Childhood Chronic Diseases and Health Related to Quality of Life in Holy Karbala City

Jaber Qasim Jaber[1], Amer Abdullah Sachit[2], Abbas Jamal Adfulhussein[3], Dhafer Ameen J. Al-Mossawy[4]

[1]MSC Pediatric Nursing Science, Department of Nursing, Al-Zahrawi University College, Karbala, Iraq.
E-mail: jaberqasim@g.alzahu.edu.iq

[2]MSC Pediatric Nursing Science, Pediatric of Nursing Branch, Faculty of Nursing, University of Thi Qar, Iraq.
E-mail: ameralaskary@utq.edu.iq

[3]MSC Pediatric Nursing Science, Department of Nursing, Al-Zahrawi University College, Karbala, Iraq.
E-mail: Abasgmal1987@gmail.com

[4]Instructor B.sc, M.sc, Mental Health Nursing. Psychiatric Mental Health Nursing Branch, Faculty of Nursing, University of Kufa, Najaf, Iraq.
E-mail: dhafera.almossawy@uokufa.edu.iq

Abstract

The goal of this study was to evaluate how prevalent chronic diseases, both separately and together, affected school-aged children in the Karbala in terms of their health-related quality of life (HRQOL). From the Karbala Health Interview Survey, 1301 child between the ages of 4 and 11 were included. Parents responded to surveys about the characteristics of their children and themselves. Children's HRQOL was assessed using the Child Health Questionnaire Parent Form 28. (CHQ-PF28). Children with a main chronic condition (excluding or including children with many chronic conditions) and children without a chronic condition were compared using independent-t tests on the mean scores of the CHQ-PF28 summary scales and profile scales. Cohen's effect sizes (d) were calculated to assess the difference's clinical significance. 50.0% of the children were boys, with a mean age of 7.55 (SD 2.30) years. The mean scores of the PHS and the psychosocial summary scale (PSCS) were 58.53 (SD 4.28) and 53.86, respectively, in children without any chronic conditions (SD 5.87). In general, PHS scores were lower (p0.05) in child with just one chronic disease than in child without chronic conditions. The mean scores of the CHQ-PF28 immediate and profile scales were commonly lower when children with multiple conditions were included than when they were omitted. In the present study, a characteristic population-based sample of school-aged children from the Karbalaa is used to provide essential information about the effects of widespread chronic diseases on HRQOL. The data might be utilized to create a investigation context for health promotion and a more comprehensive approach to patient treatment.

Keywords: Childhood; chronic diseases; quality of life; health

1. Introduction

The prevalence of asthma and issues , is particularly rising [3-5]. Health-related quality of life (HRQOL) may be compromised in children with specific chronic diseases, according to clinical studies [6–15]. A multifaceted notion called HRQOL, it focuses on how people perceive their own social, psychological, and physical functioning [16]. The small sample size in the studies mentioned above, however, frequently limits the generalizability of results. The correlations between pediatric chronic illnesses have lately been examined in characteristic [17–23] . in order to fulfill this need. Instead of considering population prevalence, the chronic disease investigated in the majority of the aforementioned research were chosen expert judgments [19, 21, 22].

It is unclear how children's common chronic illnesses and HRQOL are related. Comorbidity, which is widespread among children, is a pertinent concern. In population-based studies, only three studies [19–21] assessed the effect of comorbidity on children's. The characteristics of children's across common childhood chronic illnesses in a characteristic population sample are poorly understood.

Data from the (DHIS) which was conducted from 2010 to 2013, were used in the current analysis. The top five chronic childhood illnesses were determined to be migraine/severe headache, eczema, dyslexia, dyslexia-related ADHD, and asthma. The current investigation set out to compare children without any chronic diseases to just one of the five common illness in order to determine any differences in HRQOL. Children with single common diseases, including morbidity, had different HRQOL, which was also compared. [9]

doi.org/10.31838/hiv22.02.713 Received: 11.07.21, Revised: 12.08.21, Accepted: 09.09.21

2. Methodology

During the months of January 2020, a cross-sectional study was done on A four-year sample of survey responses from child between the ages of 4 and 11 was used for this inquiry. The interview only included one parent. Parents of 6499 child between the ages of 4 and 11 were questioned between January 2020 and December 2022. For child aged 4 to 11, the annual response rate is roughly 73%.

Parents were given printed study materials by statistics, and participation was optional. Official permission was not necessary because secondary anonymized data gathering in the context of performing statutory tasks. The collection and processing of the data properly adhered to the national norm. Direct IDs were never present in the datasets.

