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ORIGINAL RESEARCH

Parental Stress on Children's Appearance, Body Dissatisfaction, and Eating Behaviours in Chinese Children: A Pathway Analysis

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Purpose: This study aimed to analyze the association pathways of parental stress on children's appearance, body dissatisfaction, and eating behaviours in Chinese children and adolescents.

Patients and Methods: The children aged 8–15 years were selected from 2 nine-year schools using stratified cluster random sampling. The appearance-related social stress questionnaire and the body dissatisfaction subscale of EDI-1 were used to investigate parental stress on children's appearance and body dissatisfaction, respectively. The self-administered eating frequency questionnaire was used to investigate children's eating behaviours.

Results: Body dissatisfaction in girls mediated associations between BMI, parental teasing, parental injustice and ignorance, parental encouragement and healthy eating behaviour: BMI → body dissatisfaction → healthy eating behaviour, parental teasing → body dissatisfaction → healthy eating behaviour, parental injustice and ignorance → body dissatisfaction → healthy eating behaviour, parental encouragement → body dissatisfaction → healthy eating behaviour. Parental injustice and ignorance directly and negatively predicted healthy eating behaviour in girls. In boys and girls, parental teasing was a direct predictor factor of unhealthy eating behaviour.

Conclusion: Parental teasing, parental injustice and ignorance, parental encouragement, and BMI through body dissatisfaction positively predicted healthy eating behaviour in girls, parental injustice and ignorance directly negatively predicted healthy eating behaviour in girls, and parental teasing directly positively predicted unhealthy eating behaviour in girls and boys. Therefore, parental pressure on children's appearance may pay important role in children's eating behaviours.

Keywords: parental stress on children's appearance, body dissatisfaction, eating behaviour, children and adolescents

Introduction

Children's eating behaviours are closely linked to their health, and improving dietary nutrient intake can help reduce the risk of heart disease, diabetes, cancer, and other health conditions.[1,2] Proper eating behaviour is a health-promoting factor[3] and is also beneficial in adulthood. Unhealthy eating behaviours are considered a contributing factor to the etiology of overweight status in adolescents and adults[4] and can also affect the growth and development of adolescents, which may trigger physical nonacceptance and may lead to diet-related diseases in adulthood.[5–7] Many factors can influence the eating behaviour of children and adolescents,[8] including the young people themselves and their parents' perceptions of their bodies.

Parents play an important role in children's eating behaviours, including those who want to increase their children's independence and develop their eating habits in independent eating situations.[8] Parents provide their children's eating environment, food, and eating experiences. Children will model their parents' eating behaviours, eating-related attitudes, and satisfaction or dissatisfaction with body image. Studies have shown that certain parental behaviours related to food and weight (eg, expressive attitudes towards children's appearance and comments about body image) are associated with increased rates of unhealthy eating in children.[9] Some reports suggest that children's restrained eating behaviours and eating habits are highly associated with parental stress and/or perceptions that encourage dieting or weight loss.[10,11] In

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addition, Trauma experiences are associated with more severe clinical symptomatology in eating disorder.[12] The influence of parents on their children's eating behaviours extends into adolescence and early adulthood.[13]

Children are increasingly influenced by the attitudes and beliefs of their peers and parents as they grow up, especially as they enter adolescence, and this includes attitudes and beliefs related to body image.[14–16] Risk factors for body dissatisfaction include biological factors (eg, genetic factors), personal temperament, and sociocultural appearance pressures, especially from family, peers, and the media.[17,18] Indeed, a higher BMI predicts body dissatisfaction,[19] and overweight and obese individuals have higher levels of body dissatisfaction than their normal-weight peers.[20] Some studies have shown that some unhealthy eating behaviours are more frequent in obese adolescents, such as reduced fruit and vegetable intake, increased consumption of high-calorie foods, reduced physical activity, and poor sleep quality.[21] Adolescents with weight perception suffer from negative mental health[22,23] and unhealthy eating behaviours, such as skipping breakfast, drinking soft drinks, and snack consumption.[22,24]

Parents may perceive verbal encouragement of dieting and weight loss as an act of caring for others, and they may view the teasing of weight and body size as a neutral comment made in the context of family relationships.[25] Studies have found that parental norms and modelling behaviours regarding appearance,[26–28] parental neglect or ignorance,[29] and aspects such as teasing[30,31] and encouragement of weight and size control[25,29] influence adolescents' body image. Weight, weight dissatisfaction, and health-related eating habits also develop strongly during child growth and development[32]. Therefore, parental stress on children's appearance has a significant impact on children's body dissatisfaction and eating behaviours. The purpose of this study was to investigate the pathways of association between parental stress on children's appearance, children's body dissatisfaction, and eating behaviours to provide a basis for children to develop healthy eating behaviours.

