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Gifted children and their peers perceived parental attitudes, psychosocial problems and quality of life

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ABSTRACT

Introduction and aim. Gifted children are defined as extraordinary children due to their high level of intelligence and specific skills. This study aimed to examine gifted children and their peers perceived parental attitudes, quality of life (QoL), and psychosocial problems.

Material and methods. The study sample consisted of two groups: (1) gifted children (study group) and their parents and (2) peers (control group) and their parents. Data were collected using a descriptive characteristics form, the parental attitude scale (PAS), the pictorial pediatric symptom checklist (PPSC) and the pediatric quality of life inventory (PedsQL).

Results. Both groups were similar in terms of age, gender and grade level. It was mostly the mothers who completed the data collection forms. The study and control groups had a mean PAS score of 94.18 ± 0.738 and 99.31 ± 0.798 , respectively and a mean PPSC score of 16.11 ± 0.475 and 16.76 ± 0.480 , respectively. The study and control groups had a mean QLS score of 83.19 ± 0.70 and 80.28 ± 0.83 , respectively. There was a weak positive correlation between the PAS and PPSC scores ($r=0.92$; $p<0.166$).

Conclusion. It is recommended that parental attitudes and their effects on children's psychosocial status and QoL be monitored and that parents be supported. Parental attitudes and a child's psychosocial and behavioral problems and QoL levels should be assessed to by health professionals be able to improve the well-being of both children and their parents.

Keywords. gifted children, parental attitudes, psychosocial problems and quality of life, pediatric nursing

Introduction

Although intelligence is a broad concept, it is a common component of talent. The concept of intelligence has evolved throughout history, but today it refers to only mental potential and academic achievement, and

therefore, falls short of determining talent, which encompasses intelligence. In this study, we used the concept of “gifted” instead of “genius.”^{1,2}

Giftedness is a complicated and extensive concept, and therefore, there is no consensus on the definition of “gifted child.” Although giftedness used to be defined from a one-parameter intelligence level, today, it is defined from the perspectives of talent, performance, and intelligence.³

Gifted children are defined as extraordinary children because they have high levels of intelligence and specific skills. Due to their distinctive comprehension, consideration, and perception capacities, they go through positive or negative experiences in the family, school, and society. Although they generally have no academic and linguistic problems, they experience emotional and social problems, such as challenging family authority, having difficulty communicating with peers, solitude, becoming easily bored, giving the impression of knowing it all, fear of making errors or failing, perfectionism, depression, anxiety, and social isolation.⁴⁻⁷ They may also have difficulty communicating with their friends and have more problems than their peers due to their intuitive and sensitive nature.^{8,9} The talents that gifted children have can affect the life heritage of children as well as their psychosocial problems. In the study conducted on the life heritage of gifted children, it was found that the quality of life of gifted children differed from their peers. Social and physical functionality, which are subcomponents of quality of life, were found to be worse in gifted children compared to their peers. In the study, it was stated that the quality of life of gifted children was significantly lower than that of their peers and that the abilities of children could negatively affect their quality of life.¹⁰

In the development of gifted children, parents' education levels, personality traits and communication styles can be among the important variables. Especially in early childhood, the positive attitude of parents, their support and involvement with their children can have a significant impact on their children's development by providing an atmosphere that encourages outstanding results. A kind, supportive, and respectful school, family and peer environment helps gifted children develop behavioral, emotional, and social skills and thrive academically, while parental conflict and rude and authoritative attitudes hinder their communication skills.¹¹⁻¹³ Unfortunately, when gifted people are unable to meet their own and their family's high standards, they may become disillusioned and dissatisfied with themselves and their environment, and may face numerous psychosocial problems.¹⁴⁻¹⁶ Perceived negative parental attitudes may negatively impact gifted children's quality of life (QoL) and psychosocial status. QoL is a response to mental, physical, and social conditions. In other words, QoL refers to perceived well-being and value, which are the most fundamental subjective indicators of being at peace with oneself.^{17,18}

