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The child's "difficult" temperament and its relation with parental stress in groups of parents bringing up boys and girls

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Summary

Aim. The aim of the research was to verify whether a child's "difficult" temperamental traits: low flexibility, low perseverance, low good mood and high bad mood are related to parental discrepancy (defined as the distance between parental goals, i.e. the features that parents want to shape in the child and the level of child development in terms of the shaped features) and the difficulties parents experience in their relationship with child (parental stress).

Material and method. The study hypothesized that the child's "difficult" temperamental traits are related to parenting discrepancies and the experienced parental stress. The study involved 319 parents of children aged 3–6 years old (144 girls and 175 boys). A Generalized *k*-Means Cluster Analysis conducted by data mining algorithms was used for the analysis.

Results. The study revealed, that: (a) higher parental stress is related to the negative mood of the children and the higher temperamental flexibility, (b) the lower parental stress is related to the higher positive mood in children. This relation occurs both in the group of parents raising boys and girls.

Conclusions. Parental stress is associated with the temperamental feature of mood. The lower the positive mood of the child, the more the parent experiences stress in relationship with their child.

Key words: parental stress, "difficult" temperament, parenting discrepancy, data mining

Introduction

The article describes a research study which aim was to analyze the relation of a child's "difficult" temperament and its relation with parenting discrepancy (i.e., the distance between the feature that the parent wants the child to develop and the child's development in the shaped features) and parental stress [1, 2].

A child's temperament may moderate many parental behaviors [3–6]. It has a substantial impact on the upbringing process, which must be adapted to the child's

abilities [7–9]. Many of these abilities are determined by the child's temperament [3, 10, 11]. It may also determine the way a parent experiences interactions with the child, and particularly it determines the level of stress that is experienced by parents and parental welfare [12–16].

The parent can experience either satisfaction or difficulties in his/her relationship with the child depending on whether that parent manages to fulfill his/her parental goals [7]. This relationship has already been confirmed in several studies which revealed that it is high (above 0.7) [1, 2, 17, 18]. But this effect can also be related to the child's temperament. A parent who sets a goal, e.g., to develop pesonality traits in a child, may experience subjectively varied feelings of difficulty depending on the child's temperament – especally "difficult" temperament.

The aim of the research presented here was to verify whether the child's "difficult" temperament, is related to the parenting discrepancy and parental stress. The importance of this topic is explained by the fact that parental stress is considered to be the main cause of mistakes and disturbances in the parent–child interaction and, consequently, the formation of personality disorders in children [18, 19].

Relation of parenting discrepancy with the parental stress

The discrepancy, also referred to as "distance" [7] and used as a concept in educational psychology, defines the distance of parental goals, i.e., mental characteristics, which the parent wants to shape in his/her child in the course of the parenting process [20–23] and the current state of that child, i.e., the degree to which the child has developed such characteristics [7]. The discrepancy is the result of the observation of differences and has a purely cognitive character.If parents discern a discrepancy, their motivation to reduce this discrepancy is increased and they make effort to reduce the discrepancy, e.g., by talking with the child, etc. If the parent fails to reduce the discrepancy, e.g., if he/she encounters obstacles in the form of lack of competence or too much discrepancy, he/she may experience difficulty and psychological stress with which he/she will have to cope. Parents may therefore experience difficulties as a result of their inability to meet their parental goals. This hypothesis was already verified and published [18].

Gurycka reports that the parenting discrepancy is the primary variable from which the analysis of each of the upbringing processes should begin [7]. "The validity of this principle in determining the goal of the parenting process is explained by the fact that often, depending on the distance of the current state of the child's development to the chosen goal, the child must be provided with specific experiences other than when that distance is either smaller or larger" [7, s. 140]. The discrepancy between current and desired states triggers motivational states [24]. When obstacles appear on the way to achieving the objective which either prevent or delay achievement of that objective they produce emotions of anxiety, irritation, and despair in the parent [25, 26].

According to Gurycka's concept, the greater the distance between the desirable characteristics and the actual characteristics of the child, the greater the perceived parental difficulty (stress) [19]. The upbringing difficulty as experienced by the parent

is an internal state that is characterized by tension and is caused by a difficult situation that can make that parent feel the need to reduce the discrepancies [7, 24, 25, 27]. This is a response to the discrepancy at the emotional-motivational level.

The parenting discrepancy increases the parent's motivation and also starts the strength of reducing discrepancies, i.e., by conversations with the child.

