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THE STUDY OF THE PSYCHOMETRIC PROPERTIES OF THE RUSSIAN-LANGUAGE ADAPTED VERSION «BABY EATING BEHAVIOUR QUESTINANAIRE»

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Abstract. Due to the active study of anorexic and bulimic disorders in infancy and early childhood, there is currently a shortage of objective examination methods, including rating questionnaires. *The aim of the study* was to study the psychometric properties of the adapted version of the "Infant Eating Behavior Questionnaire" to assess the suitability of this test in the Russian-speaking population. 227 mothers were tested once, whose infants (100 boys, 127 girls, p=0.073, age 1–7 months) underwent a routine preventive outpatient examination in four district polyclinics of St. Petersburg in the period from September 2019 to May 2021. *Method*: exploratory factor analysis, the "maximum likelihood" method, varimax-rotation. *Results*: the Kaiser-Mayer-Olkin sample adequacy measure (0.655) and the Bartlett sphericity criterion (χ^2=717.768, df=153, p=0.0001) showed conditional suitability of the data array for statistical analysis. The total cumulative variance was 53.469%. Based on the constructed graph of the eigenvalues of the principal components, the applied Kaiser and R. Kettel criteria, a 5-factor model was selected with the criterion "quality of fit", indicating the completeness of factorization (χ^2=90.256, df=73, p=0.083). Thus, the 5-factor scale structure of the questionnaire, typical for the original version, was confirmed. However, the components of the scales did not correspond to the original version. The scale "Food responsiveness" in the Russian version included only 4 original items (2, 8, 14, 16). The rest belong to the scale of "Enjoyment of food" (point 1 with a reverse calculation), the scale of "Satiety responsiveness" (points 7 and 13) and the scale of "Slowness in eating" (point 15). The "Enjoyment of food" scale included only one item present in the original version (17). The other two (12 and 18) in the original version belong to the "Food responsiveness" scale. The "Satiety responsiveness" scale contains only two points — 5 and 10. And only the latter reflects the studied property. The "Slowness in eating" scale is represented by only two items (9 and 11), they both belong to the same scale in the original version. Of all the scales, only the "Slowness in eating" scale demonstrates acceptable statistical consistency (Cronbach's α >0.7). The Cronbach's α value of the "Food responsiveness" scale (>0.6) is in the range of questionable suitability. Other scales have a Cronbach's α value of less than 0.6. The article discusses the reasons for the discrepancy between the components of the scales of the original version and the version obtained in this work, as well as the low degree of consistency of the questionnaire items within the selected scales.

Key words: *infant eating behavior; infantile anorexia; infantile bulimia; infant eating behavior questionnaire; early childhood-maternal interaction*

ИЗУЧЕНИЕ ПСИХОМЕТРИЧЕСКИХ СВОЙСТВ РУССКОЯЗЫЧНОГО АДАПТИРОВАННОГО ВАРИАНТА «ОПРОСНИКА ПИЩЕВОГО ПОВЕДЕНИЯ МЛАДЕНЦЕВ»

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Резюме. В связи с активным изучением аноректических и булимических расстройств в младенческом и раннем детском возрасте в настоящее время отмечается дефицит объективных методик обследования, в том числе рейтинговых опросников. *Целью исследования* было изучение психометрических свойств адаптированной версии «Опросника пищевого поведения младенцев» для оценки пригодности данного теста в русскоязычной популяции. *Материалы и методы:* Однократно было протестировано 227 матерей, чьи младенцы (100 мальчиков, 127 девочек, p=0,073, возраст 1–7 месяцев) проходили плановый профилактический амбулаторный осмотр в четырех районных поликлиниках города Санкт-Петербурга в период с сентября 2019 г. по май 2021 г. Применялись эксплораторный факторный анализ, метод «максимум правдоподобия», варимакс-вращение. *Результаты*: мера адекватности выборки Кайзера–Майера–Олкина (0,655) и критерий сферичности Бартлетта (χ^2=717,768, df=153, p=0,0001) показали условную пригодность массива данных для статистического анализа. Суммарная совокупная дисперсия составила 53,469%. На основании построенного графика собственных значений главных компонент, примененных критериев Кайзера и Р. Кеттела была выбрана 5-факторная модель с критерием «качество подгонки», свидетельствующим о полноте факторизации (χ^2=90,256, df=73, p=0,083). Таким образом, была подтверждена 5-факторная шкальная структура опросника, типичная для оригинальной версии. Однако составляющие шкал не соответствовали оригинальной версии. Шкала «Желание поесть» в русскоязычном варианте включила только 4 оригинальных пункта (2, 8, 14, 16). Остальные относятся к шкале «Удовольствие от приема пищи» (пункт 1 с обратным подсчетом), шкале «Чувствительность к перееданию» (пункты 7 и 13) и шкале «Медленный темп приема пищи» (пункт 15). Шкала «Удовольствие от приема пищи» включила в себя только один присутствующий в оригинальной версии пункт (17). Два других (12 и 18) в оригинальной версии принадлежат к шкале «Желание поесть». Шкала «Чувствительность к перееданию» содержит всего два пункта — 5 и 10. И только последний отражает изучаемое свойство. Шкала «Медленный процесс приема пищи» представлена всего двумя пунктами (9 и 11), они оба относятся к такой же шкале в оригинальной версии. Из всех шкал только шкала «Медленный процесс приема пищи» демонстрирует приемлемую статистическую согласованность (α Кронбаха >0,7). В диапазоне сомнительной пригодности находится значение α Кронбаха шкалы «Желание поесть» (>0,6). Другие шкалы имеют значение α Кронбаха меньше 0,6. В статье обсуждаются причины несоответствия составляющих шкал оригинальной версии и версии, полученной в настоящей работе, а также низкую степень согласованности пунктов опросника в рамках выделенных шкал.

