



Self-assessment of the quality of life of children and adolescents in the child welfare system of Serbia

Samoprocena kvaliteta života dece i adolescenata u sistemu socijalne zaštite Srbije

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Abstract

Background/Aim. Children and adolescents who enter a child welfare system are at higher risk of suffering from mental disorders, physical health, and/or social and educational problems than the general population of the same age is. This study was organized with the aim to evaluate the general characteristics of quality of life (QOL) in children and adolescents living in residential and foster care in Serbia. **Methods.** Two hundred and sixteen children and adolescents, aged 8–18 years, from residential and foster care and 238 children and adolescents from the general population participated in the study. QOL was assessed using the Pediatric Quality of Life Inventory (PedsQL) – Serbian version. Three groups were created: residential care group (RCG), foster care group (FCG), and control group (children and adolescents from biological families – CG). Descriptive data were calculated for all questionnaires' scores, while *t*-test and ANOVA were used to compare them. **Results.** The mean value of the total PedsQL was lower in the RCG, 67.47 ± 17.75 , than in the FCG and the CG, 88.33 ± 11.27 and 80.74 ± 11.23 , respectively. Additionally, the RCG reported lower all PedsQL Scale scores, but the lowest value was for the psychosocial domain. These differences were statistically significant (*F* value ranged from 17.3 to 49.89, $p < 0.000$). However, only the scores of the RCG were statistically different from the FCG and the CG, while the differences between the FCG and the CG were statistically insignificant ($p > 0.05$). **Conclusion.** Children and adolescents living in residential care have significantly poorer QOL than those living in foster care or in biological families. On the other side, QOL in children and adolescents from foster care is similar to the one of those living in biological families.

Key words:
quality of life; child; adolescent; questionnaires; child, abandoned.

Apstrakt

Uvod/Cilj. Deca i adolescenti koji se nalaze u sistemu socijalne zaštite pod većim rizikom su od mentalnih poremećaja, problema sa fizičkim zdravljem i/ili od socijalnih i obrazovnih probleme, nego deca u opštoj populaciji. Ova studija sprovedena je sa ciljem da se procene opšte karakteristike kvaliteta života kod dece i adolescenata koji žive u domovima i hraniteljskim porodicama u Srbiji. **Metode.** U studiji je učestvovalo 216 dece i adolescenata, uzrasta od 8 do 18 godina, iz domova i hraniteljstva, i 238 dece i adolescenata iz opšte populacije. Kvalitet života procenjivan je pomoću Pedijatrijskog upitnika o kvalitetu života (PedsQL) – srpska verzija. Formirane su tri grupe ispitanika: grupa iz doma (RCG), hraniteljstvo (FCG) i kontrolna grupa (deca i adolescenti iz bioloških porodica – KG). Deskriptivni podaci izračunati su za rezultate svih upitnika, dok su *t*-test i ANOVA korišćeni da ih uporede. **Rezultati.** Srednja vrednost ukupnog skora PedsQL bila je niža u grupi RCG, $67,47 \pm 17,75$, nego u grupama FCG i KG, $88,33 \pm 11,27$ i $80,74 \pm 11,23$. Pored toga, RCG imala je niže skorove PedsQL na svim skalama, ali je najniža vrednost bila za psihosocijalni domen. Ove razlike bile su statistički značajne (*F* vrednost bila je od 17,3 do 49,89; $p < 0,000$). Međutim, samo su između RCG i FCG i KG postojale statistički značajne razlike, dok su te razlike između FCG i KG bile statistički beznačajne ($p > 0,05$). **Zaključak.** Deca i adolesceati koji žive u domovima imaju znatno niži kvalitet života od onih koji žive u hraniteljstvu ili u biološkim porodicama. S druge strane, kvalitet života dece i adolescenata iz hraniteljstva sličan je onome koji imaju deca iz bioloških porodica.

Ključne reči:
kvalitet života; deca; adolescenti; upitnici; deca, napuštena.

Introduction

Children and adolescents who enter a child welfare system, whether through foster care, kinship care (placement with relatives), or residential institution care, are a vulnerable population. Over the past decades, it was shown that these children and adolescents are at higher risk of suffering from mental disorders, physical health problems, and/or social and educational problems¹. The data reported that more than a half of children and adolescents who are in the public care have some kind of psychopathology¹⁻³, while the prevalence rates of mental health problems could reach up to 70%^{4,5}. Additionally, these children were more likely to have different pediatric illnesses in a higher degree than those from the general population, especially related to physical growth and development^{6,7}. Finally, they also have significantly poorer educational outcomes and they are frequently marginalized, socially withdrawn or isolated⁸.

