0.97, GFI = 0.93, AGFI = 0.91). In this subsample, the path coefficient between Control and SWFoL was negative, and between Control and SWFaL was positive, although both relationships were not significant (Fig. 3). Path coefficients between Presence and SWFoL and between Presence and SWFaL were positive and statistically significant, but, in this case, both relationships are considered medium strength. Path coefficients between Choice and SWFoL and between Choice and SWFaL were both positive and significant, although these relationships

were considered to be of low strength. Path coefficients between SWFoL and SWLS and between SWFaL and SWLS were positive and significant. Again, the relationship between SWFoL and SWLS is considered low strength, whereas the relationship between SWFaL and SWLS is considered high strength.

Figure 4 shows the results of the structural model for children of married or cohabiting mothers, which also had an acceptable goodness-of-fit (RMSEA = 0.064, CFI = 0.97, GFI = 0.92, AGFI = 0.91). Contrary to previous findings, there was a positive relationship between Control and SWFoL and between Control and SWFaL, although both relationships were not significant. Path coefficients between Presence and SWFoL and between Presence and SWFaL were positive and statistically significant, although both relationships are considered low strength. Path coefficients between Choice and SWFoL and between Choice and SWFaL were

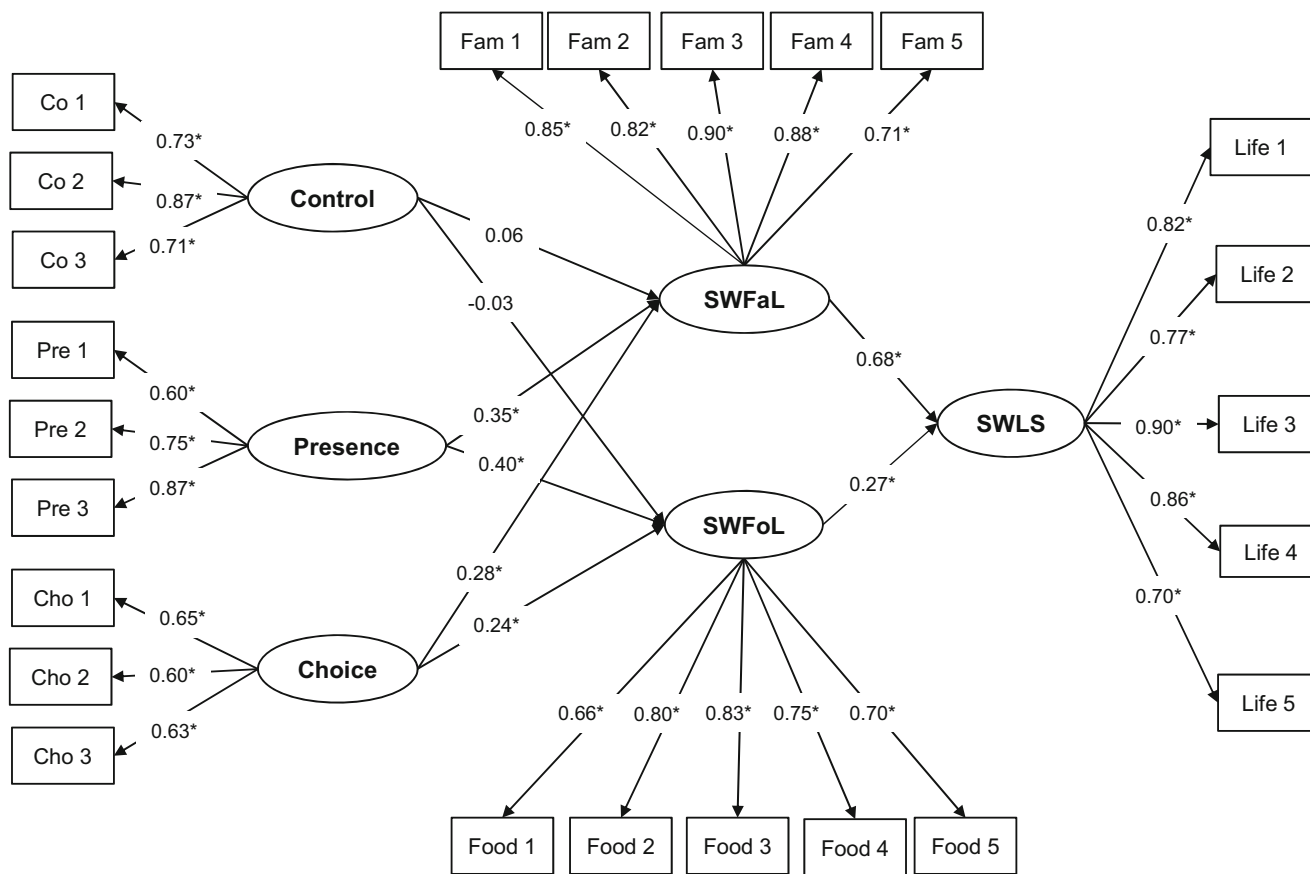


Fig. 3 Structural equation model that explains the relationship between maternal control (Control), maternal presence (Presence), child choice (Choice) and Satisfaction with Family Life (SWFaL) and Satisfaction with Food-related Life (SWFoL), and between SWFoL, SWFaL and Satisfaction with Life (SWLS) in the married or cohabiting mothers subsample. * $p < 0.01$. Life 1. In most ways my life is close to my ideal. Life 2. The conditions of my life are excellent. Life 3. I am satisfied with my life. Life 4. So far I have gotten the important things I want in life. Life 5. If I could live my life over, I would change almost nothing. Food 1. Food and meals are positive elements. Food 2. I am generally pleased with my food. Food 3. My life in relation to food and meals is close to ideal. Food 4. With regard to food, the conditions of my life are excellent. Food 5.