Ключевые слова*: пищевое поведение младенцев; инфантильная анорексия; инфантильная булимия; опросник пищевого поведения младенцев; раннее детско-материнское взаимодействие*

The relationship between eating behaviour in infancy and eating habits in later life, including various anorectic and bulimic syndromes, has been actively studied. Moreover, while the clinical manifestations of anorexia in infants and young children are described quite comprehensively in foreign and domestic literature and their study is supplemented by the description of new forms of disorders (for example, "Avoidant restrictive food intake disorder"), the psychological mechanisms of bulimia and overeating in children are given much less space. Although the new classification of mental disorders of the first 5 years of life, Disorders in Infancy and Early Childhood (DC:0–5), includes a diagnosis of "Infantile Overeating" in the section on Eating Disorders [1]. The lack of information on the mechanisms of overeating in this age group is quite significant. This is due to methodological difficulties in objectively assessing appetite. While for older children it has been possible to trace the role of externalised mechanisms in the onset of obesity [2, 3], it is much more difficult to study the role of external food signals, such as the sight and smell of tasty food, on the appetite of infants due to the lack of stable perceptions ("sensory standards") of what is tasty food at this age.

However, even in these conditions we managed to establish some regularities. It has been shown that differences in the eating behaviour of obesity-prone infants compared to normal-weight infants can be detected already in the first few weeks of life. For example, a high risk of obesity calculated on the basis of parental weight was associated with a more "greedy" breastfeeding style [4]. Initiation of breastfeeding by a child in the first 6 months of life predicts overweight during the second six months of life [5].

A large number of known works are devoted to the study of the relationship between eating behaviour and weight in children over 3 years old. For example, obese or overweight children have been found to have a higher rate of eating behaviour than leaner peers [6]. Also they respond more strongly to

food reinforcement stimuli [7, 8]. Obese children also show less sensitivity to internal satiety cues, causing food intake not to slow down [9].

The original version of the Baby eating behaviour Questinanaire (BEBQ) [6] was based on the Children's eating behaviour Questinanaire (CEBQ), which measures 8 eating behaviour characteristics associated with being overweight or underweight in children 3–13 years old [10]. The BEBQ consists of 18 items, 17 of which relate to 4 scales — 'Desire to eat', 'Enjoyment of eating', 'Sensitivity to overeating', 'Slow eating', and one item is a separate dimension called 'General appetite'. The result for each item is rated on a 5-point scale: 1 — never, 2 — rarely, 3 — sometimes, 4 — often, 5 — always. The scale "Desire to eat" characterises in general the child's reaction to food, i.e. the degree of sensitivity of the child to external stimuli associated with the feeding situation, the degree of the child's interest in eating, as well as such traits as "greediness", "insatiability" and violation of control over the amount eaten. The scale "Pleasure from eating" reflects the expression of positive/negative emotions arising in the process of breastfeeding. The Sensitivity to Overeating scale measures the baby's ability to regulate his/her food cravings during feeding based on the perception of satiety threshold. The Slow Eating Process scale characterises the slow rate at which the infant absorbs food.

AIM OF THE STUDY

To examine the psychometric properties of the adapted version of the Baby Eating Behaviour Questionnaire, such as factor structure and internal consistency, to assess the suitability of this test for the Russian-speaking population.

MATERIALS AND METHODS

An adapted version of the Baby Eating Behaviour Questionnaire was used, obtained by translating from English the original version of the Baby eating behaviour questinanaire. The translation work was carried out by two professionals with specialised knowledge in philology, which showed an almost complete overlap between all items, due to the originally specific and rather concise wording of the original version.

Patient recruitment and selection criteria

The study was conducted in 4 district polyclinics in St. Petersburg from September 2019 to May 2021 with short breaks. Mothers who met the selection criteria were asked to fill in the questionnaire after signing the voluntary informed consent of the study participant during routine medical check-ups of children of the first year of life.

Inclusion criteria: 1) mothers of children 1–7 months old who underwent the routine preventive ambulatory examination; 2) a voluntary consent of the study participants to fill in the questionnaire, confirmed by written completion of a specially designed form; 3) the understanding by the participant of the study of its purpose, as well as the content and meaning of the questions contained in the text of the questionnaire, and a positive attitude to the study. **Non-Inclusion criteria:** 1) a lack of understanding of the meaning of the questions in the questionnaire; 2) an evidence of an acute psychiatric history in the child's mother, observation by a psychiatric institution or planned psychiatric treatment. **Exclusion criterion:** a refusal of further participation in the study, confirmed in writing form or verbally.

The study was an one-stage. The results were analysed and interpreted by a mental health professional (psychiatrist) experienced in working with children, including those in the first year of life, and their mothers.