Although the data about health and social problems in this population accumulated over the years, well-being and quality of life (QOL), as more complex health parameters, were insufficiently studied⁹⁻¹¹. Only two studies were organized about QOL in this population and they demonstrated that children and adolescents who are in the child welfare system have significantly poorer well-being and QOL as compared to the general population of the same age^{10,11}. Additionally, these studies showed some risk factors for QOL, like younger age and residing in an institution, and that mental health problems were associated with impaired daily functioning in this population.

During 2009, we initiated a project with the aims to evaluate mental health status in children and adolescents residing living in residential and foster care in Serbia. As a part of that project, a QOL research was organized in this population. Here, we reported on the general characteristics of QOL in children and adolescents residing in institutions and foster care as compared to those living in biological families.

Methods

The total number of children, adolescents, and young adults up to 26 years of age in the Serbian child welfare system at the time of the study initiation was 5,831 according to the Serbian Ministry of Labour and Social Policy. The study sample was selected from a pool of children and adolescents aged 8–18 residing in residential or foster care. The only inclusion criterion was literacy. Based on the criteria, it was estimated that about 700 of these individuals resided in designated institutions and about 2,000 in foster care.

Three major regional childcare centers in Serbia participated in the study (Belgrade, Niš, Kruševac). All children and adolescents who accepted to participate and who completed the informed consent were included. The informed consent was also obtained from caregivers of the children and adolescents residing in foster care.

School psychologists contacted 300 children and adolescents living with biological parents (aged 8–18 years, equally boys and girls) from four elementary schools in Ser-

bia (Belgrade, Niš, Surdulica) to participate in the study as a control group. They informed all children and adolescents about the purpose of the study, as well as their parents.

Quality of life was assessed with the Pediatric Quality of Life InventoryTM Version 4.0 (PedsQLTM)¹². This is a self-report questionnaire with 23.5-point-scaled items assessing QOL in the following dimensions: Physical Functioning, Emotional Functioning, Social Functioning, and School Functioning. All the items were reverse-scored and linearly transformed to a 0–100 scale, where higher scores indicated better QOL. The Physical Health score (eight items) was the same as the Physical Functioning Scale and the Psychosocial Health score (15 items) and was the sum of the items divided by the number of items answered in the Emotional, Social and School Functioning scales. The total score was the sum of all the items over the number of items answered on all the scales.

The Serbian PedsQLTM 4.0 Generic Core Scales version was provided by Mapi Institute after the permission had been obtained from its developer, Dr. James W. Varni. The validation study reported the Serbian version was an equivalent to the original with appropriate reliability and validity.

Three study groups were formed: residential care group (RCG), foster care group (FCG) and control group (CG). Descriptive data were calculated for all questionnaires' scores for each group [mean standard deviation (SD) and 95% confidence intervals (CI)]. Independent samples *t*-tests and one-way between-groups analysis of variance (ANOVA) test, with Bonferroni *post-hoc* analysis were used to compare PedsQL scores for various groups. The value of $p = 0.05$ was considered as statistically significant.

The Ethics Committee of the Clinic for Neurology and Psychiatry for Children and Youth Belgrade approved the study. The proper authorities of the participating childcare centres approved the study as well.

Results

The overall response rate was 72%. Twentyfive percent of all the contacted children and adolescents from residential and foster care refused to participate, while the rest returned inappropriately completed questionnaires. The residential care group (RCG) included 111, the foster care group (FCG) 105, and the control group (CG) 238 subjects (Table 1). The total amount of missing data was 0.2%.

The mean values with SD and 95% CI for all the groups are given in Table 2. The mean value of the PedsQL was lower in the RCG – 67.47 ± 17.75 than in FCG and CG, 88.33 ± 11.27 and 80.74 ± 11.23 , respectively. Additionally, RCG reported lower all PedsQL Scale scores. ANOVA corrected for age (whereas there were significant differences in age between the groups) demonstrated that these differences were statistically significant (F value ranged from 17.3 to 49.89, $p < 0.000$). However, only the scores of the RCG were statistically significantly different from the FCG and the CG, while the differences between the FCG and the CG were not significant ($p > 0.05$).