In conclusion, we can state that there are theoretical reasons to believe that the discrepancy between parenting goals, i.e., the mental characteristics that the parent wants to shape in the child, the degree to which the child has developed such characteristics and the speed of achieving the aim (the parent's expectations regarding progress of this process), may be a determinant of the parental stress.

The child's "difficult" temperament and the relation between discrepancy and parental stress

The concept of temperament is not homogenous, and researchers who are biologically oriented have identified it with the concept of personality [29–31]. Listed in the concepts of temperament, the common characteristics of this construct relate to recognition of this concept as genetic, noticeable from early childhood, and relatively stable personality traits [32]. In the 1970s, the first theories regarding a child's temperament were established, including the temperament theory of Thomas and Chess [33, 34], the developmental model of temperament by Rothbart and Derryberry, Kagan's concept of temperament, and Buss and Plomin's behavioral-genetic concept of temperament [32].

Thomas and Chess's concept is particularly important for the analysis of the impact of a child's temperament on parental stress [33]. With the construct of a temperamental compatibility occurring between the parent and child, it explains the possible causes of difficulties in the relationship with the child. The authors distinguished ten temperament traits in the concept:

1. Overall level of activity (level of energy, vigor, motor activity disclosed in action).
2. Activity–sleep (tendency to frequently change positions during sleep).
3. Approximation–withdrawal (tendency to seek new situations, to meet new people).
4. Flexibility–stiffness (ease of adapting to changes in the environment).
5. Quality of mood (prevailing mood is positive or negative).
6. Rhythmicity–sleep (regularity in terms of sleep).
7. Rhythmicity–food (regularity in terms of quantity of food consumed).
8. Rhythmicity–daily habits (regularity in terms of physiological needs).
9. Focus (ability to concentrate, despite confounders).
10. Persistence (perseverance in carrying out tasks in the long term).

According to researchers, a certain combination of some of these features (mood, flexibility and persistence) creates a so-called profile of "difficult" temperament [35]. This combination is a profile characterized by low levels of persistence, low flexibility, low positive mood and high negative mood.

How does such setting of temperamental features involve parental stress? A parent whose child has a flexible temperament may experience fewer difficulties than one

whose child has a rigid temperament. The parent's feelings can be subjective in the sense that a child with either a rigid or a flexible temperament may be distant from the set goals. But the parent of a child with a flexible temperament might have the impression that the parenting process is not so difficult, that the child listens more willingly and is trying to fulfill his/her orders, and that the child is happy to work with him/her. The parent of a child with a low flexibility temperament might have exactly the opposite impression.

Also parents of children with a flexible temperament may feel that they have a greater impact on the child. Bugental proved that the parents' perception that they have no influence on the child's upbringing (or the impact is limited) is related to the negative perception of the child and the acceptance of verbal aggression towards them [28, 36]. Children with a higher level of persistence may be more persistent in pursuit of the goal. Parents of children who have a positive mood can experience fewer parental difficulties since the relationship with the child is generally easier and more pleasant than a relationship with a child with a bad mood. Therefore, the coexistance of these temperamental traits with parental stress and discrepancy was tested in the study (hypothesis H1).

The gender of a child and his/her age may also influence the relationship between discrepancy and experienced parental stress. Boys, more often than girls, are classified as "difficult" [37]. In this case, the child's gender may interact with temperament. The perception of boys as "more difficult" may also be related to their temperamental features, thus checking the interactions between the child's gender and temperament seems to be justified. The relation between discrepancy and experienced parental stress may vary depending on the gender of the child. This constitutes the second research hypothesis of this study (H2).

Research method

Aim of the study and hypotheses

The aim of the study was to verify assumptions regarding the relation of child's "difficult" temperament with the following variables: parenting discrepancy and parental stress. The aim was to answer the following research questions:

1. Is there relation between parenting discrepancy, parental stress and the child's difficult temperament?
2. Is there relation between parenting discrepancy, parental stress and the child's difficult temperament in the groups of parents stratified by child's gender?

The following hypotheses were put forward:

H1: "Difficult" temperamental traits are related to higher parenting discrepancy and parental stress.

H2: In the groups of parents raising boys and girls "difficult" temperamental traits are related with higher parenting discrepancy and parental stress.

Ethics committee approval

All procedures performed in studies involving human participants were in accordance with the ethical standards. The research study received the approval of the Ethics Committee.

Research sample and procedure

The study was conducted online in the territory of Poland. A questionnaire on parental goals designed for parents was posted on a website. At the beginning of the study the parents were asked to think about their child that was currently attending kindergarten and to answer questions only about that child. This procedure protected against cross answers if the parent had more than one child. The study involved 319 subjects, both fathers and mothers of preschoolers.