Initially, 232 mothers were invited to participate in the study. During the study, 5 people refused to complete the questionnaire due to "lack of free time" and "impossibility to come to the polyclinic again" (the questionnaires were submitted in paper form only).

Statistical analysis

Absolute value (n) and % in group were used to describe qualitative (categorical) variables. Pearson's χ^2 criterion was used to compare qualitative variables on the basis of conjugation tables. Quantitative parametric variables were described on the basis of mean (M) and standard deviation (sd), non-parametric variables — median (Me) and 25% and 75% quartiles. The values of asymmetry (As) and excess (Ex) and their standard errors (p) were used to test the normality of the distribution. A sample was considered to conform to a normal distribution if the absolute values of As and Ex did not exceed their standard errors [11]. Parametric comparison of groups was carried out on the basis of Student's t-criterion, nonparametric — on the basis of Mann-Whitney's U criterion. Exploratory factor analysis was used to calculate the suitability of the array for its use (Kaiser–Mayer–Olkin and Bartlett) to reduce the dimension. Kaiser and R. Kettel criteria were chosen to select the required number of factors [11].

Mothers of 227 children — 100 boys, 127 girls — were tested (sex difference was statistically unreliable: χ^2=3.211, df=1, p=0.073). The children ranged in age from 38 to 231 days, with

a mean of 102.97 (43.712) days. There were no sex differences in characteristics such as age of children, gestational age at birth, age of mother and father, number of pregnancies and children in the family (Table 1). However, prematurity was significantly more common among boys (p=0.023).

Factor analysis and its results

Preliminary results of the calculation showed the conditional suitability of the data set for exploratory factor analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.655. Bartlett's criterion of sphericity was χ^2=717.768, df=153, p=0.0001.

The explained cumulative variance based on principal components is presented in Table 2. The table shows that the number of principal components with factor loading above 1.0 is 5 with an aggregate variance of 53.395%.

The graph of eigenvalues of principal components is presented in Figure 1. The graph shows that there are 5 factors above the eigenvalue equal

Table 1. General characteristics of the study participants

Таблица 1. Общая характеристика участников исследования

Characteristics Характеристики	Total (n=227, 100,0%) Всего (n=227, 100,0%)	Boys (n=100, 44,1%) Мальчики (n=100, 44,1%)	Girls (n=127, 55,9%) Девочки (n=127, 55,9%)	Reliability differences Достоверность различий
Age of children, days / Возраст детей, дни M (sd) min-max Me [Q25; Q 75] As (p) Ex (p)	102,97 (43,712) 38–231 92,00 [70,00; 122,00] 0,892 (0,162) –0,081 (0,322)	104,06 (44,188) 42–231 98,50 [66,25; 126,00] 0,840 (0,241) –0,059 (0,478)	102,12 (43,490) 38–206 91,00 [71,00; 122,00] 0,945 (0,215) –0,047 (0,427)	p=0,661 by the Mann-Whitney's U criterion / p=0,661 по критерию U Манна–Уитни
Gestational age / Гестационный возраст M (sd) min-max Me [Q25; Q 75] As (p) Ex (p)	38,86 (2,075) 24–42 39,00 [38,00; 40,00] –2,836 (0,162) 13,797 (0,322)	38,50 (2,560) 24–42 39,00 [38,00; 40,00] –2,690 (0,241) 10,759 (0,478)	39,15 (1,543) 31–42 39,00 [39,00; 40,00] –1,847 (0,215) 7,362 (0,427)	p=0,064 by the Mann-Whitney's U criterion / p=0,064 по критерию U Манна–Уитни
Mother's age, years / Возраст матери, годы M(sd) min-max Me [Q25; Q 75] As (p) Ex (p)	29,67 (5,122) 17–45 30,00 [26,00; 33,00] 0,077 (0,162) 0,199 (0,322)	30,30 (5,528) 19–45 31,00 [27,00; 33,75] 0,375 (0,241) 0,119 (0,478)	29,17 (4,740) 17–41 30,00 [26,00; 32,00] –0,409 (0,215) –0,218 (0,427)	p=0,269 by the Mann-Whitney's U criterion / p=0,269 по критерию U Манна–Уитни
Fother's age, years / Возраст отца, годы M(sd) min-max Me [Q25; Q 75] As (p) Ex (p)	31,44 (5,112) 18–52 31,00 [28,00; 34,00] 0,785 (0,162) 2,065 (0,322)	32,17 (5,803) 20–52 31,00 [28,00; 35,00] 1,083 (0,241) 1,705 (0,478)	30,86 (4,434) 18–45 31,00 [28,00; 33,25] –0,409 (0,215) –0,218 (0,427)	p=0,303 by the Mann-Whitney's U criterion / p=0,303 по критерию U Манна–Уитни
What's your pregnancy count? / Какая по счету беременность?				
The 1 st / 1-я	68 (30,0%)	32	36	χ^2=3,317, df=6, p=0,768
The 2 nd / 2-я	64 (28,2%)	26	38	
The 3 rd / 3-я	38 (16,7%)	18	20	
The 4 th / 4-я	16 (7,0%)	9	7	
The 5 th / 5-я	3 (1,3%)	1	2	
The 6 th / 6-я	1 (0,4%)	–	1	
The 7 th / 7-я	1 (0,4%)	–	1	
Missing values / Пропущенные значения	36 (15,9%)	14 (6,2%)	22 (9,7%)	
Valid / Валидные	191 (84,1%)	86 (37,9%)	105 (46,3%)	
Total / Всего	227 (100,0%)	100 (44,1%)	127 (55,9%)	