Subjects and Methods

Subjects

The current study adopted the cross-sectional study design. Use sample measurement metrics: $N = \left(\frac{Z_{\alpha/2}\times\sigma}{\delta}\right)^2$, N is the sample size, δ is the allowable error, σ is the standard deviation, Z=1.96, α =0.05, δ=0.07, σ=0.76,[40] the required sample size should not be less than 453. There were 599 effective samples (315 boys, 284 girls) in this study. A stratified cluster sampling method was used to recruit students aged 8–15 years from two nine-year schools, which were stratified by school and grade, and we took the class as a cluster. This study was approved by the Ethics Committee of Bengbu Medical College ([2015]No.003) and was conducted according to the Declaration of Helsinki. Participants' guardians signed informed consent forms. Under the leadership of standardized training investigators, the participants completed questionnaires by themselves in the form of centralized filling.

Eating Behaviour Survey

A self-administered food frequency questionnaire was used to investigate the frequency of eating out, late-night snacking, fried food, high-calorie snacks, pickles, Western fast food, carbonated drinks, fish, shrimp, eggs, milk, fresh vegetables, fruits, and breakfast. Frequency of each eating behaviour: 1 time/day = 7, 4–6 times/week = 5, 1–3 times/week = 2, 1 time/2 weeks = 0.5, 1 time/month = 0.25, never = 0.[33] The higher the score, the higher the frequency of the dietary behaviour. Exploratory factor analysis (EFA) was used to extract 2 common factors from 14 eating behaviors by orthogonal rotation with maximum variance, including unhealthy eating behavior, healthy eating behavior. The KMO test value of factor analysis was 0.752, and Bartlett's sphericity test showed a statistically significant difference X^2=1296.335, P<0.001). The Cronbach's coefficient of the questionnaire was 0.630. The sum of the frequency scores of eating out, late-night snacking, fried food, high-calorie snacks, pickles, Western fast food, and carbonated drinks was defined as unhealthy eating behaviours; the sum of the frequency scores of fish, shrimp, eggs, milk, fresh vegetables, fruits, and breakfast was defined as healthy eating behaviours.

Body Dissatisfaction

The Body Dissatisfaction subscale of the Eating Disorders Inventory (EDI-1) was used to survey participants' body dissatisfaction.[19] This subscale contains 9 items, and each item is scored using a 6-point Likert scale with positive scoring

items as shown below: 1="never", 2="rarely", 3="sometimes", 4="often", 5="very often", and 6="always". Reverse scoring Items 6="Never", 5="Rarely", 4="Sometimes", 3="Often", 2="Very often", 1="Always". The total score ranges from 9 to 54 points. The higher the score, the more serious the body dissatisfaction. The Cronbach's coefficient of the scale is 0.599.

Parental Stress on Children's Appearance

Subscales from the Appearance-Associated Social Stress Questionnaire[34] were used to survey parental stress on children's appearance. The subscale includes four dimensions: parental teasing, parental injustice and ignorance, parental encouragement, and parental norms and modelling. Each dimension consists of four questions, and each item is scored using a 5-point Likert scale with the following scores: 1="not at all consistent", 2="not very consistent", 3="not sure", 4="very consistent", and 5="perfectly consistent", with higher scores associated with greater parental appearance stress. The Cronbach's coefficient is 0.831 for the parental teasing dimension, 0.796 for the parental injustice and ignorance dimension, 0.847 for the parental encouragement dimension, and 0.862 for the parental norms and modelling dimension.