The age of parents ranged from 19 to 54 years, the largest group was aged 28–35 (the group can be described as a group of young adults); the mode was 33 years; the median was 27 years.

The study group was dominated by well-educated people. The mode indicates that the largest group were people with a university education (63.4% of the sample); 4.6% of the sample had an elementary and vocational education; 29% had a secondary education; 2.9% had a PhD.

The subjects were mainly from large cities (city population of 50,000–200,000 – 22.3% of the sample; city population of 200,000–500,000 – 11.4% of the sample; city population of > 500 000 – 26.3% of the sample), but the study also included subjects from rural areas and small towns (rural – 13.1% of the sample; town population up to 10,000 – 6.9% of the sample; town population of 15,000 – 20% of the sample).

There was an overwhelming number of mothers (90.3%) over fathers (9.7%) in the sample. The study sample included a similar number of parents of boys (175 boys, 54.9%) and of girls (144 girls, 45.1%). The study included parents of preschoolers aged 3–4 years (151 children – 47.3% of the sample) and 5–6 years (168 – 52.7% of the sample).

The distribution of the children's gender in the different age groups was as follows: in the 3-year-old group the number of girls was 34 (51.5% of the sample) and the number of boys was 32 (48.5% of the sample); in the 4-year-old group the number of girls was 34 (40% of the sample) and the number of boys was 51 (60% of the sample); in the 5-year-old group the number of girls was 52 (52.5% of the sample) and the number of boys was 47 (47.5% of the sample); and in the 6-year-old group the number of girls was 24 (34.8% of the sample) and the number of boys was 45 (65% of the sample).

The children of parents taking part in the study attended state-run (186 children, 58.3% of the sample) as well as private (67 children, 21% of the sample), Catholic, and other preschools (58 children, 18.2% of the sample). The largest number of children attended state and private preschools, fewer children went to Catholic preschools, and the smallest number attended Montessori preschools (these preschools are the fewest in number in Poland).

Method of data analysis

Generalized *k*-Means Cluster Analysis – conducted by data mining association algorithms – was the method chosen for the data analysis to determine the relation between the child's temperament, parental discrepancy and experienced parental stress. The use of this method of clustering can provide valuable information what percentage of the population has high, average and low values in the analyzed variables. It groups people into clusters due to their similarity in their results in all variables [38].

Measurement Tools

Discrepancy Scale and its psychometric properties

The Discrepancy Scale was created specifically for the analyses and measured parental goals and the distance between parental goals (personality characteristics that the parent wants to develop in the child) and the current level of the child's development in this respect [17, 18]. The Discrepancy Scale consists of 12 questions arranged in pairs. Each pair measures the parent's response related to one parental goal. The first question in each pair is about the parental goal itself (Appendix 1) – the parents are asked to list the traits they would like their child to develop (no characteristics were provided by the researcher, i.e., the parents named them on their own). At the same time, on a scale from – 7 to 7, the parents estimated how much they wanted the child to develop the desired traits. The second question in each pair concerned the extent to which the child had already developed a particular trait. On a scale from – 7 to 7, the parents estimated the degree to which the child had developed the trait. Three pairs of questions were related to positive traits (traits that the parents wanted the child to develop) and three to negative traits (traits that were not wanted by the parent).

The distance between the parental goal and the child's current development level was measured using the squared Euclidean distance, and six measurements were obtained (three for the desired traits and three for the undesired traits).

Reliability

The scale is characterized by high reliability in the sense of being internally compatible, Cronbach's $\alpha = 0.815$. Given that the scale has only six items, its reliability is not due to the size of the items but to their strong correlation, ranging from 0.533 to 0.635. The contemporary measure of reliability, which is the intraclass correlation coefficient, was RO2 = 0.423. According to the coefficient, the scale has moderate reliability.

Exploratory factor analysis

Exploratory factor analysis (EFA) was conducted in order to assess the factorial validity of the scales. The K-M-O measure of adequacy of the sample was 0.768, thus

the test items were strongly correlated and measured the same characteristic [39]. Bartlett's test of sphericity was $\chi^2(15) = 543.329$; $p < 0.001$. The first factor explaining 30.449% of the variance of all results is the factor that measures the discrepancy from the negative goals (items: disc4 – disc6). The second factor, explaining 29.873% of the variance of all results, is the factor which measures the discrepancy from the positive goals (items disc1 – disc3).