Окончание табл. 1

Characteristics Характеристики	Total (n=227, 100,0%) Всего (n=227, 100,0%)	Boys (n=100, 44,1%) Мальчики (n=100, 44,1%)	Girls (n=127, 55,9%) Девочки (n=127, 55,9%)	Reliability differences Достоверность различий
What's the baby's count? /Какой по счету ребенок?				
The 1 st / 1-й	118 (52,0%)	56	62	χ^2=3,897, df=3, p=0,273
The 2 nd / 2-й	86 (37,9)	37	49	
The 3 rd / 3-й	21 (9,3)	6	15	
The 4 th / 4-й	1 (0,4%)	1	0 (0,0%)	
Missing values / Пропущенные значения	1 (0,4%)	(0,0%)	1	
Total / Всего	227 (100,0%)	100 (44,1%)	127 (55,9%)	
Prematurity / Недоношенность				
No / Нет	216 (95,2%)	91 (40,1%)	125 (55,1%)	χ^2=5,176, df=1, p=0,023*
Yes: / Да Of them / Из них:	11 (4,8%)	9 (4,0%)	2 (0,9%)	
24 weeks / 24 нед 31 weeks / 31 нед 32 weeks / 32 нед 34 weeks / 34 нед 35 weeks / 35 нед	1 (0,4%) 2 (0,8%) 1 (0,4%) 5 (2,2%) 2 (0,8%)	1 (0,4%) 1 (0,4%) 1 (0,4%) 5 (2,2%) 1 (0,4%)	0 (0,0%) 1 (0,4%) 0 (0,0%) 0 (0,0%) 1 (0,4%)	χ^2=4,278, df=4, p=0,370
Total / Всего	227 (100,0%)	100 (44,1%)	127 (55,9%)	
Mean age, days: Premature infants / Средний возраст, дни: Недоношенные	32,55 (3,174) 24–35 34,00 [31,00; 34,00]	32,44 (3,392) 24–35 34,00 [31,50; 34,00]	33,00 (2,828) 31–35 34,00 [31,00; 34,00]	p=0,909 by the Mann-Whitney's U criterion / p=0,909 по критерию U Манна–Уитни

Table 2. Explained cumulative variance

Таблица 2. Объясненная совокупная дисперсия

Component / Компонент	The initial eigenvalues / Начальные собственные значения			The extracted sum of squares of loads / Извлечение суммы квадратов нагрузок		
	total / всего	% variance / % дисперсии	cumulative % / суммарный %	total / всего	% variance / % дисперсии	cumulative % / суммарный %
1	2,931	16,284	16,284	2,931	16,284	16,284
2	2,061	11,452	27,736	2,061	11,452	27,736
3	1,909	10,603	38,339	1,909	10,603	38,339
4	1,433	7,962	46,301	1,433	7,962	46,301
5	1,290	7,168	53,469	1,290	7,168	53,469
6	0,977	5,429	58,898			
7	0,913	5,075	63,973			
8	0,866	4,812	68,785			
9	0,800	4,442	73,227			
10	0,770	4,275	77,502			
11	0,698	3,880	81,382			
12	0,640	3,557	84,939			
13	0,550	3,056	87,995			
14	0,503	2,793	90,787			
15	0,464	2,578	93,365			
16	0,447	2,485	95,850			
17	0,423	2,349	98,200			
18	0,324	1,800	100,000			

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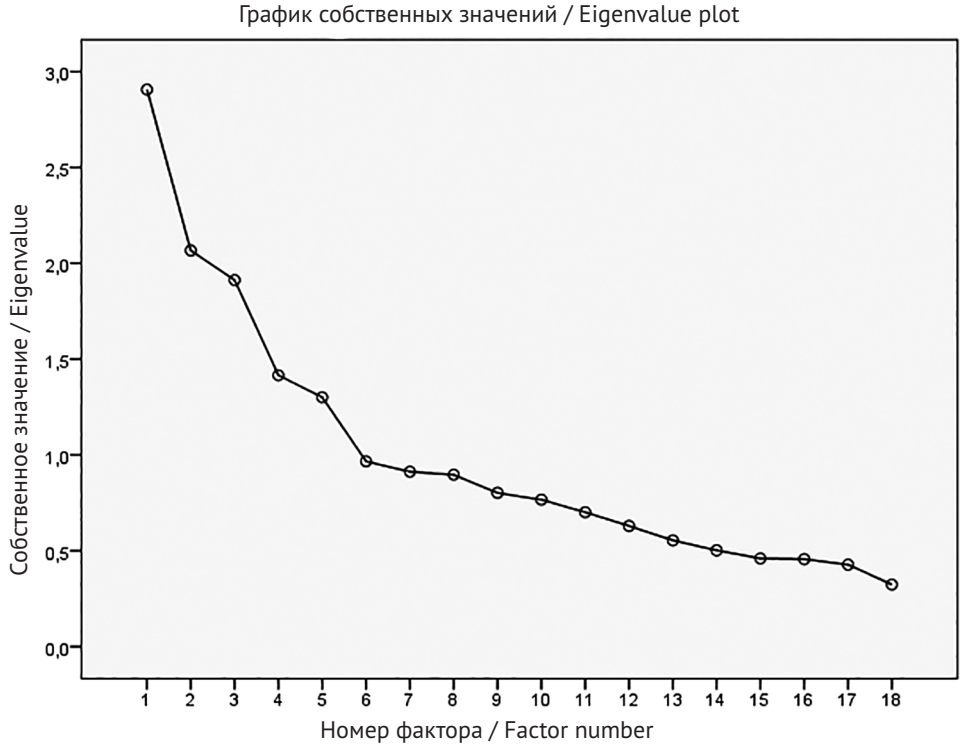