Measures

Persistent diseases Parents were also asked if their child had ever had cancer, in addition to being asked if they had seen any of the following in the previous 12 months.conditions related such as disability, existence , diabetes, migraine/severe headache, asthma, psoriasis, eczema, arthritis/rheumatism, severe/persistent conditions of the bowels, back, neck/shoulder, arm, or hand A free-text inquiry concerning any unreported behavioral difficulties was also included. and other long-term conditions. "No" (i.e., does not have the condition), "yes," and "other" were the three available responses (i.e. has the condition).

If the father replied "yes," the the following query should be addressed: "Has your child seen a family physician or medical specialist in the recent 12 months?" ADHD is the only chronic disease for which this is not required.

The data was weighted to account for the likelihood that a certain individual would be chosen in order to find the five most prevalent in the Dutch child population [24]. This enables generalization at the national level by adjusting replies to the target population's actual distribution of people. According to this health study, the most common illnesses among Dutch children between 2020 and 2022 were attention deficit/hyperactivity disorder (ADHD) (3.1%), migraine/severe headache (2.7%), dyslexia (5.1%), asthma (6.4%), and eczema (5.8%). [25] [26] The prevalence of intestinal anomalies was 1.7%, followed by mental disability (1.2%), congenital heart disease (1.0%), and so forth. [27].

Only the top five chronic diseases were the subject of the current investigation. health's impact on life quality The CHQ-PF28 is a 28-item survey that parents fill out to gauge their children's. The CHQ-PF 28 was selected due to its careful translation into 78 languages and usability testing for ease of administration in sizable population studies [28–30]. The CHQ-PF28 assesses the HRQOL of children and their families using 13 measures. The child's HRQOL is evaluated using the following scales Physical Functioning (PF), Role/Social-Physical (RP), General Health Perception (GP), Bodily Pain (BP), and Role/Social Emotional/Behavioral (REB) (PE). The Physical Summary Component Scale (PHS) and the Psychosocial Summary Component Scale are scored using these 10 scales (PSCS). Additionally, Family Cohesion (FC), Health Change (CH), and Family Activities (FA) scales are available. Data on the "Change in Health Scale" were not reported in the current study. Items are graded using four, five, or six Likert scales, and the results are then standardised on a range from 0 to 100. Better HRQOL is indicated by higher scores. Based on component of child 5 to 18 years, PhS and PsS were developed [31]. The US reference population sample's mean score is 50, and the S.D is 10 points above or below the mean. Studies conducted in the other countries have successfully used the weighted US values to construct two component summary scales [19, 20, 23].

As part of the larger DHIS interview in our study, the parent-completed Dutch version of the CHQ-PF28 was given online, over the phone, or in person. [20]. During the interview, information was gathered by questionnaire regarding the children's age, sex, ethnicity, BMI, single-father household, number of severe health difficulties, and instruction equal . In the current study, acute health problems are those that have occurred during the previous 14 days and include headaches, fatigue, backaches, muscle pains, and joint pains. According to Dutch standards classifications, parental education level (low, medium, high) were determined [16][22].

Pre-primary, primary, and lower secondary education are considered to be at the low education level. Upper secondary education is considered to be at the medium education level. Bachelor's, Master's, and doctoral degrees are considered to be at the high education level. The parent with the highest level of education is chosen if the parents have diverse educational backgrounds. Children who were classified as (second generation) immigrants had at least one parent who was born outside of the karbala .

3. Analyses of statistics

During enrollment, Parents of 6499 children were asked a series of questions. Children having considered to be "outliers." were removed (n = 252). In addition, 122 child were disqualified for failing to complete there are multiple items on the CHQ-PF28. Kids who reported having a condition other than asthma, ADHD, eczema , dyslexia, or a severe headache (n = 430) or who reported having more than two chronic disorders (n = 394) were also eliminated. Thus, 5301 child made up the final sample that was employed for data analysis.

The mean, standard deviation, and summary scores of the CHQ-PF28 scale for kids without known chronic diseases (n = 1301) and for kids who have specified chronic ailments were calculated. (135 cases of asthma, 97 cases of eczema, 207 cases of

dyslexia, 51 cases of ADHD, and 77 cases of severe headaches).

Independent sample t-tests were also conducted to see whether there were any differences in the mean CHQ-PF28 scale and summary scores between children with and without a chronic condition when children with diverse conditions were included. To assess the clinical relevance of the difference, Cohen's effect size was used.

We also compared the mean scores of the scales and summaries on the CHQ-PF28 across children who had seen their family doctor or a specialist within the preceding 12 months and those who had not. Statistical significance was defined as a p-value 0.05. The analysis was done with SPSS 20.0.