Scale of experienced parenting difficulty (stress)

The scale of experienced parenting difficulty measures the level (severity) of the difficulty experienced by the parent in the relationship with the child. This difficulty is defined as the parent's internal state as characterized by tension, which has its origins in the parenting process and results from the relationship with the child. Therefore, to experience difficulties means to experience an internal state of tension conditioned, in this case, by factors associated with upbringing the child. The items of the scale are included in Appendix 2.

Reliability

Reliability of the tool was calculated using Cronbach's alpha, which was $\alpha = 0.965$ for the scale. This is a very high reliability, given that the scale has only 8 items. This internal consistency of the tool is high due to the strong correlation of the positions and not to their diversity. Positions are highly correlated in the range from 0.676 to 0.908; the intraclass correlation coefficient is RO2 = 0.775.

Exploratory factor analysis

Calculations were carried out using exploratory factor analysis to test the factorial validity of the tool, the purpose of which is to reduce the variables from the input set to their smaller number according to the principle that the belonging of the item to the set of fewer new variables will be connected by the meta-trait.

A measure of the adequacy of the sample K-M-O was 0.935; a high score indicates that the correlation matrix expresses the structure of the dependent variables and that test items are highly correlated and thus measure the same trait; Bartlett's test of sphericity $\chi^2(28) = 2207.317$; $p < 0.001$. Based on this result, a similarity structure of the variables can be assumed.

Factor analysis (Varimax method) for the scale showed the existence of a single factor, explaining altogether 74.966% of the variance of all the results. Due to the fact that factor analysis distinguished only one factor, it did not carry out the rotation.

Dimensions of Temperament Survey DOTS-R

Windle and Lerner's modified questionnaire of temperamental dimensions was used to measure the child's temperament. The questionnaire was adapted to Polish

conditions [34]. The questions of the DOTS-R measure 10 traits of temperament (see subchapter *The child's "difficult" temperament and the relation between discrepancy and parental stress*).

The questionnaire consisted of 53 questions. In order not to excessively prolong the testing time, only those scales were chosen that seemed to be important from the point of view of the topics being analyzed here, namely: (a) flexibility-stiffness (in order to identify the child's ease of adapting to new situations), (b) quality of mood, and (c) persistence.

Parameters of the psychometric scales of the DOTS-R were tested. Both the scale of temperamental flexibility and persistence were characterized by good parameters. However, the scale of mood had lower parameters of reliability due to its dichotomous character [31]. Five items measured a good mood and two measured a negative mood of the child. Despite reversing the key as recommended by the authors [31], the scale still had fairly poor reliability for the Polish sample. An attempt was made to separate these items. It turned out that dividing the mood scale into two subscales measuring both positive and negative mood achieved very good measures of reliability; this related particularly to the intraclass correlation coefficient.

Reliability of the scale of flexibility–stiffness

The value of Cronbach's α coefficient for the five items was $\alpha = 0.807$. This is a satisfactory reliability. The intraclass correlation coefficient (0.455) with a probability of 95% was in the range of 0.409–0.503.

Reliability of the scale of good mood

The value of Cronbach's α coefficient for the five items was $\alpha = 0.930$. This is a satisfactory reliability. The intraclass correlation coefficient (0.727) with a probability of 95% was in the range of 0.694–0.759. This is a very good reliability.

Reliability of the scale of bad mood

The value of Cronbach's α coefficient was $\alpha = 0.616$ for two items. This is a satisfactory reliability. The intraclass correlation coefficient (0.445) with a probability of 95% was in the range of 0.363–0.519.

Reliability of the persistence scale

The value of Cronbach's α coefficient was $\alpha = 0.751$ for four items. This is a satisfactory reliability. The intraclass correlation coefficient (0.430) with a probability of 95% was in the range of 0.379–0.482.

Results

The relationship between parental stress and parenting discrepancy for the entire sample and for groups of parents bringing up boys and girls

The first step of the analysis was to build a single-level regression model which calculated the strength of the relation between parental stress and discrepancy for the entire sample. It was sequentially examined how this relationship had changed in groups divided by gender and age of the child. For this purpose, the simple regression method used discrepancy as a predictor and parental stress as the dependent variable.

The model proved to be statistically significant; F (1,318) = 150.913; $p < 0.001$. It explained 32.3% of the variability of parental stress, $R^2 = 0.323$. The discrepancy variable turned out to be associated with the variable of parental stress on an average level: $\beta = 0.568$; $p < 0.001$. The non-standardized regression coefficient was 0.056 (which means that when the discrepancy rises by one unit, parental stress increases by 0.056 units).