As with all children, parents' attitudes play a vital role in the development of gifted children. Positive attitudes support psychosocial and behavioral development and improve the quality of life. Low psychosocial problems and high quality of life can have a significant impact on the individual and social development of children and can help them grow up as healthy adults. parents, teachers and nurses have

important duties in the developmental processes of children. Pediatric nurses are responsible for protecting the physical, emotional and social health of children and play an important role in the development of gifted children. Therefore, pediatric nurses should monitor children and identify and solve their problems. Few studies have investigated the relationship between parents' attitudes and the psychosocial problems and quality of life of gifted children. Furthermore, there is little published research examining the impact of parents' support and family-centered care by pediatric nurses on children's psychosocial and behavioral development.

Aim

Therefore, this study analyzed the perceived parental attitudes, psychosocial problems and quality of life of gifted children and their peers. It is thought that the study can be pioneering by contributing to the field with the data obtained. In addition, in line with the findings, it is thought that it can be a resource in the content of training programs for parents.

Material and methods

This descriptive study was conducted to compare gifted children and their peers perceived parental attitudes, psychosocial problems, and QoL.

Research population and sample

The study was conducted in four science and art centers of a metropolitan city and at the elementary and secondary schools with the highest number of students in a major district. The study group consisted of 231 second- and fifth-grade gifted children and their parents. The first reason was that gifted children take an exam administered by the Ministry of National Education in the first, second, and third years, and therefore, they begin to attend science and art centers from the second year on. The second reason was that children reach preadolescence from sixth grade on, and therefore, may experience psychosocial problems.¹⁹ The control group consisted of 249 second- to fourth- grade (elementary school) and fifth-grade (secondary school) children and their parents. Both groups were similar in terms of grade level, age, and gender.

Inclusion criteria for both groups

- Those with no attention deficit hyperactivity disorder (ADHD), autism, dyslexia, and any other chronic disease were included in the sample.
- Second- and fifth- graders were recruited.
- Not experiencing stress or trauma in the last 6 years
- Filling out data collection forms completely

Exclusion criteria for both groups

- Not going to 2nd or 5th grade
- Refusing to participate in the study
- Filling out data collection forms incompletely

Data were collected using a descriptive characteristics form, the parental attitude scale (PAS), the pictorial pediatric symptom checklist (PPSC), and the pediatric quality of life inventory (PedsQL). After data collection, grades were defined as second, third, fourth, and fifth to sample a control group. Sections for each grade were selected using simple random sampling. Power analysis was performed using GPower 3.1 to ascertain whether the sample was large enough ($n=480$) to detect significant differences. The power analysis revealed a power of 90% with an effect size of 0.1482 ($\alpha=0.05$).

Data collection tools

The descriptive characteristics form consisted of 18 items on children's demographic characteristics (age, gender, grade level, school, birth order, etc.) and parent's demographic characteristics (age, gender, education, income, employment, etc.).

The parental attitude scale (PAS) is a 30-item scale developed by Kucukturan.²⁰ It consists of two subscales; responsibility/acceptance (15 items) and authority/supervision (15 items). The total score ranges from 15 to 75 in each subscale. Higher "responsibility/acceptance" scores indicate that parents accept, support, and trust their children more and give them more responsibility. Higher "authority/supervision" scores indicate that parents put more pressure on their children, inflict more punishment on them, have more psychological control over them, make them feel more guilty and embarrassed, and show them less affection. Kucukturan reported that PAS had a Cronbach's alpha of 0.79, while the responsibility/acceptance and authority/supervision subscales had a Cronbach's alpha of 0.88 and 0.85, respectively. PAS had a Cronbach's alpha of 0.78 in this study.²⁰

The pictorial pediatric symptom checklist (PPSC) is a 35-item Likert-type scale developed by Leiner et al. The scale is completed by parents to early diagnose psychosocial problems in children between the ages of 6 and 16 years. Items 5, 6, 17, and 18 are removed when used for elementary school children aged 4 to 5 years. The cut-off point is 24 and over for minors. Ardic and Barlas adapted the scale to Turkish for children aged 6 to 16 years.²¹ They found the Cronbach's alpha of the Turkish version of the scale as 0.89, which was 0.84 in this study.