Statistical Analyses

SPSS 23.0 software was used for statistical analysis. Quantitative data are described as the mean ± standard deviation. Differences in parental teasing, parental injustice and ignorance, parental encouragement, parental norms and modelling, healthy eating behaviours, unhealthy eating behaviours, and body dissatisfaction scores between genders were analysed using *t*-tests. The associations of parental teasing, parental injustice and ignorance, parental encouragement, parental norms and modelling, healthy eating behaviours, unhealthy eating behaviours, and body dissatisfaction scores were analysed by partial correlation and stepwise multiple linear regression models after adjusting for age. Association pathways were modelled using AMOS 24.0 software. The model was considered well-fitted if the validation indices had RMSEA (root mean square error of approximation) < 0.08, SRMR (standardized root mean square residual) < 0.08, normed fit index (NFI), incremental fit index (IFI), Tucker–Lewis index (TLI), comparative fit index (CFI), adjusted goodness-of-fit Index(AGFI), and goodness-of-fit index (GFI) > 0.9.[35] Indirect effects were tested using bootstrap methods, and 5000 bootstrap resamples with replacement were calculated to generate 95% bias-corrected confidence intervals for indirect effects.

Results

Comparisons of Parental Stress on Children's Appearance, BMI, Body Dissatisfaction, and Eating Behaviours by Gender

Age, BMI, parental teasing, parental injustice and ignorance, parental encouragement, parental norms and modelling scores were not significantly different between boys and girls ($P<0.05$). Boys had higher healthy eating behaviour scores and unhealthy eating behaviour scores than girls ($P<0.05$), and girls had significantly higher body image dissatisfaction scores than boys ($P<0.05$). (See Table 1 for details).

Associations of Parental Stress on Children's Appearance, Body Dissatisfaction, and Eating Behaviours Using Partial Correlation

The results of the partial correlation analysis showed that in boys, there were positive correlations between BMI, parental teasing, parental injustice and ignorance, parental encouragement, parental norms and modelling, and body dissatisfaction ($P<0.05$), and there were no correlations between the above indicators and healthy eating behaviours ($P>0.05$) and positive correlations between parental teasing and unhealthy eating behaviours ($P<0.05$). In girls, BMI was positively correlated with parental teasing, parental injustice and ignorance, parental encouragement, parental norms and modelling, and body dissatisfaction ($P<0.05$); positive correlations existed between parental teasing, parental injustice and ignorance, parental encouragement, parental norms and modelling and body dissatisfaction ($P<0.05$); negative correlation between body dissatisfaction, parental injustice and ignorance, parental encouragement, parental norms and modelling, and healthy eating behaviours ($P<0.05$); positive correlation between parental teasing, parental injustice and ignorance and unhealthy eating behaviour ($P<0.05$); and no correlation between BMI, parental teasing and healthy eating behaviour, between BMI, body dissatisfaction, parental injustice and ignorance, parental encouragement, parental norms and modelling, and unhealthy eating behaviour ($P>0.05$) (see Table 2).

Table 1 Comparisons of Parental Stress on Children's Appearance, BMI, Body Dissatisfaction, and Eating Behaviours Between Gender ($\overline{X} \pm SD$)

Variables	Boys (n=318)	Girls (n=287)	*t* value	*P* value
BMI	19.45±3.72	19.71±5.15	−0.70	0.48
Age	11.37±1.76	11.54±1.80	−1.23	0.22
Parental Teasing	5.42±2.60	5.76±3.20	−1.41	0.16
Parental injustice and ignorance score	6.26±3.31	6.08±3.10	0.68	0.50
Parental encouragement score	7.35±4.27	7.43±4.30	−0.23	0.82
Parental norms and modelling score	7.09±4.15	6.86±3.76	0.71	0.48
Healthy eating behaviour	32.19±8.42	30.44±8.28	2.56	0.01
Unhealthy eating behaviour	12.27±8.92	9.96±7.62	3.44	0.00
Body dissatisfaction	26.54±9.73	28.21±9.70	−2.11	0.03

Abbreviation: BMI, body mass index.

Table 2 Association of BMI, Parental Stress on Children's Appearance, Body Dissatisfaction, and Eating Behaviour Using Partial Correlation

Variables	1	2	3	4	5	6	7	8
Boys								
BMI	1							
Body dissatisfaction	0.47**	1						
Parental teasing score	0.14*	0.18**	1					
Parental injustice and ignorance score	0.17**	0.15**	0.5**	1				
Parental encouragement score	0.4**	0.25**	0.47**	0.51**	1			
Parental norms and modelling score	0.29**	0.23**	0.39**	0.45**	0.67**	1		
Healthy eating behaviour	−0.01	−0.07	−0.06	−0.02	0.06	0.03	1	
Unhealthy eating behaviour	0.04	0.10	0.13*	0.09	0.08	0.09	0.14**	1
Girls								
BMI	1							
Body dissatisfaction	0.38**	1						
Parental teasing score	0.03	0.25**	1					
Parental injustice and ignorance score	0.12*	0.12*	0.50**	1				
Parental encouragement score	0.26**	0.34**	0.43**	0.48**	1			
Parental norms and modelling score	0.12*	0.15*	0.33**	0.45**	0.52**	1		
Healthy eating behaviour	−0.05	−0.23**	−0.10	−0.15*	−0.12*	−0.12*	1	
Unhealthy eating behaviour	−0.06	0.05	0.18*	0.08*	0.09	0.11	−0.01	1