In a further step, the same relation was calculated separately for the groups of boys and of girls (gender was a grouping variable). For the group of boys, the regression model explains 31.2% of the variability of parental stress ($\beta = 0.559$); for the group of girls it explains 33.6% ($\beta = 0.580$).

Relation of children's "difficult" temperament with parenting discrepancy and parental stress

The analysis conducted using Generalized *k*-Means Cluster Analysis on the whole sample added new information to achieved results. Parents who experienced more stress and had a higher discrepancy had children who had lower good mood and perseverance and higher bad mood as well as flexibility (Figure 1). This result presents second cluster to which belongs approximately 30.1% of research sample. On the other hand, parents who experienced lower stress had a lower discrepancy had children with higher profile in terms of good mood and perseverance and lower in terms of bad mood and flexibility. This result presents first cluster to which belongs approximately 69.9% of the sample (Table 1).

Table 1. **Means of the clusters in the whole sample**

Cluster	Flexibility	Good mood	Persistence	Bad mood	Difficulty	Discrepancy	Number of cases	Percent (%)
1	11.23	39.30	19.73	3.43	136.66	13.96	223	69.9
2	22.10	27.87	18.83	7.50	355.16	45.80	96	30.1

Table 2. **ANOVA for the variables in the whole sample**

Variable	Intergroup variance	df	Intragroup variance	df	F	p	η^2	η^2 interpretation
Flexibility	7930.91	1	18224.83	317	137.95	< 0.005	0.303	large

table continued on the next page

Good mood	8760.56	1	23553.37	317	117.91	< 0.005	0.211	large
Persistence	55.16	1	16708.25	317	1.05	0.307	0.003	very small
Bad mood	1106.50	1	4396.93	317	79.77	< 0.005	0.201	large
Difficulty	68026.14	1	45464.95	317	474.31	< 0.005	0.599	large
Discrepancy	3203925.09	1	8571648.78	317	118.49	< 0.005	0.272	large

df – degrees of freedom; F – Fisher test; p – statistical significance level; η^2 – effect size

The differences between clusters are significant in all variables apart from persistence – the effect sizes are large (Table 2). The first hypothesis was confirmed.

To find out if this effect is different among parents bringing up boys and girls, three additional analyzes were performed using the Generalized *k*-Means Cluster Analysis. First, in the group of parents bringing up girls and then in the group of parents bringing up boys. It turned out that the clusters obtained in the group of parents bringing up girls and boys are very similar to those obtained for the whole research group (Figure 2, 3).

In the group of parents bringing up boys and girls, two clusters were obtained. More frequently represented cluster (72% of cases in the group of girls and 67% in the group of boys) is the cluster corresponding to the first cluster in the general population (Table 3). Parents belonging to this cluster experienced little discrepancy and parental stress. They also had children who were characterized by high good mood, low bad mood and relatively lower temperamental flexibility. The second cluster consisted of fewer people in the study groups (28% of the cases in the group of girls and 33% in the group of boys). The parents of this cluster experienced a great deal of discrepancy and

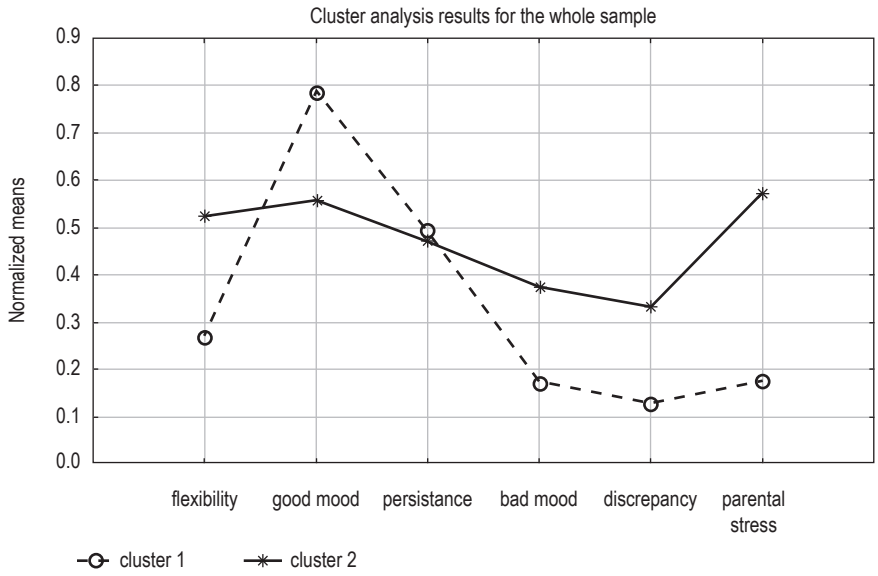

Figure 1. **The results of Generalized k-Means Cluster Analysis for the whole sample**