The pediatric quality of life inventory (PedsQL) is a 23-item scale developed by Varni et al. to measure the health-related QoL in children aged 5-7 and 8-12 years. The PedsQL consists of four subscales assessing physical functionality (eight items), emotional functionality (five items), social functionality (five items), and school functionality (three items for children 2-4 years of age and five items for other age groups).

Scores are linearly transformed to a scale of 0 to 100 (0=100, 1=75, 2=50, 3=25, and 4=0). The “physical functionality” subscale score is linearly transformed and added and then divided by eight to obtain a physical health total score (PHTS), which is the sum of the “emotional functionality,” “social functionality,” and “school functionality” subscale scores before being divided by the total number of items (15) in those subscales. The total score is the sum of all item scores divided by the total number of items 23. Uneri and Memik et al. adapted the PedsQL to Turkish for children 8–12 years of age.¹⁷ Uneri reported that the parent and children’s form of the scale had a Cronbach’s alpha of 0.84. and 0.86, both of which were 0.87 in this study.

Data collection

Data were collected in four science and art centers between 28 February–4 May 2018 and in primary and secondary schools between 7–25 May 2018. Permission was obtained from the Directorate of National Education and the directors of science and art centers. After the permissions were obtained, data were collected from children attending science and art centers between 28 February–4 May 2018. Before data collection, the study was explained to the classroom teachers and informed consent was obtained. The purpose of the study was explained to each participant at a level that they could understand, and then a consent form and an envelope containing the questionnaires were given. Participants who attended school on weekdays were asked to return the forms the next day, and those who attended school on weekends were asked to return them the following weekend. The researcher visited the schools daily to collect the forms and the forms were collected. The data obtained from the gifted children were then analyzed in detail. The data were then entered into the analysis program and analyzed for stratification. After data collection, participants were listed based on grade level, age, and gender to recruit a control group.

After collecting data from gifted children, primary and secondary schools were visited between the 7th and 25th of May. The number of students to be included in the control group was determined according to strata. School principals were informed about the content, purpose and procedure of the study. The grade levels to be included in the sample were determined using simple random sampling. After the students were informed about the procedure, envelopes were distributed to those who agreed to participate. They were asked to take the envelopes to their parents and return them to their teachers the next day or the day after. the schools were visited frequently between the specified dates and the envelopes left with the teachers were collected. after the data were collected, they were analyzed in detail and those who did not meet the inclusion criteria or did not participate in the study were examined in detail.

Data analysis

In the first stage of the study, data were analyzed using the Statistical Package for Social Sciences (SPSS, version 20, IBM, Armonk, NY, USA) at a significance level of 0.05. Percentage and frequency values were

used for analysis. A chi-square test was used to determine the distributions of the participants and their parents' descriptive characteristics. The Kolmogorov-Smirnov test (analytical method) and histogram (visual method) were used for normality testing. Data were not normally distributed, and therefore, nonparametric tests (the Mann-Whitney U test and Spearman's correlation coefficients) were used for analysis. In the second stage of the study, the relationships between parental attitudes, psychosocial problems and quality of life perceived by gifted children and their peers, which is the main topic of the study, were analyzed with structural equation model (SEM). Before the analysis, the assumptions of SEM were checked. For this purpose, normal distribution with skewness and kurtosis values and singularity with correlation coefficient were examined.

Ethical considerations

The study was approved by the Ethics Committee of the university (77082166-302.08.01), and written consent was obtained from the Provincial Directorate of National Education prior to data collection. Parents and children were informed about the purpose, procedure, and confidentiality of the study. Written consent was obtained from parents, and verbal consent was obtained from students.