Notes: *P< 0.05; **P < 0.01.
Abbreviation: BMI, body mass index.

Association of BMI and Parental Stress on Children's Appearance, Body Dissatisfaction, and Eating Behaviours Using Stepwise Multiple Linear Regression

After adjusting for age, a multiple linear regression model was conducted to analyse associations between parental stress on children's appearance, body dissatisfaction, healthy eating behaviours, and unhealthy eating behaviours. The results showed that in girls, parental teasing, parental encouragement, and BMI significantly and positively predicted body dissatisfaction; parental injustice and ignorance negatively predicted body dissatisfaction; and parental injustice and ignorance and body dissatisfaction negatively predicted healthy eating behaviours. In addition, parental teasing was the only direct predictor of unhealthy eating behaviours. In boys, parental teasing and BMI were significant positive predictors of body dissatisfaction, and parental teasing was the only direct predictor of unhealthy eating behaviour. Specifically, see Table 3. From the above correlation results, it is clear that parental teasing, parental injustice and ignorance, parental encouragement, parental norms and modelling interacted with each other, and parental encouragement and BMI interacted with each other, so there may be a pathway relationship between parental stress on children's appearance, BMI, body dissatisfaction, and eating behaviour, as shown in Figure 1.

Model Fitting of the Association Pathway Between Parental Stress and Children's Appearance, BMI, Body Dissatisfaction, and Eating Behaviour

The association paths of BMI and parental stress on children's appearance, body dissatisfaction, healthy eating behaviour, and unhealthy eating behaviour were fitted. The model fitting results showed that the paths of healthy eating behaviour for girls and unhealthy eating behaviour for girls had a good fit. The model effect of the path of unhealthy eating behaviour for boys was not satisfactory (SRMR=0.0825>0.08), the paths of parental norms and modelling to BMI were added according to the MI correction index, and the correction model fit was better. The model fit indices are shown in Table 4.

Association pathway for healthy eating behaviour in girls: BMI, parental teasing, and parental encouragement positively predicted body dissatisfaction (0.33, P<0.001; 0.21, P<0.001; 0.23, P<0.001;), and parental injustice and ignorance negatively predicted body dissatisfaction (−0.14, P<0.05); body dissatisfaction, parental injustice and ignorance negatively predicted healthy eating behaviour (−0.21, P<0.001; −0.13, P<0.05). The following indirect pathways were also present: BMI → body

Table 3 Association of Parental Stress on Children's Appearance, BMI, Body Dissatisfaction, and Eating Behaviour Using Multiple Linear Regression

Dependent Variable	Independent Variable	β	S.E.	t value	P value	BC95% CI	
						LLCI	ULCI
Boys							
Body dissatisfaction	BMI	1.09	0.13	8.27	0.00	0.83	1.35
	Parental teasing score	0.54	0.19	2.87	0.00	0.17	0.91
Unhealthy eating behaviour score	Parental teasing score	0.56	0.19	2.92	0.00	0.18	0.93
Girls							
Body dissatisfaction	BMI	0.62	0.10	6.13	0.00	0.42	0.83
	Parental encouragement	0.53	0.14	3.75	0.00	0.25	0.80
	Parental teasing score	0.64	0.19	3.39	0.00	0.27	1.01
	Parental injustice and ignorance score	−0.43	0.20	−2.15	0.03	−0.82	−0.04
Healthy eating behaviour score	Body dissatisfaction	−0.18	0.05	−3.70	0.00	−0.28	−0.09
	Parental injustice and ignorance score	−0.34	0.15	−2.18	0.03	−0.64	−0.03
Unhealthy eating behaviour score	Parental teasing score	0.43	0.14	3.09	0.00	0.16	0.70

Abbreviations: BMI, body mass index; BC 95% CI, 95% bias-corrected confidence intervals; LLCI, lower limit of 95% CI; ULCI, upper limit of 95%.