Fig. 1. Graph of eigenvalues of principal components

Рис. 1. График собственных значений главных компонент

Table 3. Indicators of "quality of fit" under 5- and 6-structural factor model

Таблица 3. Показатели «качества подгонки» при 5- и 6-структрной факторной модели

Structure / Структура	A consensus criterion χ^2 / Критерий согласия χ^2	The degree of freedom / Степени свободы (degree freedom)	A significance level / Уровень значимости
5-structural factor model / 5-факторная структура	90,256	73	0,083
6-structural factor model / 6-факторная структура	67,109	60	0,247

to 1.0. The curve of the graph (an exit to a gentle straight line after a sharp decline) is observed at the level of the 6th factor. Therefore, the assumptions of 5 or 6 factors were tested.

The "maximum likelihood" method was chosen as the factorization method, which makes it possible to assess the completeness of factorization based on the distribution of residual correlation coefficients. The indicators of "quality of fit" — χ^2 agreement criteria of the extracted factors at 5- and 6-structural model are presented in Table 3. Table 3 shows that in both cases the level of significance based on the χ^2 concordance criterion is above 0.05, indicating a sufficient number of extracted factors in both cases, i.e. in the case of both 5- and 6-factor structure. However, only in the case of the 5 structural model the eigenvalues of the factors are higher than 1.0 (the Kaiser's criterion), the final choice is made in favour of the 5 factor model.

The rotated factor matrix obtained using the varimax-rotation method is presented in Table 4. Based on the prevalence of factor loadings, the items of the questionnaire were selected as part of the five factors corresponding to the five scales of the questionnaire. Table 4 shows that item 6 ("My child is upset at feeding time"), which had loadings on any of the factors less than 0.3, was not included in any of the scales and was excluded from the questionnaire. Two items (1 and 7) had negative loadings on the first factor, which gives reason to apply the principle of backward counting when processing the collected data (5 — never, 4 — rarely, 3 — sometimes, 2 — often, 1 — always).

The reliability analysis of the scales of the "Baby Eating Behaviour Questionnaire" based on the values of α Cronbach's is presented in Table 5. Factor loadings are indicated in parentheses with item numbers. As can be seen from Table 5, only the 4th scale ("Slow

Table 4. Rotated factor matrix of the 5 factor structure of the Baby Eating Behaviour Questinanaire
Таблица 4. Повернутая факторная матрица 5-факторной структуры «Опросника пищевого поведения младенцев»

	Factor analysis / Факторный анализ				
	1	2	3	4	5
Point 1 / Пункт 1	–0,353	–0,053	0,130	0,206	0,217
Point 2 / Пункт 2	0,412	0,083	0,045	0,104	–0,006
Point 3 / Пункт 3	–0,188	–0,019	0,007	0,710	0,142
Point 4 / Пункт 4	0,276	–0,090	–0,169	0,473	–0,012
Point 5 / Пункт 5	0,018	0,146	0,462	–0,030	–0,107
Point 6 / Пункт 6	–0,255	0,270	–0,025	0,023	–0,033
Point 7 / Пункт 7	–0,514	0,103	0,277	–0,019	0,084
Point 8 / Пункт 8	0,506	–0,154	–0,089	0,446	0,051
Point 9 / Пункт 9	0,185	0,631	–0,014	–0,031	0,215
Point 10 / Пункт 10	–0,042	–0,149	0,901	–0,092	0,051
Point 11 / Пункт 11	0,081	0,882	0,120	–0,140	–0,011
Point 12 / Пункт 12	0,179	0,031	–0,113	0,129	0,419
Point 13 / Пункт 13	0,397	0,156	0,062	–0,068	–0,021
Point 14 / Пункт 14	0,494	0,021	–0,051	0,039	0,089
Point 15 / Пункт 15	0,557	0,050	0,102	–0,003	–0,111
Point 16 / Пункт 16	0,507	–0,139	–0,161	–0,043	0,297
Point 17 / Пункт 17	–0,291	0,164	0,033	0,240	0,449
Point 18 / Пункт 18	–0,057	0,038	0,008	–0,052	0,652

Table 5. Constituent scale items and reliability analysis of the Baby Eating Behaviour Questionnaire scales
Таблица 5. Составляющие шкалы пункты и анализ надежности шкал «Опросника пищевого поведения младенцев»