Results

The study and control groups were homogeneous in age, gender, and grade level. It was mostly the mothers who completed the questionnaires. The groups did not differ by age, gender, income, number of children in the family, the stress level in the past six months, and the presence of a family member with a chronic disease (Table 1).

Table 1. Sociodemographic characteristics

Characteristics	Gifted children group (n=231)		Peer group (n=249)		x ²	p
	M±SD	Min-max	M±SD	Min-max		
Age	8.86±0.65	7-11	9.04±0.62	7-11	5.690	0.224
	n	%	n	%		
Gender						
Girl	120	51.9	129	51.8	0.001	0.975
Boy	111	48.1	120	48.2		
Grade level						
Second	73	31.6	75	30.1		
Third	92	39.8	95	38.2	3.185	0.364
Fourth	47	20.3	46	18.5		

Fifth	19	8.2	33	13.3		
Birth order						
First	137	59.3	133	53.4		
Second	75	32.5	85	34.2	3.804	0.283
≥ Third	19	8.2	31	12.4		
Stress over the last six months						
No	221	95.7	234	94.0	5.18	0.738
Yes*	10	4.3	15	6.0		
Acute health problems in the last six months						
No	217	93.9	234	94	21.997	0.055
Yes**	14	6.1	15	6		

Both groups had a high number of parents with a bachelor's degree. There was a significant difference in educational level between the two groups ($X^2= 40.873$; $p<0.05$). Gifted children's parents (70.7%) had a significantly higher employment rate than peer parents ($X^2 = 15.912$; $p<0.05$) (Table 1).

Table 2. PAS scores*

Scale	Gifted children group (n=231)		Peer group (249)		U	p
	M±SD	Min-max	M±SD	Min-max		
Responsibility acceptance	68.72±0.455	42-75	68.43±0.465	39-75	28541	0.885
Authority inspection	25.46±0.751	15-71	30.88±0.764	15-75	19849	<0.001
Scale total score	94.18±0.738	69-142	99.31±0.798	69-148	21031.5	<0.001

* Mann Whitney U analysis

There was no statistically significant difference in responsibility-acceptance subscale scores between the study and control groups. There was, however, a statistical significance in authority-supervision subscale and mean total scale scores between the two groups (Table 2).

Table 3. PPSC scores*

Scale	Gifted children group (n=231)		Peer group (n=249)		U	p
	M±SD	Min-max	M±SD	Min-max		
Scale total score	16.11±0.475	4-44	16.76±0.480	1-41	27123.000	0.281

* Mann Whitney U Analysis

There was no statistically significant difference in PPSC scores between the study and control groups ($p>0.05$) (Table 3).

Table 4. PedsQL scores*

Scale	Gifted Children Group (n=231)		Peer Group (n=249)		U	p
	M±SD	Min-max	M±SD	Min-max		
Physical functionality	80.76±0.91	43.75-100	78.82±1.1 3	2.50-100	28259.50 0	0.741
Emotional functionality	77.16±1.1	10-100	76.8±1.09	20-100	28398.00 0	0.811
Social functionality	89.03±0.95	15-100	86.04±1.0 9	20-100	26552.00 0	0.133
School functionality	86.67±0.91	10-100	80.38±1.0 1	30-100	21730.00 0	<0.001
Psychosocial functionality	84.48±0.76	41.67-100	81.06±0.6	40-100	24833.50 0	0.010
Scale total score	83.19±0.70	46.74-100	80.28±0.8 3	47.61-100	25706.50 0	0.044

* Mann Whitney U analysis

There was no statistically significant difference in PedsQL “physical functionality,” “emotional functionality,” and “social functionality” subscale scores between the study and control groups. However, there was a statistically significant difference in “school functionality” subscale and total scores between the two ($p<0.05$) (Table 4).