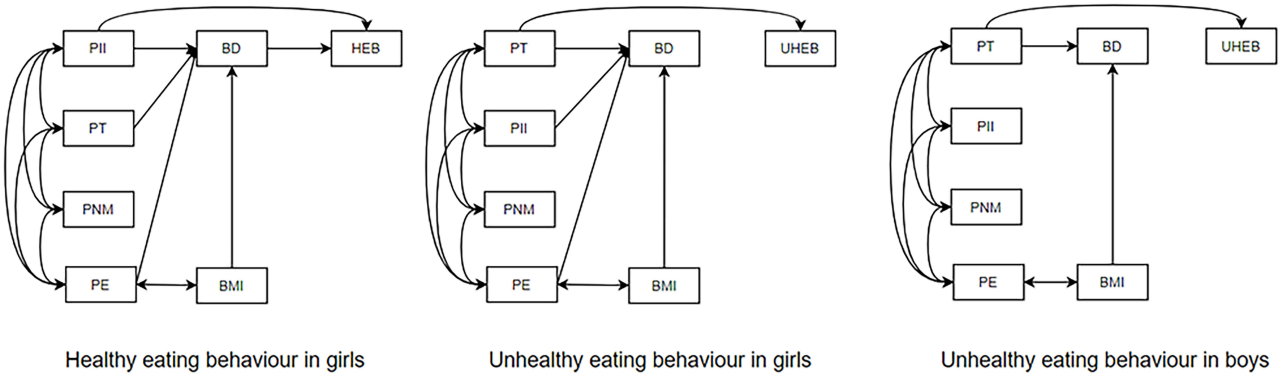

Figure 1 Primary association pathways of parental stress on children's appearance, BMI, body dissatisfaction, and eating behaviour.
Abbreviations: PT, Parental teasing; PII, parental injustice and ignorance; PE, parental encouragement; PNM, parental norms and modelling; HEB, healthy eating behaviours; UHEB, unhealthy eating behaviours; BD, body dissatisfaction; BMI, body mass index.

dissatisfaction → healthy eating behaviour ([−0.12, −0.03], P<0.05), parental teasing → body dissatisfaction → healthy eating behaviour ([−0.10, −0.01], P<0.05), parental injustice and ignorance → body dissatisfaction → healthy eating behaviour ([0.00, 0.07], P<0.05), and parental encouragement → body dissatisfaction → healthy eating behaviour ([−0.10, −0.02], P<0.05).

Association pathway for unhealthy eating behaviours in girls: BMI, parental teasing, and parental encouragement positively predicted body dissatisfaction (0.33, P<0.001; 0.21, P<0.001; 0.23, P<0.001); parental injustice and ignorance negatively predicted body dissatisfaction (−0.14, P<0.05); and parental teasing positively predicted unhealthy eating behaviour (0.18, P<0.05).

Association pathway for unhealthy eating behaviours in boys: BMI and parental teasing positively predicted body dissatisfaction (0.42, P<0.001; 0.16, P<0.05); parental teasing positively predicted unhealthy eating behaviours (0.15, P<0.05) (see Figure 2 for details).

Discussion

Few studies have examined the pathways linking parental stress to children's appearance, BMI, body dissatisfaction, and eating behaviours. The present study explored their association pathways and showed that body dissatisfaction in girls mediated the association between parental teasing, parental injustice and ignorance, parental encouragement, and healthy eating behaviours. Parental injustice and ignorance directly and negatively predicted healthy eating behaviours in girls, and parental teasing was a direct predictor of unhealthy eating behaviours in boys and girls. This has important implications for guiding children and their parents to promote healthy eating behaviours in children.