Scales /Шкалы	Points / Пункты	α Cronbach's / α Кронбаха
1) Desire to eat (8 items) / 1) Желание поесть (8 пунктов)	1 (back counting / обратный подсчет) (–0,353), 2 (0,412), 7 (back counting / обратный подсчет) (–0,514), 8 (0,506), 13 (0,397), 14 (0,494), 15 (0,557), 16 (0,507)	0,684
2) The pleasure of eating (3 points) / 2) Удовольствие от приема пищи (3 пункта)	12 (0,419), 17 (0,449), 18 (0,652)	0,496
3) Sensitivity to overeating (2 points) / 3) Чувствительность к перееданию (2 пункта)	5 (0,462), 10 (0,901)	0,563
4) Slow eating process (2 points) / 4) Медленный процесс приема пищи (2 пункта)	9 (0,681), 11 (0,882)	0,726
5) General appetite (2 points) / 5) Общий аппетит (2 пункта)	3 (0,710), 4 (473)	0,434

eating process") demonstrates acceptable statistical consistency of its constituent items (α Cronbach's >0.7). In the range of doubtful suitability is the value of α Cronbach's scale "Desire to eat" (>0.6).

The comparative characteristics of the item scale components of the Babu Eating Behaviour Questionnaire in the original version and the results of the present study are presented in Table 6.

The "Desire to Eat" scale measures a number of mental and physiological processes relevant to the dynamics of the formation of a child's food sense and the degree of its maturity. The complexity and

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multicomponent nature of the constituent processes is evidenced by the name of the scale, the literal translation of which into Russian ("Food responsiveness") is not only stylistically unsuccessful, but also does not fully reflect the essence of the processes under study. Out of all possible translation variants, we chose the wording "Desire to eat" because it implies: 1) the desire for food (motivational and instinctive component of eating behaviour); 2) a recognition of the situation of eating (perceptual component of eating behaviour); 3) an assessment of the fact of food availability and the upcoming feeding situation, anticipation of it (attentive and anticipatory components of eating behaviour); 4) a positive attitude to the source of food — the mother (dyadic component of eating behaviour); 5) an interest in the "technical" side of the process (cognitive component of eating behaviour). All this determines the presence of a peculiar "reaction" to food, food "responsiveness", i.e. attunement to food, special sensitivity to it — what the authors of the methodology united in the concept of "food responsiveness". It is ensured by a proper level of physiological reactivity of the digestive system, the presence of a tentative reaction to food and a positive evaluation of the feeding process.

The "Desire to eat" scale, which contains 6 items in the original version, only 4 items were included in the Russian version according to the results of our calculations. The remaining 4 items in the original version are included in other scales. Thus, an item 1, "My child seems to look satisfied during feeding" belongs to the scale "Pleasure from eating". It is important to note that in our version it is presented in a reversed form (reverse counting), i.e. the process of feeding the baby, according to the interviewed mothers, is rather associated with the experience of infant's dissatisfaction (unambiguously not associated with the experience of an emotionally positive state). An item 7 ("My baby gets full quickly"), also presented in reversed form, according to the primary source, refers to the "Sensitivity to overeating" scale. Thus, interest in infant feeding in the Russian-speaking population should be considered as a phenomenon associated with the slow eating process. The manifestation of interest in eating is also a failure to form the mechanism of the child's "control" of his/her own feeding process (an item 13 "My child finds it difficult to control his/her own feeding process"), in the original also referring to such a characteristic as "Sensitivity to overeating". Finally, also associated with food interest is the slow pace of eating (an item 15 "My baby is sucking milk more and more slowly while eating"), a feature of infant eating behaviour that is not directly related, according to the original source, to the manifestation of positive attitudes towards food.

Thus, in the proposed version of the Russian-language version of the Baby Eating Behaviour Questionnaire, one of the main scales, the "Desire to Eat" scale, is at most non-specific, as it combines both properties directly related to food interest and those measuring other characteristics of this behaviour — emotional experiences related to feeding, satiety control, and eating rate.

The Eating Enjoyment scale included only one question measuring this trait in the original version — an item 17 "My child likes feeding time". The other two items that make up the scale — an item 12 ("Even if my child has eaten well, he or she will not refuse an offer to eat") and an item 18 ("My child can easily eat again within 30 minutes after the last feeding") are the components of good appetite in the original version (the "Desire to eat" scale). That is, in the Russian-language version, the infant's satisfactory appetite and the pleasure experienced by the infant from the eating process are inseparable, which indicates a weak differentiation of individual properties of eating behaviour that have different natures and psychological purposes.

The scale "Sensitivity to overeating" included only 2 questions, one of which is directly related to the property under study — an item 10 ("My child is satiated with milk earlier than I think he should be"). The other characterises rather the rate of eating, which has some relation to the experienced feeling of satiety, but does not equate to it.

The General Appetite scale, in contrast to the original version, contains two questions, one of which is the same as in the original source — an item 4 ("My child has a strong appetite"), and the other relates to the Enjoyment of Eating scale — an item 3 ("My child likes milk").

DISCUSSION OF THE RESULTS

The calculations carried out in the present study confirmed the 5-factor structure of the Russian-language Baby Eating Behaviour Questionnaire characteristic of the original version. However, the components of the scales were far from those proposed by the authors, and the consistency index of the items composing the scales showed acceptable values in only one case (the Slow Eating Process scale). In one case, a questionable result was obtained (the "Desire to Eat" scale, α Cronbach's >0.6). And the values of the remaining three scales demonstrate unacceptable values for the test (the scales "Pleasure from eating", "Sensitivity to overeating" and "General appetite").