Table 5. Correlation between PAS and PPSC scores*

	PAS		PPSC		r	p
	M±SD	Min-max	M±SD	Min-max		
Gifted children group (n=231)	94.18±0.738	69-142	16.11±0.47 5	4-44	0.092	0.166
Peer group (n=249)	99.31±0.798	69-148	16.76±0.48 0	1-41	0.194	0.002

* Spearman correlation analysis

There was a weak positive correlation between PAS and PPSC scores (Table 5). Children's PAS and PedsQL scores were weakly negatively correlated, but parents PAS and PedsQL scores were not ($r=-.038$; $p>0.05$) (Table 5).

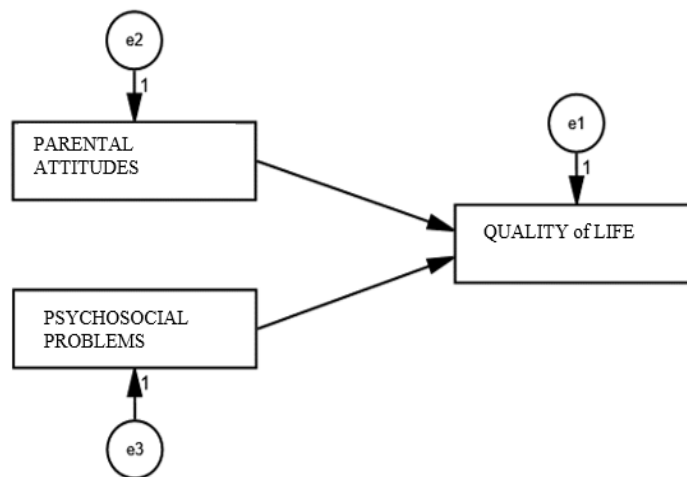
Table 6. Correlation between PPSC and PedsQL scores*

	PPSA		PedsQL		r	p
	M±SD	Min-max	M±SD	Min-max		
Gifted children group (n=231)	16.11±.475	4-44	83.19±.70	46.74-100	-0.668	<0.001
Peer group (n=249)	16.76±.480	1-41	80.28±.83	47.61-100	-0.605	<0.001

* Spearman correlation analysis

Children's PPSC and PedsQL scores were weakly correlated (Table 6).

The diagram of the structural model is given below (Fig. 1).

**Fig. 1.** Diagram of structural equation path analysis

The goodness of fit criteria for the structural model are given below (Table 7). Coefficients for the structural model hypotheses are given below (Table 8).

Table 7. Structural equation path analysis index values

Index	Normal value*	Acceptable value**	Gifted children	Peers
χ^2/sd	<2	<5	3.88	4.36
GFI	>0.95	>0.90	0.98	0.96
AGFI	>0.95	>0.90	0.92	0.91
CFI	>0.95	>0.90	0.97	0.96
RMSEA	<0.05	<0.08	0.06	0.06
RMR	<0.05	<0.08	0.07	0.06

Table 8. Structural model path analysis coefficients

Gifted children	β	Std. β	S.Hata	t	p	R ²
Parental attitude	-0.028	-0.029	0.045	-0.619	0.536	0.498
Psychosocial problems	-1.046	-0.705	0.069	-15.082	***	
Dependent variable: Quality of life						
Theirs peers	β	Std. β	S.Hata	t	p	R ²
Parental attitude	0.091	0.087	0.053	1.735	0.083	0.377
Psychosocial problems	-1.063	-0.608	0.088	-12.136	***	
Dependent variable: Quality of life						

Parental attitude had no effect on quality of life in gifted children ($p>0.05$). Psychosocial problems decreased the quality of life ($\beta=0.705$; $p<0.05$). Parental attitude and psychosocial problems explained 49.8% of the total change in quality of life. Parental attitude had no effect on quality of life in peer children ($p>0.05$). Psychosocial problems decreased the quality of life ($\beta=0.608$; $p<0.05$). Parental attitude and psychosocial problems explained 37.7% of the total change in quality of life.