The results of the present study showed that body dissatisfaction was more pronounced in girls than in boys. Similar results have been shown in previous studies.[36,37] The frequency of healthy eating behaviours and the higher frequency of unhealthy eating behaviours found in boys may be related to the fact that boys are more physically active than girls[38] and have a greater intake and frequency of food intake during growth and development than girls and may also be related to

Table 4 The Model Goodness-of-Fit Indicators

Test Index	X^2/DF	RMSEA	GFI	AGFI	NFI	IFI	TLI	CFI	SRMR
Adaptation standards	<3	<0.08	>0.90	>0.90	>0.90	>0.90	>0.90	>0.90	<0.08
Healthy eating behaviours for girls	1.034	0.011	0.992	0.972	0.980	0.999	0.998	0.999	0.039
Unhealthy eating behaviours for girls	1.012	0.011	0.991	0.973	0.977	1.000	0.999	1.000	0.038
Unhealthy eating behaviours for boys	1.559	0.007	0.986	0.961	0.972	0.990	0.978	0.990	0.031

Abbreviations: χ^2, Chi-square; DF, Degrees of Freedom; χ2/DF, Relative chi-square; RMSEA, Root mean square error of approximation; GFI, Goodness-of-fit index; AGFI, Adjusted goodness -of-fit index; NFI, Normed fit index; IFI, Incremental fix index; TLI, Tucker Lewis index; CFI, Comparative fit index; SRMR, Standardized root mean square residual; CFI, Comparative fit index.

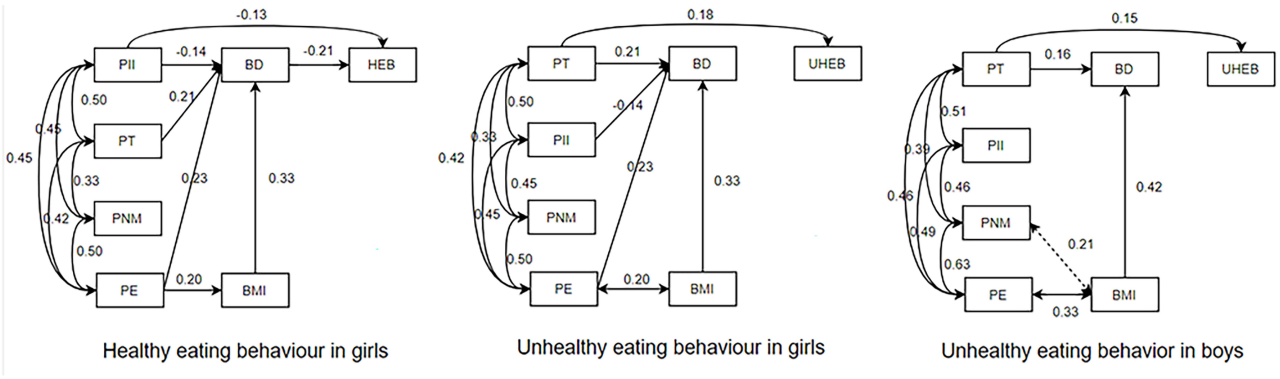

Figure 2 Path diagram of parental stress on children's appearance, BMI, body image dissatisfaction, and eating behaviour.
Notes: The solid line indicates that the standard direct effect was significant, and the dashed line indicates that the standard direct effect between the two was not significant.
Abbreviations: PT, Parental teasing; PII, parental injustice and ignorance; PE, parental encouragement; PNM, parental norms and modelling; HEB, healthy eating behaviours; UHEB, unhealthy eating behaviours; BD, body dissatisfaction; BMI, body mass index.

the fact that girls have a greater awareness of weight loss and will control their weight by reducing unhealthy eating behaviours such as sugary drinks, fried foods, and Western fast foods.[39]

We found that girls' body dissatisfaction mediated the relationship between BMI, parental teasing, parental injustice and ignorance, parental encouragement, and healthy eating behaviours, suggesting that BMI, parental teasing of weight and appearance, parental injustice and ignorance, and encouragement to control weight and appearance influence the degree of girls' body dissatisfaction, which in turn influences girls' healthy eating behaviours. Elevated weight and changes in children's appearance can cause parental concerns about their children's weight status. Parents demonstrate attitudes that encourage weight control not only focused on their children's weight and body image but also accompanied by parental injustice and ignorance, teasing, and role modelling.[40] Parents often convey appearance-related messages to encourage their children, but this can damage adolescents' body self-esteem,[41] and parental encouragement to control weight and body size is the strongest predictor of body dissatisfaction in girls,[25] which is associated with children feeling pressure to look good from their parents. In turn, food choices during stress-induced eating tend to be less healthy.[42] Thus, in girls, body dissatisfaction is negatively associated with healthy eating behaviours. This may also be because girls are more concerned about body image, have a higher awareness of weight loss, and control their weight by controlling their eating behaviours.[39] Our study did not find body dissatisfaction mediating the relationship between BMI, parental teasing, parental injustice and ignorance, parental encouragement, and healthy eating behaviour in boys. Girls felt more pressure from their parents and higher levels of body dissatisfaction than boys.[43] Girls enter adolescence earlier than boys and are more focused on dietary control and self-image management.[44] Although this indirect pathway of body dissatisfaction was not found in boys, further research is still needed to investigate other variables that may mediate this relationship, such as the moderating effects of low self-esteem, stress, low levels of social support, and poor coping.[45–48]