Table 6. Comparison of the content of the scales of the author's version of the Baby Eating Behaviour Questionnaire with the results of the present study

Таблица 6. Сравнение содержания шкал авторской версии «Опросника пищевого поведения младенцев» с результатами настоящей работы

Scales / Шкалы	Authors' of the BEVQ questionnaire version / Версия авторов опросника BEBQ	Authors' of the article version / Версия авторов статьи
1) Желание поесть (Food responsiveness, FR)	2 ("My baby wants more milk than I have") / 2 («Мой ребенок хочет больше молока, чем у меня есть»). 8 ("If possible, my baby tries to drink as much milk as possible") / 8 («По возможности мой ребенок пытается выпить как можно больше молока»). 12 ("Even if my baby has eaten well, he will not refuse an offer to eat") / 12 («Даже если мой ребенок хорошо поел, он не откажется от предложения поесть»). 14 ("My baby always demands to eat") / 14 («Мой ребенок всегда требует поесть»). 16 ("If given the chance, my baby would eat all the time") / 16 («Если бы моему ребенку был дан шанс, то он постоянно бы ел»). 18 ("My baby can easily eat again within 30 minutes of the last feeding") / 18 («Мой ребенок легко может опять поесть в течение 30 минут после последнего кормления»)	1 (reverse counting) ("My baby seems to look satisfied while feeding") - in the original scale "Pleasure with eating" / 1 (обратный подсчет) («Кажется, что мой ребенок выглядит довольным во время кормления») — в оригинале шкала «Удовольствие от приема пищи». 2 ("My baby wants more milk than I have") / 2 («Мой ребенок хочет больше молока, чем у меня есть»). 7 (reverse counting) ("My baby gets full quickly") — in the original "Sensitivity to overeating" scale / 7 (обратный подсчет) («Мой ребенок быстро наедается») — в оригинале шкала «Чувствительность к перееданию». 8 ("Whenever possible, my baby tries to drink as much milk as possible") / 8 («По возможности мой ребенок пытается выпить как можно больше молока»). 13 ("My baby finds it difficult to control his/her own feeding") — in the original "Sensitivity to overeating" scale / 13 («Моему ребенку сложно самому контролировать процесс своего кормления») — в оригинале шкала «Чувствительность к перееданию». 14 ("My baby always demands to eat") / 14 («Мой ребенок всегда требует поесть»). 15 ("My baby sucks milk more and more slowly during breastfeeding") - in the original "Slow eating process" scale / 15 («В процессе еды мой ребенок все медленнее высасывает молоко») — в оригинале шкала «Медленный процесс приема пищи». 16 ("If given the chance, my baby would eat all the time") / 16 («Если бы моему ребенку был дан шанс, то он постоянно бы ел»)
2) Удовольствие от приема пищи (Enjoyment of food, EF)	1 ("My baby seems to look happy while feeding") / 1 («Кажется, что мой ребенок выглядит довольным во время кормления»). 3 ("My baby likes milk") / 3 («Мой ребенок любит молоко»). 6 ("My baby is upset at feeding time") / 6 («Мой ребенок расстроен во время кормления»). 17 ("My baby likes feeding time") / 17 («Мой ребенок любит время кормления»)	12 ("Even if my baby has eaten well, he will not refuse an offer to eat") / 12 («Даже если мой ребенок хорошо поел, он не откажется от предложения поесть»). 17 ("My baby likes feeding time") / 17 («Мой ребенок любит время кормления»). 18 ("My baby can easily eat again within 30 minutes after the last feeding") / 18 («Мой ребенок легко может опять поесть в течение 30 минут после последнего кормления»)
3) Чувствительность к перееданию (Satiety responsiveness, SR)	7 ("My baby feeds quickly") / 7 («Мой ребенок быстро наедается») 10 ("My baby gets full earlier than I think he should") / 10 («Мой ребенок насыщается молоком раньше, чем мне кажется он должен это сделать») 13 ("It is difficult for my baby to control his/her own feeding") / 13 («Моему ребенку сложно самому контролировать процесс своего кормления»)	5 ("My baby finishes eating quickly") / 5 («Мой ребенок быстро заканчивает есть») 10 ("My baby gets full of milk earlier than I think he should") / 10 («Мой ребенок насыщается молоком раньше, чем мне кажется он должен это сделать»)

Ending of the table 6 / Окончание табл. 6

Scales / Шкалы	Authors' of the BEVQ questionnaire version / Версия авторов опросника BEBQ	Authors' of the article version / Версия авторов статьи
4) Медленный процесс приема пищи (Slowness in eating, SE)	5 ("My baby finishes eating quickly") / 5 («Мой ребенок быстро заканчивает есть»). 9 ("The process of feeding my child takes more than 30 minutes") / 9 («Процесс кормления моего ребенка занимает более 30 мин»). 11 ("My baby eats slowly) / 11 («Мой ребенок ест медленно). 15 ("My baby is sucking milk more and more slowly while breastfeeding") / 15 («В процессе еды мой ребенок все медленнее высасывает молоко»)	9 ("The process of feeding my baby takes more than 30 minutes") / 9 («Процесс кормления моего ребенка занимает более 30 мин»). 11 ("My baby eats slowly) / 11 («Мой ребенок ест медленно)
5) Общий аппетит (General appetite, GA)	4 (My baby has a strong appetite) / 4 («У моего ребенка сильный аппетит»)	3 ("My baby likes milk") / 3 («Мой ребенок любит молоко»). 4 ("My baby has a strong appetite") / 4 («У моего ребенка сильный аппетит»)