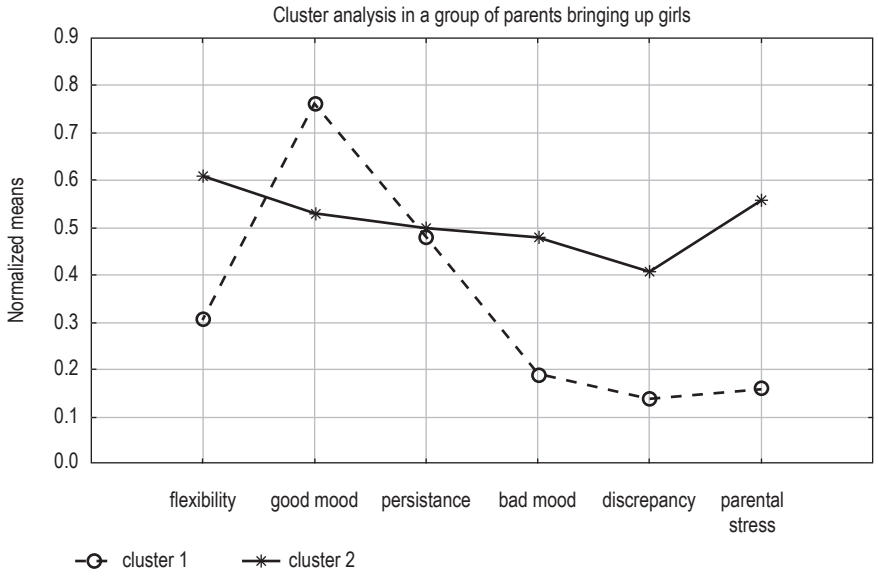

Figure 2. **The results of Generalized k-Means Cluster Analysis for the group of parents bringing up girls**

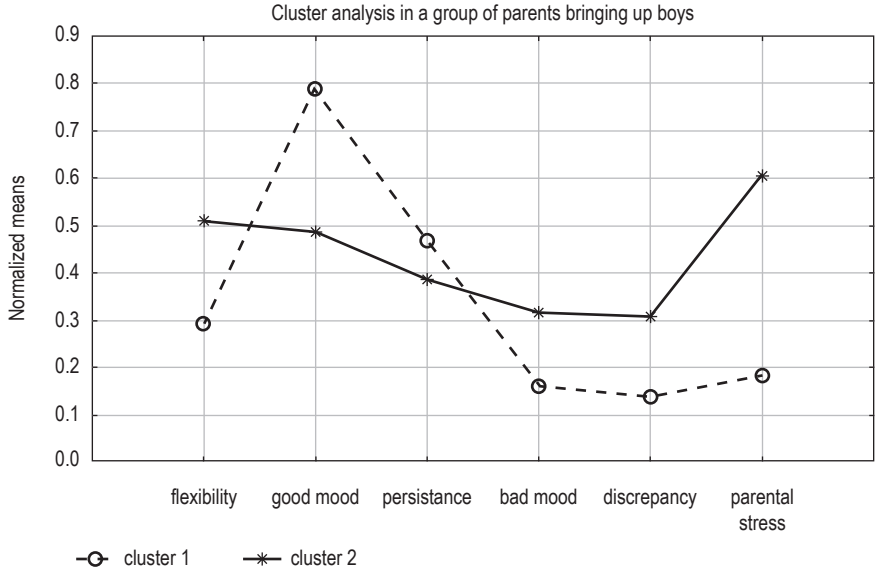

Figure 3. **The results of Generalized k-Means Cluster Analysis for the group of parents bringing up boys**

stress, and their children were characterized by higher bad mood and lower good mood as well as higher flexibility. Apart from persistence in the group of parents bringing up girls, the differences between clusters in all variables were statistically significant. Effect sizes in the group of parents raising girls for all variables except persistence are large (Table 4). The effect sizes in the group of parents raising boys for flexibility, good mood, parental stress, and discrepancy are large, for persistence – small and for bad mood – moderate (Table 4).

Finally, both groups of parents (bringing up boys and girls) were compared in terms of differences in discrepancy, stress and temperamental traits. The results showed that the groups did not differ significantly (Figure 4, Table 5, 6). There were similar clusters in groups of boys and girls. Clusters in the group of parents experiencing stress have a higher level of negative mood in the group of girls (cluster 1) than in the group of boys (cluster 2).