Food and meals give me satisfaction in daily life. Fam 1. In most ways my family life is close to my ideal. Fam 2. The conditions of my family life are excellent. Fam 3. I am satisfied with my family life. Fam 4. So far I have gotten the important things I want in family life. Fam 5. If I could live my family life over, I would change almost nothing. Co 1. I decide my child’s snack time. Co 2. I decide how many snacks child has. Co 3. I decide what child eats between meals. Pre 1. My child and I sit and eat together. Pre 2. I sit down with child when s/he eats. Pre 3. I eat dinner with child. Cho 1. Child chooses food items while shopping. Cho 2. Child chooses foods from what is served. Cho 3. Child chooses which food to have for meals

negative and non-significant. In this subsample, path coefficients between SWFoL and SWLS and between SWFaL and SWLS were also positive and significant. In this subsample, the relationship between SWFoL and SWLS is considered low strength, whereas the relationship between SWFaL and SWLS also is considered high strength.

In the four subsamples, when significant paths were found between any of the FFBS components and SWFoL or SWFaL, we tested an additional path between the FFBS component and the SWLS. However, none of these paths were significant.

Discussion

The primary focus of this study was to explore the relationship between food-related parenting practices assessed by the

FFBS and the satisfaction with food-related life and satisfaction with family life in mothers-adolescent children dyads with different family structures. Second, this study sought to assess the relationships between satisfaction with food-related life and life satisfaction and between satisfaction with family life and life satisfaction in mothers and their children. Based on the responses of the mothers subsample to the original version of FFBS, PCA allowed three components to be detected: “Maternal control of child snacking behaviour”, “Maternal presence during eating” and “Child involvement in food consumption”. Our results are partially consistent with those obtained by McCurdy and Gorman (2010), since they detected three similar components within a sample of mothers with children aged 2–11 years old. However, the component “Organization of the eating environment” that was found by these authors was not detected in this study. This may be

related to the age of the children in the studied sample (10–17 years old adolescents). In addition, our “maternal control” component differs from the “maternal control” factor detected by McCurdy and Gorman (2010), as our factor refers mainly to snacking and food consumption between meals. This finding is consistent with the evidence indicating that reducing between-meal snacking is a challenge for parents with adolescent children (Roach et al. 2017).