4. Results

The general characteristics of the population are shown in Table 1 for analysis. There were 5301 child, ages 4 to 11, 2651 girls and 2650 males. 19.4% of the child weren't Dutch, 11.1% came from families with just one parent, and 32.2% of the child serious health issues. In comparison to children without problems had more severe health concerns. Single-parent families were more prevalent among kids with asthma and eczema. The likelihood of headaches reporting having a low or medium level of education was higher.

Children with a particular ailment had lower summaries than children without any chronic conditions . In terms of the summary scales, it was found that On the physical summary scale, children with only asthma performed worse on average than kids without any other chronic diseases. and that children with only ADHD had a Compared to kids without any other chronic diseases, all 12 scale scores for the subgroup of child with than they were for the subgroup of child without any chronic conditions, especially when it came to body pain (75.84 vs. 88.85, p0.05, d = 0.62). The overall health scale had the lowest average score for asthmatic kids (77.30 vs. 90.47, p0.05, d = 0.77), and the behavior scale had the smallest mean score for ADHD-affected kids (53.90).

Table 1. general characteristics of the study's participants

Variables	Total (N = 5301)	No chronic condition(n = 4539)	Asthma (n = 235)	Eczema(n = 192)	ADHD (n = 51)	Dyslexia (n = 207)	Migraine/ severe headache (n = 77)
Children							
Sex							
Male	2650	2242	141	87	29	118	33
Female	2651	2297	94	105	22	89	44
Age in years (SD)							
4	634	570	25	28	7	1	3
5	654	579	33	27	8	3	4
6	654	582	27	25	4	7	9
7	680	579	38	24	10	18	11
8	645	549	24	23	10	26	13
9	663	557	23	22	5 (	46 (	10
10	667	551	35	20	3	46	12
11	704)	572	30	23	4	60	15
Ethnic background							
Native Dutch	4273	3655	177	142	46	188	65
Immigrant, Western	324	275	18	14	0	14	3
Immigrant, Non-western	704	609	40	36	5	5	9
Body mass index							
Normal weight	3755	3221	161	142	33	135	63
Overweight	397	323	28	18	3	20	5
Obese	113 (	93	5	6	4	4	1
Unknown	1036	902	41	26	11	48	8
Family structure							
Two parent family	4683	4049	193	157	43	181	60
Single parent family	590	466	41	35	7	25	16
Other/Unknown	28	24	1	0	1	1	1
Number of acute health complaints							
None	3596	3180	140	104	25	133	14
1	1139	927	55	59	18	48	32
2	450	356	26	23	7	16	22
3 or more	116	76	14	6	1	10	9
Parental education level							
Low	713	603	34	31	9	24	12
Medium	1689	1423	76	62	21	73	34
High	2230	1936	91	78	14	94	17
Unknown	669	577	34	21	7	16	14

Values are percentages and numbers. Children with just one of the diseases listed differ significantly .
All five conditions had the parent-family-specific scales had lower mean scale scores, ADHD children who suffered from severe headaches had the lowest mean scale scores.

Table 2. Children with one ailment and those without any known chronic diseases, as measured by the CHQ-PF28

	No chronic condition	Asthma		Eczema		Dyslexia		ADHD		Migraine/severe headache	
	(n = 4539)	(n = 235)		(n = 192)		(n = 207)		(n = 51)		(n = 77)	
	mean score (SD)	Mean score (SD)	effect size	Mean score (SD)	effect size	Mean score (SD)	effect size	Mean score (SD)	effect size	Mean score (SD)	Effect size
Physical Component Summary Component Scale	58.53	54.49* (	0.67b *	56.75*	0.33a*	58.53	0.00	59.93 *	-0.27a*	54.89*	0.55b*
Scale for the Psychosocial Component Summary	53.86	53.72	0.02	52.66*	0.19*	51.51*	0.38a*	46.57 *	1.17c *	49.72*	0.48a*
Physical Functioning	98.44	93.14*	0.44a*	96.70*	0.21a*	96.99*	0.15*	98.69	-0.04	94.81 *	0.36a *
Role/Social Emotional Behavioral	98.80	97.59	0.10	97.05*	0.15*	95.17*	0.29a*	96.73*	0.21a*	92.21*	0.35a *
Role/Social-Physical	98.84	97.31*	0.13 *	97.57	0.13	97.91	0.12	97.39	0.10	95.24*	0.28a *
Bodily Pain	88.85	84.51*	0.24a *	82.19*	0.38a*	87.73	0.07	89.41	-0.04	75.84*	0.62b *
Behavior	73.44	72.91	0.04	70.66	0.19*	69.43	0.29a*	53.90	1.21c *	67.94	0.32a*
Mental Health	83.19	82.62	0.04	82.03	0.09	81.04	0.16*	73.37	0.72b *	73.92	0.52b*
Self-Esteem	82.38	80.60	0.14 *	79.45	0.23a*	77.54	0.38a*	75.90	0.51b *	77.65	0.38a*
General Health Perception	90.47	77.30	0.77b*	86.69	0.27a*	90.92	-0.04	88.16	0.16	82.19	0.52b*
Parental Impact-Emotional	92.96	89.10	0.28a*	89.52	0.26a*	89.55	0.26a*	85.29	0.57b*	85.23	0.43a*
Parental Impact-Time	97.39	96.60	0.07	96.79	0.06	96.78	0.06	90.85	0.29a*	93.07	0.25a*
Family Activities	93.47	92.71	0.05	90.30	0.21a*	94.38	-0.07	79.17	0.60b*	86.69	0.38a*
Family Cohesion	80.84	82.47	-0.10	76.82	0.23a*	80.39	0.03	71.76	0.53b*	75.84	0.29a *