Table 3. **Means of the clusters in the group of girls and boys**

Gender	Flexibility	Good mood	Persistence	Bad mood	Parental stress	Discrepancy	Number of cases	Percent (%)
Girl	10.58	38.14	19.31	3.61	127,32	12.58	104	72.2
Girl	21.40	26.60	19.92	9.07	376.07	44.70	40	27.7
Boy	12.25	40.92	20.41	3.26	147.22	14.77	117	66.9
Boy	21.31	27.94	17.50	6.31	328.67	46.29	58	33.1

Table 4. **ANOVA for the variables in the group of girls and boys**

Variable	Gender	Intergroup variance	Df	Intragroup variance	df	F	p	η^2	η^2 int.
Flexibility	girl	3378	1	6667	142	71.95	< 0.005	0.336	large
Good mood	girl	3850	1	12620	142	43.32	< 0.005	0.234	large
Persistence	girl	11	1	8173	142	0.19	0.667	0.001	very small
Bad mood	girl	861	1	1893	142	64.58	< 0.005	0.313	large
Difficulty	girl	29792	1	20666	142	204.71	< 0.005	0.590	large
Discrepancy	girl	1787518	1	3615272	142	70.21	< 0.005	0.331	large
Flexibility	boy	3179	1	2713	173	43.26	< 0.005	0.540	larde
Good mood	boy	6528	1	9091	173	124.22	< 0.005	0.418	large
Persisitence	boy	330	1	8249	173	6.93	0.009	0.038	small
Bad mood	boy	360	1	2331	173	26.69	< 0.005	0.134	avarage
Discrepancy	boy	1276705	1	5086631	173	43.42	< 0.005	0.201	large
Difficulty	boy	38514	1	23428	173	284.40	< 0.005	0.622	large

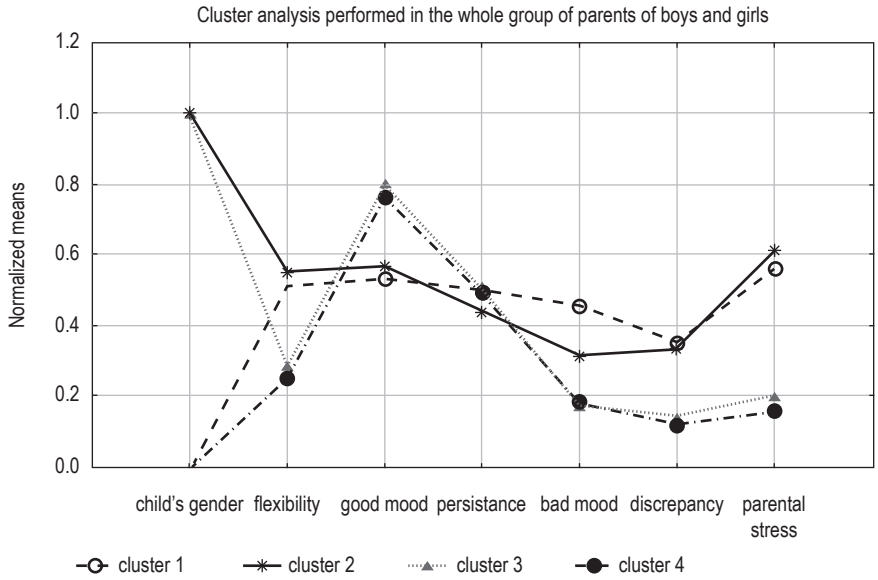

Figure 4. **The results of Generalized k-Means Cluster Analysis in the group of boys and girls**

Table 5. **Means of the clusters**

Cluster	Gender	Flexibility	Good mood	Persistence	Bad mood	Difficulty	Discrepancy	Number	Percent (%)
1	girl	21.4	26.6	19.9	9.1	376.1	44.7	40	12.5
2	boy	23.1	28.2	17.5	6.3	356.8	48.8	50	15.7
3	boy	12.1	40	20.2	3.5	147.6	15.8	125	39.2
4	girl	10.6	38.1	19.3	3.6	127.3	12.6	104	32.6

Table 6. **ANOVA for the variables**

Variable	Intergroup variance	df	Intragroup variance	df	F	p-value	η^2	η^2 int.
Flexibility	7925	3	18231	315	45.65	< 0.005	0.303	large
Good mood	9041	3	23273	315	40.79	< 0.005	0.280	large
Persistence	267	3	16497	315	1.70	0.168	0.016	small
Bad mood	1201	3	4303	315	29.30	< 0.005	0.218	large
Difficulty	69663	3	43828	315	166.89	< 0.005	0.614	large
Discrepancy	3360228	3	8415346	315	41.93	< 0.005	0.285	large

Recapitulation and discussion

The study did not confirm any difference in the association of variables in groups stratified by gender of the child. This means that there was no difference between the group of parents of boys and girls in terms of the relationship between discrepancy and the experienced parental stress. Parents who failed to meet their parental goals experienced discrepancy and stress regardless of whether they raised a boy or a girl. This is a very important result. Studies showed that boys – perhaps because of their greater activity – are more often characterized by teachers as being "difficult" [37]. However, when it comes to meeting parental goals, any difficulty in this area is related to the experience of parental stress regardless of the child's gender.