It is noteworthy that the CFA allowed the three-component structure of the nine-item version of the FFBS to be validated in the subsamples of single mothers, married or cohabiting mothers, children of single mothers and children of married or cohabiting mothers. Similar to what was reported by McCurdy and Gorman (2010), we found that Control correlated positively and significantly with Presence, except in the single-mothers subsample. This indicates that as maternal presence when the child eats increased, mothers were more likely to control (McCurdy and Gorman 2010), but not in the single-mothers subsample. Likewise, we also found Control correlated negatively with Choice in the four subsamples, but the correlation was significant only in the subsample of married or cohabiting mothers. Therefore, this relationship only indicates a greater maternal control corresponding to reduced child choice in this subsample (McCurdy and Gorman 2010). Surprisingly, Presence and Choice correlated positively and significantly in the subsample of children of single mothers, which indicates that greater child choice is more likely when mothers are present when the child eats. This contradicts the results obtained by McCurdy and Gorman (2010), but these authors’ study sample did not account for differences in family structure. One possible explanation may relate to the fact that adolescents take the chance to influence household eating habits when their mother eats with them, as they probably do not have the opportunity when their mothers are not present and children must eat the meal that their mothers have left prepared. Nevertheless, more research is needed to verify this finding.

The results of the CFA that correlated to SWLS, SWFoL and SWFaL constructs in the mothers subsample confirm the positive relationship between satisfaction with food-related life and life satisfaction that has been previously reported in adults and university students (Schnettler et al. 2013, 2014, 2015a, c, 2016, 2017c). Nevertheless, the positive and high correlation between these constructs should be highlighted in the adolescent subsample. Also, the CFA results confirm the positive relationship between satisfaction with family life and overall life satisfaction found in a previous study within a sample of university students (Schnettler et al. 2017c). In addition, these results agree with studies that report that family relationships are strongly linked to subjective well-being in adults (Botha and Booyesen 2014; Loewe et al. 2014) and in adolescents (González-Carrasco et al. 2017; Lee and Yoo 2015). The CFA results indicate that the relationship between

satisfaction with family life and life satisfaction was higher than the relationship between satisfaction with food-related life and life satisfaction in both subsamples. These findings confirm the results obtained by Schnettler et al. (2017c), which found that the family domain is more important than the food domain with respect to overall life satisfaction. Nevertheless, in the aforementioned study examining university students, the relationship between SWFoL and SWLS was low strength and the relationship between SWFaL and SWLS was medium strength. The results of this study found that both relationships are high strength in the mothers and children subsamples. In this regard, Pavot and Diener (1993) indicated that individuals are likely to assign different weights to each component of high well-being. Yet from our results, it is possible to suggest that weights for each component are different in distinct life stages.

Regarding the relationship between food-related parenting practices and the satisfaction with food-related life and satisfaction with family life, some results were contrary to what was expected. The SEM analysis showed that there were non-significant relationships between Control and SWFaL and between Control and SWFoL in the four subsamples, even though adolescence is associated with increasing autonomy from parents in their food choices (Ferris et al. 2017; Olsen and Ruiz 2008; Pearson et al. 2017) and control is sometimes a source of tension during family meals (Jarosz 2017). Nevertheless, since the Control component refers to maternal control of child snacking behaviour, the non-significant relationships found in this study may be related to the fact that adolescents may be home alone or with peers and/or siblings after school. Thus, snacks may often be consumed during occasions that are unsupervised by an adult (Reicks et al. 2015).

Conversely, SEM results show that the relationships between Presence and SWFaL were positive and significant in the four subsamples. These findings are congruent with previous studies that stress the affective dimension of meals as a moment of family unity (Ramalho et al. 2016; Speirs et al. 2016), in which family members interact, preserve relationship closeness, resolve conflicts, express love and provide emotional support (Berge et al. 2013; Salvy et al. 2017; Speirs et al. 2016; Schnettler et al. 2016). Nevertheless, differences in the values of the relationships between the subsamples should be highlighted. Whereas the correlation values are similar in the subsamples of single mothers, children of single mothers and children of married or cohabiting mothers (low strength), the correlation between Presence and SWFaL corresponds to a medium strength relationship in the subsample of married or cohabiting mothers. Therefore, it seems that the maternal presence when children eat is more beneficial for the married or cohabiting mothers’ satisfaction with family life, than for their children and for single mothers and their children. On the other hand, relationships between Presence

