Quality of life among children from São Paulo, Brazil: the impact of demographic, family and socioeconomic variables

Qualidade de vida em crianças da cidade de São Paulo, Brasil: impacto das variáveis demográficas, familiares e sócio-econômicas

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Abstract

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The Pediatric Quality of Life Inventory (PedsQL) 4.0 is a questionnaire that evaluates the health related quality of life of children and adolescents, considering different aspects of their development, including the physical, emotional, social and educational. We verified the impact of demographic, social, and economic factors, as well as the family situation, on the health related quality of life of a group of school children of the city of São Paulo, Brazil. The PedsQL 4.0 was applied to 240 children and adolescents aged 2 to 18 and their respective parents. More than two thirds of the families were from lower social strata (C, D, and E). A statistically significant difference was observed in scores when evaluating the health related quality of life across socioeconomic strata and we observed statistically significant differences in the emotional, social, psychosocial and total scores. The PedsQL 4.0 scores obtained through interviews were satisfactory when compared with other urban populations of children and adolescents, probably due to the homogeneity of the population studied.

Quality of Life; Child Health; Questionnaires

Background

The evaluation of health related quality of life in pediatrics faces a series of challenges, due to the changes observed in the different phases of its development. Moreover, many children (and their parents) have difficulty in communicating accurately some of the social and emotional aspects of their lives. A multi-criteria measurement of quality of life is therefore necessary in order to evaluate their perceptions.

The generic questionnaire *Pediatric Quality of Life Inventory* version 4.0 (PedsQL 4.0), developed by Varni et al. [1] evaluates different aspects of children's development. It contains 23 items which cover physical, emotional, social, and educational aspects of the child's development. The PedsQL 4.0 was translated and validated for the Portuguese language/Brazilian culture, and its assessment validity was verified [2]. The questionnaire comprises two parallel formats: child self-reports and parental proxy-reports. The child self-report includes ages 5-7, 8-12, and 13-18. The parent proxy-report includes ages 2-4, 5-7, 8-12, and 13-18.

The objective of the present study was to determine if demographic, social, and economic factors, as well as family situation, influence the quality of life of a group of urban school children from the periphery of São Paulo city, Brazil.

Methods

The study group included 240 healthy children and adolescents – 60 in each of the following age ranges: 2-4, 5-7, 8-12 and 13-18 – and their respective parents, all residents in urban areas of the periphery of Greater São Paulo. Enrolment locations were public schools for children aged 5 to 18 and government primary health units for children aged 2 to 4. We considered our target population following the pattern of an urban area with a well recognized low income population in a large metropolitan city. The main researcher had the cooperation of school and health unit staff, who were required to apply the questionnaires through interviewer-administration.

The inclusion criteria included: ability to answer the health related quality of life questionnaires and absence of chronic or acute illness in the last 30 days prior the interview. Children and parents had been interviewed separately after receiving some instructions. Written parental informed consent and child assent were obtained. This study was approved by the São Paulo Hospital Research Ethics Committee (CEP 0192/04) on March 12, 2004.

Data collection

Parents answered a questionnaire on basic demographic data, which included: child's age, sex and level of education; age of primary guardian and family situation (complete or separate). The socioeconomic evaluation followed the criteria set by the Brazilian Association of Research Companies (ABEP; http://www.abep.org.br/codigosguias/ABEP_CCEB.pdf, accessed on 21/Jan/2004) and the families were divided into classes A, B, C, D and E. In the final analysis we opted to group classes A and B (A + B) and classes D and E (D + E).

Quality of life was assessed through the generic questionnaire PedsQL 4.0 [1,2]. Although the PedsQL was designed for self-administration for children aged 5-18 and their parents, given the lower socioeconomic and educational levels of the participants in this study, the questionnaire was administered by an interviewer for children and parents.

Results

Data on the children's gender, level of education of the main guardian, family situation and socioeconomic classification are presented in Table 1. The average age of the guardian was 35.8 ± 9.2 years.

Table 2 shows scores received through the questionnaires from all 240 children and adolescents interviewed. The health related quality of life from the guardian's perspective is higher when compared to the perspective of the children and adolescents in all aspects (physical, emotional, social and school). Scores were higher for physical aspects, followed by social, educational and then emotional.

The correlation analysis of demographic and social variables were obtained from the children's viewpoint for ages between 5 and 18 (n = 180). With regard to gender, statistically significant differences were found between boys and girls for emotional factors (boys = 75.9 > girls = 70.4, p = 0.026) and school scores (girls = 91.1 > boys = 87.4, p = 0.039). It is important to note that although there were statistically significant differences, all scores were indicative of good health related quality of life.

Concerning the educational level of guardians, 175 (72.9%) had completed elementary, middle and/or high school. Due to the small number of guardians who were either illiterate or had incomplete elementary school (3%) and complete university education (3%), these two categories were grouped. Averages of health related quality of life scores for the guardian's educational level in all aspects were not found to be statistically significant (Table 3).