When 0.2 d 0.5 tiny difference, a signifies small difference. When 0.5d>0.8, b denotes a moderate difference.
When d is greater than 0.8, the symbol "c" denotes a significant difference; otherwise, we did not indicate them in our table.
Using general linear models to account for The same pattern of substantial differences was observed notwithstanding any potential confounders. The S1 Table lists the percentages of child who have numerous chronic conditions. The mean CHQ-PF28 summary and profile scores were often lower when children with numerous chronic diseases were considered.

Table 3. Difference in scale scores and summary scale scores between children with one of five common childhood conditions/disorders and chil-dren without reported chronic condition by General Linear Models when multiple conditions were excluded (n = 5301).

	PF	REB	RF	BP	BE	MH	SE	GH	PE	PT	FA	FC	PhS	PsS
Asthma	-5.34*	-0.19	-1.30*	-2.31	1.07	0.35	-0.76	-12.19*	-1.31	-0.18	0.68	1.67	-3.72*	0.74
vs. No chronic disease														
Dyslexia	-1.22*	-3.09*	-0.71	-0.71	-4.41*	-2.09	-3.72*	0.42	-4.43*	-1.11	-0.57	-0.96	0.07	-2.36*
vs. No chronic disease														
ADHD vs.	1.02	-2.15	1.78	2.41	-19.51*	-8.34*	-6.26*	-0.36	-7.56*	-5.18*	-11.96*	-8.24*	2.67*	-7.14*
No chronic disease														

In general linear models, potential confounders included age, gender, ethnicity, BMI, single-parent family status, number of acute health problems, and paternal educational level. *P<0.05
Physical and perceptions of overall health are all considered as part of the RF role functioning on the PSCS (Psychosocial Summary Component Scale), PHS (Physical Summary Component Scale), and REB (Emotional/Behavioral Role Functioning). Impact on parents in PE: Emotional; in PT Time; in FA in FC.

Compared to child who just had one of the five common chronic diseases. However, patterns of variation amongst child with and without particular chronic diseases are comparable.

Children with just one chronic disease and those without one have different characteristics. gender-specific ways on the CHQ-PF28 measures, as shown in S3 Table. Girls with asthma scored considerably worse on the Mental Health Scale than girls without chronic conditions, while there was no statistically significant difference between boys with asthma and boys without chronic conditions. Behavioral, Self Esteem, and Behavior Psychosocial Component Summary Scale scores were considerably lower in eczema-affected girls. Boys with eczema scored lower on the Despite the fact that these disparities amongst boys were not statistically significant, boys with chronic conditions scored lower on the Family Activities and Family Cohesion measures.

Both dyslexic boys and girls showed essentially the same patterns. Even though the effects of ADHD on boys were greater than on girls in scales related to psychology and behavior.Boys and girls with severe headaches and migraines showed different patterns, it was discovered.

Children with asthma who were assessed by a primary care physician or a medical specialist had significantly lower mean scores and asthma severity scale. and the perception of general health scale than children who weren't. Children with dyslexia whom the family had seen the parental impact-emotional scale had slightly higher scores for doctors or medical specialists than it did for child.