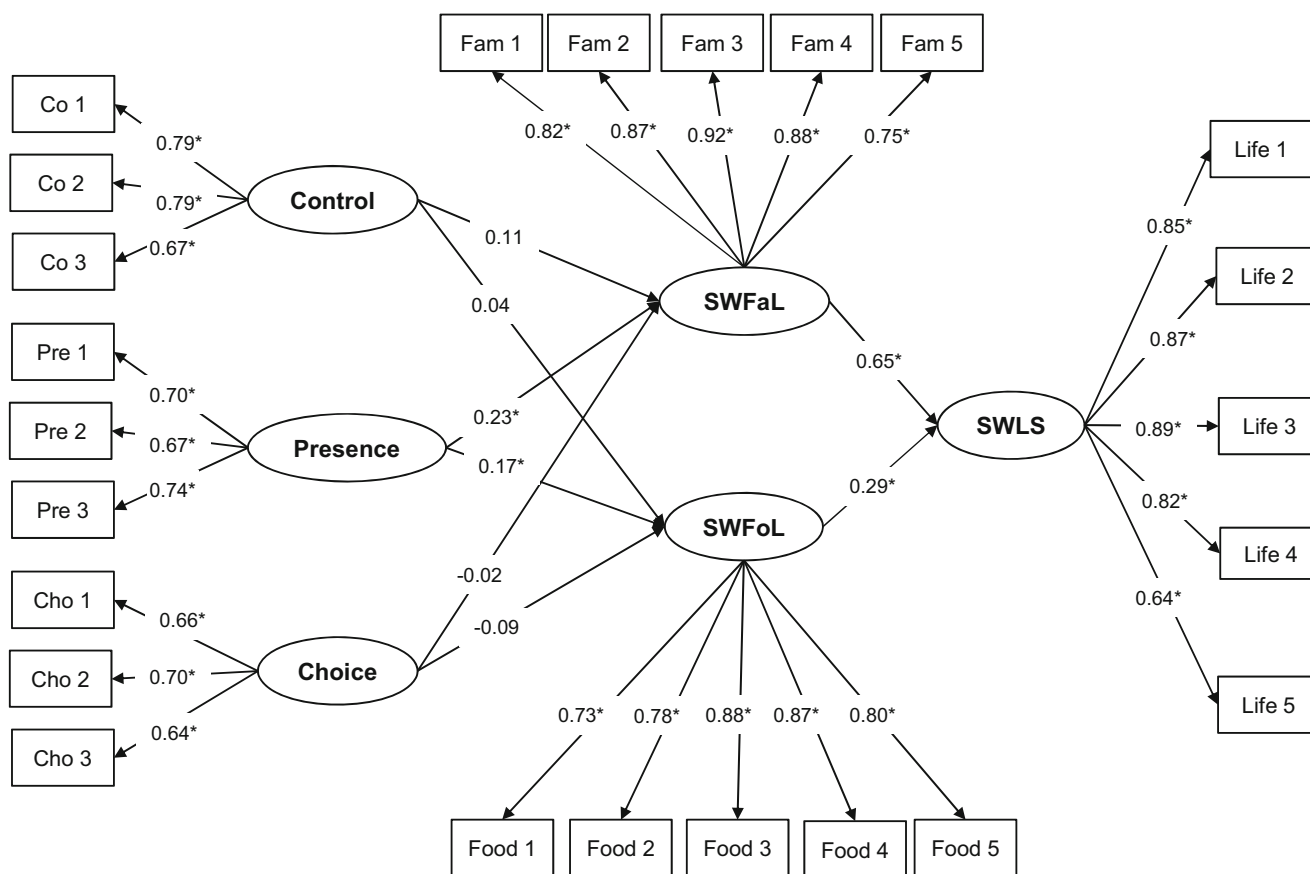


Fig. 4 Structural equation model that explains the relationship between maternal control (Control), maternal presence (Presence), child choice (Choice) and Satisfaction with Family Life (SWFaL) and Satisfaction with Food-related Life (SWFoL), and between SWFoL, SWFaL and Satisfaction with Life (SWLS) in the children of married or cohabiting mothers subsample. * $p < 0.01$. Life 1. In most ways my life is close to my ideal. Life 2. The conditions of my life are excellent. Life 3. I am satisfied with my life. Life 4. So far I have gotten the important things I want in life. Life 5. If I could live my life over, I would change almost nothing. Food 1. Food and meals are positive elements. Food 2. I am generally pleased with my food. Food 3. My life in relation to food and meals is close to ideal. Food 4. With regard to food, the conditions of my life are