Discussion

This study investigated the relationship between gifted children's and their peers' perceptions of parental attitudes and their psychosocial problems and QoL. The results show that the parents of gifted children are more democratic and less authoritarian than those of their peers. Rudasill et al. also reported that the parents of gifted children (332 fifth and eleventh graders) were more tolerant and democratic, while those of peers were more permissive and authoritarian.²² A study concluded that parents of gifted children adopt

democratic and protective attitudes and avoid permissive and authoritarian attitudes.²³ Yazdani and Daryei found that the parents of gifted children (sixth and ninth graders) were less authoritarian than those of peers.²⁴ The parents of gifted children seem to be more democratic and tolerant towards their children, probably because they feel happy and proud of their children's academic achievement.^{25,26} Unlike other studies, Olgun-Kaval found that gifted children perceived more authoritarian parental attitude, parental rejection, indifference and neglect compared to the normally developing group.²⁷ Democratic parental attitudes encourage children to develop skills and improve their QoL.

There was no statistically significant difference in PPSC scores between the study and control groups. Yazdani and Daryei reported that gifted children had more self-respect, social competence, and cooperation than their peers but that the two groups did not differ significantly in depression and anxiety levels.²⁴ We also observed that the study and control groups had similar psychosocial and behavioral problems. Kroesbergen et al. found that first- and second-grade gifted children (n=35) had less self-respect and more difficulty adapting to social norms and expectations than their peers.²⁸ Children's psychosocial and behavioral problems may depend on the place and time of residence and cultural norms. Therefore, the lack of a significant difference in PPSC scores between the study and control groups may be because they have similar sociocultural backgrounds.

There was no statistically significant difference in the PedsQL "physical functionality," "emotional functionality," and "social functionality" subscale scores between the study and control groups. However, the study group had significantly higher school and psychosocial functionality scores than the control group. In contrast, Eren et al. reported that gifted children had significantly lower physical and social functionality scores than their peers, suggesting that special skills may negatively affect gifted children' QoL.²⁹ Kaya et al. determined that gifted children had lower quality of school life than their peers.³⁰ The gifted children in our study have higher QoL probably because they have fewer problems in school thanks to the training offered by the science and art centers and the education provided by their schools.

Our results also show that democratic parental attitudes reduce psychosocial and behavioral problems in children. Research shows that authoritarian parental attitudes increase the rate of psychosocial and behavioral problems in children.³¹⁻³³ Democratic and kind parental attitudes help establish healthy communication, support children, and provide them with a safe environment to express themselves. Research also shows that children who share their problems with their parents are likely to have better behavioral development, more social and problem-solving skills, and higher self-respect than those who do not.^{11,34,35} Furthermore, in the study conducted by Topuz and Çankaya with 219 students, it was revealed that external protective factors such as acceptance/affection from parents and peer relationships explained the psychological resilience levels of gifted students more strongly.³⁶ Kim states that the support gifted students receive from their families is a key protective factor for psychological resilience.³⁷ On the other hand, perfectionist and authoritarian parental attitudes lead to a fear of failure and disappointment in

children.^{38,39} In one of the studies showing that the families of gifted children were not always supportive, it was reported that the families of gifted children were insistent on success, critical of mistakes, and that the parents' high expectations caused anxiety in children.⁴⁰ Studies examining parental attitudes in gifted children have revealed that parental attitudes are effective on the social emotional characteristics of gifted children, which is consistent with the results of the present study.^{41,42}

There was a negative correlation between PedsQL and PAS scores in the study group, indicating that more democratic parental attitudes result in higher QoL in their gifted children. There was also a negative correlation between PedsQL and PAS scores in the control group, indicating that more authoritarian parental attitudes result in lower QoL in their children. There is no published research examining the effect of parental attitudes on gifted children's QoL. Therefore, we focused on studies on peer groups to make a comparative analysis. Aytekin, Arslan, and Kucukoglu (2014) reported no effect of parental attitudes on QoL in children 3-6 years of age.⁴³