What is more, when it comes to the coexistence of temperamental traits with discrepancy and experienced parental stress, no differences were observed between the boys and girls. In the whole population and within groups of parents raising boys and girls, two characteristic clusters were observed:

a) parents with a low level of discrepancy (who achieved their goals) and parental stress. This cluster included parents whose children had high scores in good and low in bad mood.
b) a cluster of parents with higher results in discrepancy (high level of failure to meet their parental goals) and experiencing stress. This cluster included parents whose children had moderate scores in good and higher in bad mood in comparison to children of parents from the first cluster. Children of these parents also had a much higher level of flexibility.

The information obtained by using cluster analysis has revealed that the child's bad mood and flexibility are related to parental stress and discrepancy.

The use of the cluster analysis method presented here showed not only the interesting relations between variables, but also revealed which clusters selected due to temperamental characteristics are most often represented in the population. Cluster analysis revealed that the cluster which includes parents who experience lower stress is twice more frequent than the cluster of parents who experienced stronger stress. It is no surprise that the cluster of parents with higher outcomes in terms of experiencing stress and discrepancy is smaller than cluster of parents with lower levels of discrepancy and stress. The distribution of the parental stress is rightly skewed and the low results are overrepresented in the population. Fewer parents experience the inability to meet their parental goals [37]. Some surprise, however, is the relation between higher outcomes in discrepancy and stress and children's temperamental flexibility. Theoretical considerations have led to the assumption that the temperamental flexibility of the child will be associated with a lower level of stress and discrepancy. But it turned out to be the opposite. This association should be confirmed in the future in other samples. However, there is no doubt about the relation between the discrepancy, stress and the negative mood of the children – this effect is especially strong in the group of parents of girls.

Many studies revealed that a child's temperament can strongly condition the attitudes of the parents towards the child [40–42]. Presented results confirm, moreover, the studies of other researchers who argued that the child's temperament affects the parents' level of stress [43].

There are a few limitations of the study. The study did not control for many other interesting variables that could be related to discrepancy and parental stress, such as parent's gender, order of the child in the family, or family socio-economic position [37]. In the future studies, other temperamental features of children should also be analyzed.

The results obtained here have some important implications for upbringing. Knowledge about the correlation of certain temperamental traits with parental stress should be taken into account in counseling, especially with the bad mood of the child. Studies conducted by Szymańska and Aranowska revealed that experiencing parental stress is related to the parental mistake of constraining the child's activity [17]. Gurycka [19] claimed that parental mistakes may be factors determining the formation of personality disorders in children. If this is the case, parental stress can also be an important factor in the development of personality disorders in children as it is related to parental mistakes.

The described research revealed that there are temperamental traits of the child which coincide with parental stress. Perhaps (this is only a thesis) certain temperamental traits predispose not only genetically but also through the contribution to the "difficult upbringing situation" in the formation of personality disorders in children.

APPENDIX 1

Please list three traits that are especially important to you as a parent and for which you make an effort to make sure your child develops them.

Trait one:..... (enter trait name here)

Mark how important this trait is to you as a parent, the extent to which you wish your child to be like this.

–7 –6 –5 –4 –3 –2 –1 0 1 2 3 4 5 6 7

(-7) definitely not like this (7) definitely like this

Mark the extent to which (write your child's name) has developed the trait in question.

–7 –6 –5 –4 –3 –2 –1 0 1 2 3 4 5 6 7

(-7) definitely doesn't have (7) definitely has

APPENDIX 2

dif 1 I have many parenting problems with my child.

dif 2 I have the impression that bringing up my child is a constant struggle.

dif 3 I experience parenting problems associated with my child.

dif 4 I am constantly upset due to conflicts with my child.

dif 5 I often experience powerlessness in contacts with my child.

dif 6 I am constantly angry due to my child's behavior.

dif 7 I cannot cope with my child.

dif 8 I experience a lot of anxiety in contacts with my child.

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