Table 1

General demographic characteristics of the groups

Parameters	Residential Care (RCG) (n = 111)	Foster Care (FCG) (n = 105)	Control Group (CG) (n = 238)
Age (years), mean (SD)*	14.43 (2.57)	13.15 (2.87)	12.76 (2.17)
Age group, n (%)			
children, 8–12 years	25 (22.5)	49 (46.7)	118 (49.6)
adolescents, 13–18 years	86 (77.5)	56 (53.3)	120 (50.4)
Gender, n (%)			
male	61 (55.0)	41 (39.0)	107 (45.0)
female	50 (45.0)	64 (61.0)	131 (55.0)

*RCG vs FCG, $p < 0.000$; RCG vs CG, $p < 0.000$; FCG vs CG, $p = 0.51$

Table 2

Pediatric Quality of Life Inventory (PedsQL) General Scale Scores' mean (M), standard deviation (SD) and 95% confidence interval (CI) in the studied groups

PedsQL	Groups	M	SD	CI 95%		F* p
				lower bound	upper bound	
Emotional functioning	Residential Care (n = 111)	56.26	21.46	52.74	59.77	20.76** (0.000)
	Foster Care (n = 104)	72.45	19.14	68.82	76.08	
	Control (n = 238)	70.65	17.34	68.25	73.05	
Social functioning	Residential Care (n = 111)	70.2	26.03	66.82	73.58	49.89** (0.000)
	Foster Care (n = 104)	88.4	14.81	84.91	91.9	
	Control (n = 238)	88.34	14.61	86.03	90.64	
School functioning	Residential Care (n = 111)	64.28	21.94	61.04	67.51	27.66** (0.000)
	Foster Care (n = 104)	79.55	15.75	76.21	82.89	
	Control (n = 238)	78.49	15.49	76.28	80.7	
Physical health	Residential Care (n = 111)	71.37	21.07	68.47	74.26	17.03** (0.000)
	Foster Care (n = 104)	80.53	14.33	77.54	83.53	
	Control (n = 238)	82.32	12.75	80.34	84.3	
Psychosocial health	Residential Care (n = 111)	63.58	18.81	60.9	66.26	49.05** (0.000)
	Foster Care (n = 104)	80.13	12.76	77.37	82.9	
	Control (n = 238)	79.16	12.5	77.33	80.99	
Total	Residential Care (n = 111)	67.47	17.75	65.02	69.92	38.8** (0.000)
	Foster Care (n = 104)	80.33	11.27	77.80	82.87	
	Control (n = 238)	80.74	11.23	79.06	82.41	

*One-way ANOVA corrected for age; **Bonferroni: Residential Care vs Foster Care – $p < 0.000$; Residential Care vs Control, $p < 0.000$; Foster Care vs Control – $p \geq 0.98$

Table 3 shows the mean $\pm$ SD PedsQL scores according to gender. Females tended to rate the PedsQL scores lower in the studied groups than males, but there was a statistically significant difference in the FCG in the Emotional and School Functioning scale and the Psychosocial Health. However, males, as well as females, in the RCG had significantly lowered all PedsQL scores than those in the FCG or the CG ($p < 0.000$). Between the FCG and the CG, there were no statistically significant difference ($p > 0.05$).

The mean (SD) of the PedsQL scores according to age, children (8–12 years) and adolescents (13–18 years), were given in Table 4. Only children in the RCG reported lower PedsQL scores than adolescents, but this was not statistically significant ($p > 0.05$). However, children, as well as adolescents, in the RCG had significantly lower all PedsQL scores than those in the FCG or the CG ($p < 0.000$), but between the FCG and the CG there were no statistically significant differences ($p > 0.05$).

Discussion

This is the first study to our knowledge on QOL in children and adolescents from the child welfare system in Serbia and the results indicate that children and adolescents residing

in institutions report significantly poorer QOL than those living in foster care or with biological parents.

Analyzing general characteristics of quality of life in these children and adolescents the following was observed.

In general, children and adolescents living in residential care institutions valued their QOL significantly lower across all PedsQL scales than those living in foster care or in biological families. Children and adolescents from residential care especially valued lower emotional functioning and much lower psychosocial than physical health. This difference was negligible in the other two groups. Nevertheless, children and adolescents living in foster care reported similar QOL scores to those living in biological families. These findings partially agree with the previous findings. One study reported that children and adolescents from residential care tended to value their QOL significantly lower, especially in psychological domains, than those from the general population, what agrees with our results¹¹. However, the children and adolescents from foster care in this study had similar QOL as the general population, what disagrees with the previously reported lower QOL in this group as compared to the general population¹⁰.