All this makes it doubtful that the Russian version of the Baby Eating Behaviour Questionnaire can be used for its intended purpose, i.e. for psychometric measurement of eating behaviour in children in the first year of life. Unfortunately, unacceptable reliability values of the test scales (consistency of scale items) make meaningless the further stage of the instrument development — the study of convergent, criterion and content validity .

Thus, in the course of the present study, negative results were obtained with regard to the psychometric properties of the studied questionnaire and possible prospects for its use in paediatric practice. The size of the sample used, the calculation of the suitability of the data set, the multicentre and longitudinal nature of the study exclude the random nature of the revealed patterns, which nevertheless dictates the need to critically evaluate the negative results obtained, which, as already mentioned, have a high level of statistical validity.

The Russian-language Baby Eating Behaviour Questionnaire generally explores the sphere of reflexivity of psychological processes underlying the mechanisms of eating behaviour both in the child and in the mother (based on the principle of mirroring the infant's emotions experienced by the mother as a manifestation of attachment relations in the mother-child system). The components of the Russian-language scales revealed in our work indicate the absence of clear semantic patterns in the studied characteristics of baby eating behaviour. They also indicate that mothers lack knowledge about the developing eating habits of their infants.

This was manifested by a low degree of understanding and differentiation by mothers of such nutritional processes of the child as the desire for food (the food craving), the pleasure derived from feeding, the pace of feeding, and the feeling of satiety. For example, such an important phenomenon of infant feeding as "food responsiveness" (the scale of the questionnaire "Desire to eat"), reflecting the presence of food interest, attunement to food, disposition to it, positive reaction to food, turned out to be little realised and undifferentiated by mothers. This is confirmed by the revealed "coupling" of food responsiveness with other food sensations — the feeling of satiation, emotions experienced during feeding, the rate of milk absorption. That is, we are talking about the absence of semantic clear boundaries of the described psychological phenomenon.

It is important to emphasize that the processes underlying the phenomenon of infant overeating and, as a number of studies have shown, overweight children [5, 6, 7], such as impaired eating speed and sensitivity to satiety, were also represented in the proposed version of the questionnaire in a reduced form (the scale "Sensitivity to overeating" included only one of the three items characteristic of the original version, and the scale "Slow eating process" included only two of the four such items). This indicates a lack of maternal tracking of the processes underlying overeating, and hence the relevance of this problem stated in the introduction to this article.

Such a characteristic as "pleasure from eating" was also ambiguously described. The infant's perception of positive emotions associated with feeding was mixed with food cravings (the "Desire to eat" scale). This fact, from our point of view, has a direct relation to the prevalence of eating

disorders in the early childhood population, as it underlies the phenomenon of "somatopsychological differentiation disorder" (somatopsychological differentiation), a fundamental concept of psychosomatics, manifested in the inability to differentiate emotional experiences (anger, irritation, frustration, etc.) and bodily sensations (hunger, satiety, etc.). This mechanism, which is formed and consolidated at the early stages of ontogenesis of eating behaviour, is expressed in such well-known phenomena as "stress eating", when any emotional discomfort at the level of interoceptive awareness is experienced as a feeling of hunger. The emotional mechanisms of development of eating disorders are the most important, according to I. Chatoor, a well-known researcher of children's eating behaviour. According to the well-known researcher of children's eating behavior I. Chatoor, the emotional mechanisms of the development of disorders can already be traced by the example of infantile anorexia, when refusing food helps to involve the mother more deeply in the infant's eating behavior and, thereby, satisfy the child's unrealized need for attention and emotional warmth [12]. One should also take into account the opinion of some domestic researchers that in families of infants with infantile eating disorders there is an overvalued attitude to food intake (a "food cult"), when the child's "satiety" is considered a criterion of physical and mental well-being. Communication between adults and children, both before and after the onset of the disorder, is emotionally impoverished; in these conditions, food is the only "means of communication" between parents and children [13].

In conclusion, it is important to note once again that the predominantly milk-based nature of the child's diet in the first months of life determines, on the one hand, the relative monotony of "food externality", i.e. the insignificant connection of the child's appetite with the type, taste of food, form of presentation, and environment, and, on the other hand, to a much greater extent determines the dependence of the child's eating behaviour on the perceived emotional and sensory patterns emanating from the mother.

One of the indirect conclusions that follow from the presented material is the need for doctors and psychologists to work on cultivating in young parents an interest in observing the mental life of their infants. It is also important to conduct psycho-educational work devoted to the development of knowledge about the peculiarities of children's behaviour and development. In particular, it is necessary to introduce the method of parental reports and diaries of self-observation of infant feeding, which should be considered as objective material for identifying clinical symptoms of disorders, as well as a method of therapy (the method of "food diary"), repeatedly described in the literature [14].

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