excellent. Food 5. Food and meals give me satisfaction in daily life. Fam 1. In most ways my family life is close to my ideal. Fam 2. The conditions of my family life are excellent. Fam 3. I am satisfied with my family life. Fam 4. So far I have gotten the important things I want in family life. Fam 5. If I could live my family life over, I would change almost nothing. Co 1. My mother decides my snack time. Co 2. My mother decides how many snacks I have. Co 3. My mother decides what I eat between meals. Pre 1. My mother and I sit and eat together. Pre 2. My mother sits down with me when I eat. Pre 3. I eat dinner with my mother. Cho 1. I choose food items while shopping. Cho 2. I choose foods from what is served. Cho 3. I choose which food to have for meals

and SWFoL were positive and significant in the subsamples of single mothers, married or cohabiting mothers and their children. Since higher levels of satisfaction with food-related life have been positively associated with greater parental support, better eating habits and greater frequency and importance assigned to family meals (Schnettler et al. 2013, 2015a, b, 2016), a positive relationship between Presence and SWFoL would be in line with the positive association between a high frequency of family meals and a healthier diet (Berge et al. 2013; Larson et al. 2017; Haines et al. 2016; Hebestreit et al. 2017; Reicks et al. 2015; Watts et al. 2017). Conversely, the lack of a significant relationship between Presence and SWFoL in the children of single mothers subsample may be related to the results of studies that have reported that adolescents in single parent families are more likely to have unhealthy eating habits compared to children living with both

parents (Baek et al. 2014; Reicks et al. 2015; Stewart and Menning 2009) and a lower frequency of family meals (Baek et al. 2014; Jarosz 2017; Reicks et al. 2015). The differences found between mothers and their children in the values of the relationships between Presence and SWFoL are noteworthy. Again, maternal presence when children eat was found to be more beneficial for the married or cohabiting mothers' satisfaction with food-related life than for their children. Likewise, whereas there is a positive and significant relationship between Presence and SWFoL in the single mothers subsample, the relationship is not significant in their children. One possible explanation may be associated with the evidence indicating that higher levels of satisfaction with food-related life are positively associated with a greater frequency of family meals in adults (Schnettler et al. 2015a, b, 2016), but it seems that maternal presence during eating may

be irrelevant regarding the level of satisfaction with food-related life of children of single-mothers.

In the single mothers and children of married or cohabiting mothers subsamples, the relationships between Choice and SWFoL and between Choice and SWFaL were negative and non-significant. These findings contradict the positive influence of child involvement in food preparation in physical, social and psychological aspects during the adolescence, which are related to better family relationships (Alm et al. 2015; Reicks et al. 2015). Conversely, in the subsample of married or cohabiting mothers, both relationships were positive and significant. This may be associated with some of the barriers to having more frequent family meals described by married mothers, such as busy schedules and the lack of time, having children who are picky eaters, limited cooking skills and being tired (Berge et al. 2013). Nevertheless, most of these barriers also affect the frequency of family meals in single mothers (Berge et al. 2013). Even so, it is expected that these situations would be higher barriers in the subsample of single mothers of the present study, since 80% of them are also the main breadwinner of their households, given that a recent study suggest that mothers' employment status may have a more relevant role in the use of some food-related parenting practices than family structure (Schnettler et al. 2018). However, one possible explanation may be the higher average of children in the married or cohabiting mothers subsample. In fact, it is expected that the greater the number of children, the more demands they make. Therefore, if child involvement in food consumption increases, it is possible that the mother's workload and concerns associated with the preparation of meals decrease, positively affecting both satisfaction with food-related life and family life. In the subsample of children of single mothers, both relationships were negative but the relationship between Choice and SWFaL was statistically significant, indicating that children who are more involved in food consumption are less satisfied with their family life. This finding contradicts previous studies reporting that adolescents want make their own decisions regarding what they eat (Olsen and Ruiz 2008) and influence their parents' food choices (Alm et al. 2015). Nevertheless, it is possible to suggest that the family structure of these children could result in older children or adolescents taking care of themselves with respect to preparing and eating meals (Reicks et al. 2015). This is because they may have to be involved in food preparation due to their mothers' workload and time commitments (Berge et al. 2012; Jarosz 2017). So to these children, "involvement in food consumption" may feel more like a burden than an opportunity to influence their mother's food choices, which may explain that "Choice" negatively affects their satisfaction with family life. In fact, a significantly higher z-score from children of single-mothers in the Choice component indicates that they may be forced to become more involved in food and meal decisions.