Table 3

**Pediatric Quality of Life Inventory (PedsQL) General Scale Scores' mean (M) and standard deviation (SD)
in the groups according to gender**

PedsQL	Group	Gender	M	SD	T* (p)	F _{Male} ^{**} (p)	F _{Female} ^{**} (p)
Emotional functioning	Residential care	Male (n = 61)	58.31	18.44	1.12 (0.27)	19.64 (0.000)	11.72 (0.000)
		Female (n = 50)	53.75	24.62			
	Foster care	Male (n = 40)	78.81	17.11	2.7 (0.008)		
		Female (n = 64)	68.47	19.38			
	Control	Male (n = 107)	72.89	17.29	1.81 (0.07)		
		Female (n = 131)	68.81	17.22			
Social functioning	Residential care	Male (n = 61)	70.98	24.32	0.35 (0.73)	16.64 (0.000)	24.96 (0.000)
		Female (n = 50)	69.25	28.19			
	Foster care	Male (n = 40)	87.37	18.32	-0.56 (0.58)		
		Female (n = 64)	89.05	12.23			
	Control	Male (n = 107)	87.33	14.6	-0.96 (0.34)		
		Female (n = 131)	89.16	14.62			
School functioning	Residential care	Male (n = 61)	64.91	20.23	0.34 (0.74)	18.83 (0.000)	14.14 (0.000)
		Female (n = 50)	63.5	24.05			
	Foster care	Male (n = 40)	84	14.36	2.38 (0.02)		
		Female (n = 64)	76.77	16.05			
	Control	Male (n = 107)	77.73	15.15	-0.68 (0.49)		
		Female (n = 131)	79.1	15.8			
Physical health	Residential care	Male (n = 61)	71.77	21.78	0.22 (0.82)	14.42 (0.000)	6.91 (0.001)
		Female (n = 50)	70.87	20.37			
	Foster care	Male (n = 40)	82.27	12.89	1.11 (0.27)		
		Female (n = 64)	79.45	15.16			
	Control	Male (n = 107)	84.97	11.72	2.95 (0.004)		
		Female (n = 131)	80.15	13.18			
Psychosocial health	Residential care	Male (n = 61)	64.74	17.3	0.72 (0.47)	27.47 (0.000)	26.25 (0.000)
		Female (n = 50)	62.16	20.6			
	Foster care	Male (n = 40)	83.39	13.16	2.06 (0.04)		
		Female (n = 64)	78.1	12.17			
	Control	Male (n = 107)	79.32	12.56	0.97 (0.86)		
		Female (n = 131)	79.03	12.5			
Total	Residential care	Male (n = 61)	68.26	17.31	0.51 (0.61)	25.41 (0.000)	18.91 (0.000)
		Female (n = 50)	66.52	18.4			
	Foster care	Male (n = 40)	82.83	11.09	1.87 (0.06)		
		Female (n = 64)	78.77	11.19			
	Control	Male (n = 107)	82.15	10.69	0.25 (0.08)		
		Female (n = 131)	79.59	11.57			

* t-test; **One-way ANOVA with Bonferroni post-hoc analysis:

male – residential care vs foster care, $p \leq 0.002$; residential care vs control, $p < 0.000$; foster care vs control, $p \geq 0.11$

female – residential care vs foster care, $p \leq 0.000$; residential care vs control, $p < 0.000$; foster care vs control, $p = 1.0$

Girls and boys, separately, from residential care reported significantly lower QOL than those living in foster care or with biological parents. Although girls, generally, valued their QOL lower than boys across all the groups, and there was statistically significant difference in the Emotional and School Functioning scale and the Psychosocial Health only among those from foster care.

The QOL analysis according to age demonstrated that children from residential care valued QOL lower than adolescents, although this difference was not statistically significant. Between the two from foster care, there were similar scores. On the contrary, adolescents from biological families had lower QOL than children, what agreed with the findings from the literature^{13, 14}. Nevertheless, children, as well as adolescents, living in residential care institutions had significantly lower all PedsQL scores than those in

foster care or biological families. As according to gender, both children and adolescents from foster care had similar QOL scores as those from biological families. The above findings could indicate that children from residential care tend to be more vulnerable group or that adolescents are much more resilient.

The strengths of the present study are the following. First, its good response rate of 72%. Second, the study included both children and adolescents from residential and foster care, which is about 8.5% of this population. Another strength of the study was the availability of a comparison of the group assessed using the same measure, which made it possible to compare the QOL of children in the child welfare system with that of a comparable group of children in the community. Finally, QOL was assessed with a psychometrically sound and referent measure – PedsQL.