With regard to the family situation, 173 (72.1%) were complete (mother and father living in the same residence as the child) and 67 (27.9%) were separate. We didn't observe a statistically significant difference in total health related quality of life scores between children of complete or separate families from the children's perspective (complete = 88.7 and separate = 89.5, p = 0.512).

More than two thirds of families were from social classes C, D and E. When evaluating the health related quality of life for socioeconomic classes A + B, C and D + E, we observed statistically significant differences in the emotional, social, psychosocial and total aspects (p < 0.005), with higher scores for children from classes A + B, followed by class C and then D + E, in all the situations (Table 4).

Discussion

We chose to correlate the demographic and socioeconomic variables with health related quality of life from the viewpoint of children aged 5 to 18 (n = 180). Some studies [3,4,5,6] have shown that parents have a greater facility in accurately assessing the physical and educational aspects of their children's development, but not the emo-

Table 1

Demographic data by child's gender, level of education of principal guardian, family situation and socioeconomic classification (n = 240).

Variables	n	%	% valid
Gender (Female/Male)	124/116	51.7/48.3	100.0
Guardian			
Mother	186	77.5	77.5
Grandmother	28	11.7	11.7
Father	13	5.4	5.4
Legal guardian	13	5.4	5.4
Guardian's education level			
Illiterate/Incomplete Elementary School	7	2.9	2.9
Complete Elementary School/Incomplete Middle School	50	20.8	20.8
Complete Middle School/Incomplete High School	78	32.5	32.5
Complete High School/Incomplete University	97	40.4	40.4
Complete University	8	3.3	3.5
Family situation			
Complete	173	72.1	72.1
Separated	67	27.9	27.9
Socioeconomic level *			
A + B	74	30.8	31.1
C	119	49.6	50.0
D + E	45	18.8	18.9
No information	2	0.8	-

* Economic criteria of the Brazilian Association of Research Companies: A1 (more than US$ 37,032), A2 (US$ 19,632 to 37,020), B1 (US$ 11,808 to 19,620), B2 (US$ 7,104 to 11,796), C (US$ 3,312 to 7,092), D (US$ 1,752 to 3,330), and E (US$ 1,740 or less). Values in US$ income per year already converted from Brazilian currency (1 US$ = R$ 1.60, as at July 4, 2008).

Table 2

Mean scores (SD) for the PedsQL 4.0 generic core scales for child self-report and parent proxy-report.

Aspect	Items	n	Mean	SD
Child-report *				
Total score	23	180	88.90	7.35
Physical health	8	180	95.94	5.83
Emotional functioning	5	180	73.03	16.52
Social functioning	5	180	93.14	10.54
School functioning	5	173	89.31	11.80
Psychosocial health	15	180	85.03	9.66
Parent-report				
Total score	23	240	92.32	6.01
Physical health	8	240	97.86	4.31
Emotional functioning	5	240	80.52	12.59
Social functioning	5	240	96.38	8.89
School functioning	5	207	90.93	11.85
Psychosocial health	15	240	89.18	8.19

* PedsQL of children aged 5 to 18.

Table 3

Mean scores (SD) for the PedsQL 4.0 generic core scales for child self-report from the children's and adolescents' point of view, according to guardian's level of education.

Characteristics	Mean	SD	Percent			Anova		N
			25	50	75	$F_{2,177}$	p	
Physical								
Incomplete Middle School	96.2	4.9	93.8	100.0	100.0	0.090	0.9143	38
Complete Middle School/Incomplete High School	95.7	6.0	93.8	100.0	100.0			65
Complete High School	96.0	6.2	93.8	100.0	100.0			77
Emotional								
Incomplete Middle School	73.2	18.4	65.0	70.0	82.5	0.128	0.8802	38
Complete Middle School/Incomplete High School	72.2	17.2	60.0	75.0	82.5			65
Complete High School	73.6	15.1	65.0	75.0	85.0			77
Social								
Incomplete Middle School	90.5	12.8	90.0	92.5	100.0	2.216	0.1121	38
Complete Middle School/Incomplete High School	92.7	11.2	90.0	100.0	100.0			65
Complete High School	94.8	8.4	90.0	100.0	100.0			77
School								
Incomplete Middle School	90.3	12.7	85.0	95.0	100.0	0.282	0.7547	35
Complete Middle School/Incomplete High School	88.5	12.4	80.0	90.0	100.0			63
Complete High School	89.5	11.0	85.0	90.0	100.0			75
Psychosocial								
Incomplete Middle School	84.4	12.0	80.0	85.8	90.4	0.579	0.5616	38
Complete Middle School/Incomplete High School	84.3	10.6	78.3	86.7	91.7			65
Complete High School	85.9	7.3	80.8	86.7	93.3			77
Total								
Incomplete Middle School	88.7	8.7	85.6	89.7	93.5	0.414	0.6614	38
Complete Middle School/Incomplete High School	88.4	8.2	83.5	89.1	94.6			65
Complete High School	89.5	5.7	85.9	89.1	94.6			77

tional and social ones. The current trend is to value the children's and adolescents' opinion above that of the guardian's.