5. Discussion

The current study shows that child with common chronic conditions have lower HRQOL scores than child without any chronic conditions. Clinical standards given in the CHQ Manual are consistent with the pattern of reduced HRQOL throughout the prespecified conditions [27]. Children's HRQOL is often poorer when comorbidity is taken into account than when children with comorbidity are left out of the analysis.

Dyslexia

In the current study, Dutch children with dyslexia were more prevalent. It is in line with data from the Dutch Health Insurance Study (DHIS) from 2009 to 2015, which indicated less cases of dyslexia in children from western backgrounds and non-western backgrounds [14].

The fact that the Dutch language may not be a child's first language in the Karbalaa is one rationale that has been put forth. Their bilingual upbringing may make it more difficult to identify dyslexia early on because reading difficulties could be misconstrued for a general difficulty picking up the Dutch language. Psychosocial Summary Component is one of the "psychosocial" aspects of HRQOL, and other 'psychosocial' findings were the most remarkable findings for children with dyslexia. the role playing-self-esteem, general behavior, and the behavior/emotional scale. This may be partly attributable to dyslexic symptoms, which include challenges with reading, spelling, listening, and writing. Children with dyslexia may have academic difficulties and a sense of inferiority to their peers [12]. Both clinical and population research rarely provide information on children with dyslexia's HRQOL.

ADHD

The HRQOL of families and parents was also adversely affected. These results don't line up with earlier research by others [24]. These effects were more pronounced in boys than in girls, in particular. According to recent research, parents scored higher than child without chronic conditions Physical functioning is described body discomfort categories. Given the extremely of girls and boys with ADHD in the current analyses, it should be interpreted with caution.

Eczema

In the current inquiry, a correlation between the family structure and eczema was found, correlating with a prior study [28]. Eczema had an impact on the "physical" and "psychosocial" elements of HRQOL, which is in line with other study [7]. Physical functioning and physical pain scale ratings were significantly conditions. The most common eczema symptoms, itching and pain [7], which may prevent child from participating in activities and sports, could help to explain this observation. In the current investigation, low self-esteem was noted. According to some theories, child with eczema may encounter remarks about their looks, taunting, bullying, or even rejection from their peers. embarrassing situations and a deficiency of confidence [10]. There was a gender-specific difference seen. Regarding general psychosocial HRQOL, conduct, and self-esteem, girls were more distressed than boys. Because girls are typically expected to be appealing in appearance according to socially constructed beliefs.

Asthma

Compared to children without chronic diseases, recent analyses showed were more likely to live in single-parent families, which is consistent with a previous study linking family composition and asthma prevalence [30].

According to parents, asthma has the biggest effects on "physical" parts physical functioning, the physical summary scale, and other measures of HRQOL and physical discomfort. This discovery is in line with earlier findings that have been published [9]. Children with asthma were judged by their parents to be in generally poor health and at risk of getting worse. Others have remarked that there were no significant differences in our study related self-esteem and mental health [30], which leaves us without an explanation.

A severe headache or migraine

According to recent analyses, parents of child with migraines or severe headaches had lower levels of education than parents of child without chronic conditions. This finding is in line with research by Bugdayci et al., who found that mothers' lower levels of education were significantly associated with child' headache presence [24]. According to certain studies [7].

The fact that this illness is physically uncomfortable may help to explain why they have impaired "physical" HRQOL. Low scores on the family and mental health domains of HRQOL, however, imply migraines can affect a student's academic performance, social interactions with classmates, and home and family activities[19].

Strengths and weaknesses

The benefits of this research are numerous. The size of the particular allowed us to compare children's in relation to the most common chronic disease (s). Studies have evaluated the effects of specific childhood chronic illnesses on HRQOL [6, 9, 12], but few have compared the HRQOL of children with several common childhood chronic conditions to that of children without any conditions [20].

Second, the CHQ-PF28, a well-known and thorough overall amount that allowed for the assessment of both the "psychosocial" and the "physical" burden of these conditions was used to assess HRQOL. Thirdly, the relationships between having a chronic condition and HRQOL were accounted for in the current studies.

6. Conclusion

Particularly at the level of large populations, slight is known about precise of the burdens maximum illnesses on school-aged broods. who are in school may experience a burden on their HRQOL due to prevalent long-lasting diseases during childhood and families. By highlighting the unique HRQOL profiles affected by widespread chronic diseases in a descriptive, general tester of school-aged children, the current study helps to close the gap.

These specialized HRQOL profiles will assist pediatricians and other professionals working with children's health in understanding the multifaceted effects of particular diseases on the children, families, and parents. Additionally, the current study has established national reference values for children in school-age groups' HRQOL, which can be utilized to compare HRQOL across studies.

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