Table 4

Pediatric quality of life inventory (PedsQL) General Scale Scores' mean (M) and standard deviation (SD) in the groups according to age

PedsQL	Groups	Age	M	SD	T (p)	F _{Children} [*]	F _{Adolescents} ^{**}
Emotional functioning	Residential care	Children (n = 25)	53.20	13.6	-0.81 (0.42)	20.25 (0.000)	14.53 (0.000)
		Adolescents (n = 86)	57.15	23.24			
	Foster care	Children (n = 49)	73.64	16.84	0.63 (0.53)		
		Adolescents (n = 55)	71.38	21.07			
	Control	Children (n = 118)	75.74	16.39	4.68 (0.000)		
		Adolescents (n = 120)	65.64	16.84			
Social functioning	Residential care	Children (n = 25)	55.8	23	-3.28 (0.01)	46.59(0.000)	21.41 (0.000)
		Adolescents (n = 86)	74.38	25.47			
	Foster care	Children (n = 49)	86.22	15.92	-1.43 (0.15)		
		Adolescents (n = 55)	90.35	13.59			
	Control	Children (n = 118)	89.44	14.03	1.16 (0.25)		
		Adolescents (n = 120)	87.25	15.14			
School functioning	Residential care	Children (n = 25)	55	19.47	-2.47 (0.16)	26.78 (0.000)	14.74 (0.000)
		Adolescents (n = 86)	66.97	22			
	Foster care	Children (n = 49)	79.15	17.12	-0.3 (0.76)		
		Adolescents (n = 55)	79.91	14.57			
	Control	Children (n = 118)	81.10	15.27	2.61 (0.01)		
		Adolescents (n = 120)	75.92	15.33			
Physical health	Residential care	Children (n = 25)	64.26	16.13	-1.94 (0.05)	24.65 (0.000)	7.69 (0.001)
		Adolescents (n = 86)	73.43	21.95			
	Foster care	Children (n = 49)	82.59	10.79	1.28 (0.2)		
		Adolescents (n = 55)	78.7	16.76			
	Control	Children (n = 118)	84.11	13.02	2.16 (0.03)		
		Adolescents (n = 120)	80.56	12.28			
Psychosocial health	Residential care	Children (n = 25)	54.66	13.92	-2.77 (0.07)	51.77 (0.000)	25.89 (0.000)
		Adolescents (n = 86)	66.17	19.32			
	Foster care	Children (n = 49)	79.67	11.8	-0.33 (0.74)		
		Adolescents (n = 55)	80.55	13.66			
	Control	Children (n = 118)	82.09	12.18	3.69 (0.000)		
		Adolescents (n = 120)	76.27	12.18			
Total	Residential care	Children (n = 25)	59.46	11.03	-2.63 (0.01)	49.86 (0.000)	18.57 (0.000)
		Adolescents (n = 86)	69.8	18.68			
	Foster care	Children (n = 49)	81.13	9.96	0.62 (0.53)		
		Adolescents (n = 55)	79.62	12.37			
	Control	Children (n = 118)	83.1	11.12	3.28 (0.000)		
		Adolescents (n = 120)	78.41	10.98			

* *t*-test; **One-way ANOVA with Bonferroni *post-hoc* analysis:

male – residential care vs foster care, $p \leq 0.000$; residential care vs control, $p < 0.000$; foster care vs control, $p \geq 0.1$

female – residential care vs foster care, $p \leq 0.009$; residential care vs control, $p < 0.009$; foster care vs. control, $p \geq 0.25$

The main limitation of the present study was the availability of only two studies from the literature that evaluated QOL in this population, so it was not possible to compare the results properly. Then, we do not have any results from systemic studies on the characteristics of our child welfare system and its implications in the lives of these children. Therefore, the findings of the present study were not possible to comment in respect of it. Additionally, there was a selection bias, whereas only children and adolescents from four child welfare system centers in Serbia participated. Finally, using only self-assessment questionnaire and not considering QOL assessments from proxies could be also limiting.

Conclusion

In general, as well as according to gender and age, children and adolescents living in residential care institutions reported significantly lower QOL than those living in foster

care or in biological families, especially in the psychosocial domains. However, the quality of life of children and adolescents from foster care is similar to the ones of those living with biological parents. With the results of the incoming study, where different risk and protective factors for QOL and mental health would be reported, it will be possible to suggest interventions to improve QOL of these children and adolescents, as well as to evaluate different models of QOL.

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