Our results also found that parental injustice and ignorance about their children's weight and body conformation was a direct negative predictor of healthy eating behaviour in girls. This may be related to girls' high concern about body conformation and weight,[44] and when girls are subjected to unjust parental attitudes regarding their appearance, girls control their diet and have a tendency to diet to be thin or maintain a good appearance, which leads to a decrease in the frequency of healthy eating behaviours. Our study found that parental teasing about weight appearance directly and positively predicted unhealthy eating behaviours in both boys and girls. Teasing from peers and family members about weight was commonly experienced among adolescents. Perceived weight teasing was significantly associated with disordered eating behaviours, and girls were more likely to be teased and more vulnerable to teasing than boys.[49] Weight teasing is a predictor of binge eating behaviour in adolescents.[50] Adolescents who experience weight teasing are more likely to engage in binge eating.[49]

Our results suggest that the parental role in modelling and regulating weight appearance is not directly related to body dissatisfaction, healthy eating behaviours, unhealthy eating behaviours, or BMI. A previous study[51]

showed that encouragement by mothers who are losing weight results in children feeling more pressure to lose weight through restricted eating behaviours. What parents do to stay thin and in good shape (eg, dieting) can have an impact on children's weight status by influencing their eating behaviours, increasing the risk of weight gain and obesity.[52] There is a paucity of research on the association between parents' role in modelling and regulating weight and body conformation and eating behaviour, and the exact mechanisms need to be further investigated. Of course, our results may also be related to the fact that the questionnaire on parental modelling and norms used in this study did not have a clear delineation of specific behaviours.

Limitations

There are several limitations of this study that need to be noted. First, cross-sectional studies have limitations when inferring causality and need to be validated by cohort or intervention studies. Second, the eating behaviour instrument used was a self-administered eating frequency questionnaire, which has limitations in accurately reflecting children's dietary energy intake. Third, the study population was made up of Chinese children and adolescents, which may lead to limitations in extrapolating the study findings to other populations. Finally, the values of internal consistency analyses for the eating behaviour survey and body dissatisfaction were low.

Conclusion

Our study showed that boys had significantly higher healthy eating behaviours and unhealthy eating behaviours, and that girls experienced significantly higher levels of body dissatisfaction compared to boys. Body dissatisfaction in girls mediated the relationship between parental teasing, parental injustice and ignorance, parental encouragement, and healthy eating behaviours. Parental teasing was a direct predictor of unhealthy eating behaviours in boys and girls, and parental injustice and ignorance were negatively associated with healthy eating behaviours in girls. Parental norms and modelling were not directly related to children's body image and eating behaviours. Therefore, parental pressure on children's appearance may pay an important role in children's eating behaviours. By changing parental attitudes and behaviors regarding children's weight and body shape, unhealthy eating behavior patterns in children may be able to be improved effectively.

Abbreviations

PT, Parental teasing; PII, parental injustice and ignorance; PE, parental encouragement; PNM, parental norms and modelling; HEB, healthy eating behaviours; UHEB, unhealthy eating behaviours; BD, Body dissatisfaction; $\chi 2$, Chi-square; DF, Degrees of Freedom; $\chi 2/DF$, Relative chi-square; RMSEA, Root mean square error of approximation; GFI, Goodness-of-fit index; AGFI, Adjusted goodness-of-fit index; NFI, Normed fit index; IFI, Incremental fix index; TLI, Tucker Lewis index; CFI, Comparative fit index; SRMR, Standardized root mean square residual; CFI, Comparative fit index; and Body mass index.

Data Sharing Statement

All data generated or analyzed during this study are not publicly available to maintain the privacy of the individuals' identities. The dataset supporting the conclusions is available upon request to the corresponding author.

Ethics Approval and Consent to Participate

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Medical Research Ethics Committee of Bengbu Medical College ([2015] NO.003). Written informed consent was obtained from the parents.

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Disclosure

The authors report no conflicts of interest in this work.

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