In our analysis, about 55% of guardians reported either an elementary and middle school or high school level of education; 3% reported complete superior (university) level. The data shows that the guardian's education level is generally low, and this reflects the local reality, agreeing with the data presented in the last Brazilian census (http://www.ibge.gov.br, accessed on 21/Jun/2004), which also points to education problems within the area. At that time, of the 8,727,313 inhabitants older than 10 years of age, 67.9% had remained in school for less than 10 years. However, we did not observe a correlation between the educational level of the guardians and the health related quality of life of the children and adolescents.

We could expect a reduction of health related quality of life among the children of parents with less education, however, in a previous Brazilian study [2] as well as Mansour et al. [5] and Felder-Puig et al. [3], this hypothesis revealed false: parents from lower social classes search for better quality formal education. Moreover, the daily struggle of parents for better health related quality of life for their children, in all aspects, is a universal truth.

When analyzing the scores of health related quality of life there was a reduction in the emotional aspect when compared to the other aspects on the child's self-report and parent proxy-report from both the point of view of the children and their guardians. This reflects the ability of parents to observe better their children in relation to physical aspects compared to the emotional and social.

We observed no correlation between the parents' marital status and health related quality of life, for neither physical or psychosocial aspects. This finding initially surprised us since we made an initial assumption that the parents' separation

Table 4

Mean scores (SD) for the PedsQL 4.0 generic core scales for child self-report from the children's and adolescents' point of view relative to the guardian's socioeconomic status (0-100 variation).

Health related quality of life	Mean	SD	n	F	p
Physical health	95.9	5.9	178	0.80	0.449
A + B	96.1	5.2	52		
C	96.2	6.0	90		
D + E	94.8	6.3	36		
Emotional functioning	73.0	16.6	178	5.20	0.006
A + B	78.8	14.0	52		(1)
C	71.3	17.1	90		(2)
D + E	68.6	16.8	36		(2)
Social functioning	93.1	10.6	178	5.38	0.005
A + B	96.4	7.3	52		(1)
C	92.7	10.8	90		
D + E	89.2	12.6	36		(2)
School functioning	89.4	11.8	171	0.87	0.419
A + B	91.2	10.4	52		
C	88.6	12.0	86		
D + E	88.5	13.0	33		
Psychosocial health	85.0	9.7	178	6.81	0.001
A + B	88.8	7.3	52		(1)
C	84.1	9.4	90		(2)
D + E	81.8	11.6	36		(2)
Total score	88.9	7.4	178	5.23	0.006
A + B	91.3	5.7	52		(1)
C	88.4	7.3	90		(2)
D + E	86.5	8.6	36		(2)

would have a very strong impact in the emotional state of the children and adolescents, independent of age. Some studies carried out in other countries have shown a clear reduction of health related quality of life scores in families with lower income, higher rates of unemployment and minimal education of the guardians [4,5,6].

In our study more than two thirds of families came from disadvantaged social classes and the children presented lower health related quality of life scores for emotional and social aspects, with a consequent lower total score. On the other hand, socioeconomic differences did not have an impact on physical and educational aspects. In general the scores obtained in our study had indicated a good health related quality of life in all aspects including the total value. It is significant to point out that although there were differences in socioeconomic classes, the great majority of individuals in the study lived in the same region and frequented the same public schools, meaning that the sample was somewhat homogenous.

A national level study with larger, representative samples is needed to confirm this hypothesis.

Resumo

O Pediatric Quality of Life Inventory (PedsQL 4.0) é um questionário que avalia a qualidade de vida relacionada à saúde em crianças e adolescentes nos aspectos físico, emocional, escolar e social. Estudamos o impacto dos fatores demográficos, sociais, econômicos e familiares, na qualidade de vida de um grupo de escolares da cidade de São Paulo, Brasil. Participaram do estudo 240 crianças e adolescentes de 2 a 18 anos. Mais de 2/3 das famílias eram provenientes de classes sociais C, D e E. Observamos que houve diferença estatisticamente significante nos aspectos emocional, social e no escore psicossocial e total, com escores mais elevados nas crianças das classes A + B, seguidas pela classe C e pela D + E, em todas as situações. Os escores obtidos usando-se a aplicação verbal do PedsQL 4.0 foram satisfatórios quando comparados a outras populações urbanas de crianças, e não refletiu significativamente na qualidade de vida relacionada à saúde da população estudada, provavelmente devido às características homogêneas encontradas em uma área urbana restrita da cidade de São Paulo.

Qualidade de Vida; Saúde da Criança; Questionários

Contributors

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