The above results stress the differences among mothers and children with different family structure. However, at the same time, they emphasize the importance of not only relying exclusively on a parents' assessment of a child's behaviour as this may not reflect a child's actual behaviour or perceptions (Fries et al. 2017). Similar to the findings of Musher-Eizenman and Kiefner (2013), we found differences between what mothers report they currently do and the perception of adolescents about these practices and their relationships with satisfaction with food-related and family life. In single-headed households, the maternal presence during eating correlated positively and significant with SWFoL only for mothers. On the contrary, the child involvement in food consumption shows a non-significant relationship to SWFoL and SWFaL for mothers, but a negative and significant relationship with SWFaL in their children. In dual-headed households, the main difference between mothers and their children was the positive relationships between child involvement in food consumption and SWFoL and SWFaL in mothers and a lack of significant correlations in their children. Although more research is needed in order to deeply understand these differences and their causes, the results of this exploratory study stress that food-related parenting practices may affect the subjective well-being of mothers and their children in different ways, which, in turn, also differ between single and dual-headed households. Therefore, it is important that mothers monitor whether their food-related parenting practices have the intended effects on their children from both physical and psychological perspectives.

The SEM results in the four subsamples also confirm the positive relationship between satisfaction with family life and overall life satisfaction and the positive relationship between satisfaction with food related-life and satisfaction with life, findings also reported in a recent study with university students (Schnettler Miranda-Zapata Grunert et al. 2007). Although the strengths of both relationships are different, it is possible to suggest that the levels of satisfaction in the food and family domains are important in order to improve the level of overall life satisfaction, both in mothers and children independent of family structure. The SEM results also suggest that some food-related parenting practices are related to mothers and children life satisfaction through satisfaction with family life and also through satisfaction with food-related life. This finding may indicate the possible mediating roles of both domains, food and family, between food-related parenting practices and overall life satisfaction. This possibility deserves more attention in future studies. This is especially relevant in single-headed households as our results show lower levels of life satisfaction and satisfaction with family life in single mothers and their children compared to married or cohabiting

mothers and their children. These findings confirm previous studies that have indicated that children who live with both parents reported higher levels of life satisfaction (Bjarnason et al. 2012; Walper et al. 2015) and family satisfaction (Walper et al. 2015) than children living with single parents. Similar findings have been reported for married mothers in comparison to single mothers (Pollmann-Schult 2014).

One of the limitations of this exploratory study is its cross-sectional design and the use of a survey to obtain the data, which did not allow us to test causality between satisfaction with family life and life satisfaction, as well as between satisfaction with food-related life and life satisfaction. Therefore, in order to test causality between the aforementioned constructs, new research is required that considers experimental or quasi-experimental designs. Another limitation is related to the non-probabilistic nature of the sample and its relatively small size, as well as the fact that it examined families from only one city in one country, which limits the generalization of our results. All data were self-reported. Thus, responses may have been affected by social desirability, especially in the mothers' responses. In addition, we only explored the relationships between three food-related parenting practices and satisfaction in the food and family domains. Therefore, future studies should evaluate the relationships between other food-related parenting practices and subjective well-being in mothers and their children and should also include fathers, due to their increasing engagement in childrearing tasks (Sharif et al. 2017).

However, despite these limitations, this is the first study that has assessed the relationship between food-related parenting practices, satisfaction with food-related life and satisfaction with family life based on mothers and their adolescent children's responses. In addition, this study contributes to the knowledge of the differences between two-parent and single-parent families in which the mother is the head of household, an understudied topic (Berge et al. 2013). Our results stress the importance of the maternal presence when children eat as our results show that this is a way to improve the food-related life and family life satisfaction of both mothers and children independent of the family structure. In addition, it should be emphasized that our results also suggest that maternal presence when children eat may also indirectly improve the life satisfaction of mothers and their children. Our results also underscore the fact that food-related parenting practices may affect the subjective well-being of mothers and their children in different ways, which can also differ between single and dual-headed households. Therefore, these findings are useful for both parents and health practitioners seeking to implement differentiated interventions for improving all family members' overall, in the food and family domains subjective well-being, while also taking into account the differences in family structure.

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Compliance with Ethical Standards

Disclosure of Potential Conflicts of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Research Involving Human Participants and/or Animals All procedures performed in this study that involving human participants were in accordance with the ethical standards of the Ethics Committee of the University de La Frontera with the protocol 005/2016 and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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