There was a negative correlation between PedsQL and PPSC scores in both study and control groups. There is no research investigating gifted children's psychosocial and behavioral problems and QoL levels. Therefore, we addressed studies on adolescent and adult peer groups to make a comparative analysis. Ates and Akbas reported that adolescents with fewer problematic, risky, and criminal behaviors had higher QoL, probably because such behaviors are associated with psychosocial and behavioral problems. Therefore, low rates of such behaviors may lead to high QoL.⁴⁴ Our results also point to a negative correlation between problematic behaviors and QoL. We think that developing various skills early and attending science and art centers reduces the likelihood of gifted children experiencing psychosocial problems. According to our results, democratic parental attitudes do not affect the prevalence of psychosocial problems in gifted children, but authoritarian parental attitudes affect the prevalence of psychosocial problems in their peers. Our results also show that psychosocial and behavioral problems affect the QoL in gifted children and their peers.

As a result of the structural equation model analysis, one of the advanced statistics conducted in our research; It has been determined that parental attitudes have no effect on the quality of life of gifted children and their peers, while psychosocial problems have a significant effect on the quality of life. Since there are not enough studies on the impact of psychosocial problems on the quality of life of gifted children, data from studies conducted from different groups and topic were discussed. In a cross-sectional study conducted with 2703 children aged 8-12, psychosocial problems were found to be common, especially in boys, and children's quality of life was found to be low. It has been determined that the high number of psychosocial problems experienced by children causes their quality of life to decrease.⁴⁵ Cyberbullying is associated with internalizing and externalizing problems, as well as emotional and psychosocial problems such as depression, stress and anxiety. Children exposed to bullying may experience various psychosocial problems. In a study examining the quality of life of gifted children who were exposed to cyberbullying, it

was stated that gifted children experience more psychosocial problems such as stress and depression and their quality of life and life satisfaction are lower.⁴⁶ Situations such as long-term persistence of psychosocial problems and failure to develop appropriate programs for children may affect children's quality of life.

Conclusion

Gifted children define their parents' attitudes as more democratic and have higher QoL than their peers. However, gifted children and their peers have similar psychosocial and behavioral problems. Democratic parental attitudes help children develop psychosocial skills and resources to cope with psychosocial problems and improve their QoL. Therefore, pediatric nurses should assess parental attitudes and their children's psychosocial and behavioral problems and QoL levels to improve their well-being. Support programs should be developed for children and their parents based on nurse evaluations. Parental attitudes should be regularly assessed, and parents should be educated to raise their awareness of the effect of their behavior on their children. Factors improving physical, social, emotional, and school functionalities should be determined to improve the QoL of gifted children and their peers. Different research instruments should be used to evaluate parental attitudes and children's psychosocial problems and QoL levels. Both children and parents should be educated about the subject matter.

This study has several limitations. The sample consisted only of second and fifth grade students and therefore the results cannot be generalized. The same questionnaires were used at all grade levels. Different questionnaires could have produced different results. The study may not contain the same results for all children because it was collected in a certain region and in groups with socio-cultural proximity. It is thought that the fact that parents were not directly interviewed in the data collection forms may create deficiencies in understanding the purpose of the study.

Declarations

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Author contributions

Conceptualization, S.Y. and N.A.; Methodology, S.Y. and N.A.; Software, S.Y.; Validation, S.Y. and N.A.; Formal Analysis, S.Y. and N.A.; Investigation, S.Y.; Resources, S.Y.; Data Curation, S.Y.; Writing – Original Draft Preparation, S.Y. and N.A.; Writing – Review & Editing, N.A.; Visualization, S.Y.; Supervision, S.Y.; Project Administration, N.A.; Funding Acquisition, S.Y.

Conflicts of interest

No potential conflicts of interest were declared with respect to the research, authorship, and/or publication of this article.

Data availability

The data are kept by the researchers. New analyses are available when necessary.

Ethics approval

The study was approved by the Ethics Committee of the university (77082166-302.08.01).

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