

The importance of family support in pediatrics and its impact on healthcare satisfaction

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Scand J Caring Sci; 2017; 31; 241–252

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Aims: To evaluate predictors of healthcare satisfaction for parents whose children received hospital-based healthcare services at the Children's hospital at Landspítali University Hospital.

Methods: In this cross-sectional study, data on perceived family support, family quality of life, expressive family functioning, coping strategies and healthcare satisfaction were collected from 159 mothers and 60 fathers (N = 177 families) of children and adolescents from 2011 to 2012.

Results: Logistic regression analysis revealed that, for mothers, 38.8% of the variance in satisfaction with healthcare services was predicted by perceived family support and their coping strategies, while for fathers,

59.9% of the variance of their satisfaction with healthcare service was predicted by perceived family support, family quality of life and whether the child had been hospitalised before.

Discussion: Perceived family support was the one factor that was found to predict both the mothers' and the fathers' satisfaction with healthcare services. Knowing which factors predict satisfaction with health care among parents of hospitalised children with different chronic illnesses and health issues can inform the delivery of effective family-focused interventions and evidence-based practice to families.

Keywords: family systems nursing, hospitalised children and adolescents, parents, healthcare satisfaction, perceived family support, family quality of life, expressive family functioning, coping strategies.

Submitted 9 September 2015, Accepted 13 January 2016

Introduction

The movement in health care towards reduced lengths of hospital stays has resulted in more responsibility placed on families to care for hospitalised children both during their stay and postdischarge; this increased role for family members requires specific family support from healthcare professionals, particularly from paediatric nurses. Through purposeful therapeutic conversation interventions, paediatric nurses can help parents to cope with and or adapt to the illness situation (1–4). Such supportive intervention, however, need to be structured around the family's needs and be related to the specific health situation that the family is facing.

Family systems nursing (FSN) as is conceptualised in the Calgary Family Assessment and the Calgary Family

Intervention Models (5) has received increased attention by clinical nurses and researchers. Therefore, FSN is now more visible in the healthcare services. Further, growing evidence regarding the benefits of involving families in health care for both the patients and their family members is promising (5–11). Improved family health outcomes (e.g. family relationships, family quality of life, relationship satisfaction, decreased care giving burden, emotional and informational support), following interventions (e.g. family-focused, cognitive-behavioural and psychosocial), for families dealing with chronic or acute illnesses have been reported (5, 12–15). Therefore, offering family nursing interventions is essential in paediatric settings, as relational interventions can guide nurses to explore how illnesses impact on family members' lives and relationships. Family nursing interventions are offered within the context of a nurse–family relationship and enacted primarily through therapeutic conversations where the goal is to offer support, facilitate change, and/or maintain or enhance family functioning and well-being (15, 16).

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In hospital settings, it is essential to investigate how satisfied families are with the health care that their children are receiving, which includes evaluating how satisfied they are with the information they receive regarding the illness and with the hospitalisation experience itself. Nevertheless, little is known about the relationships between healthcare satisfaction and educational and emotional support families are receiving within paediatrics. Evaluating the healthcare satisfaction of patients and their families are one effective way to assess healthcare quality (17, 18). Parental satisfaction in paediatric practice both in hospital-based and home-based care has been found to be relatively high (19, 20); however, a negative correlation has been reported between greater disease severity and lower satisfaction with treatment and lower family quality of life (21, 22).

The aim of this cross-sectional study was to evaluate predictors of healthcare satisfaction for parents whose children received hospital-based healthcare services at the Children's Hospital at Landspítali – The National University Hospital in Iceland (LUH). The study was conducted 1 year after the conclusion of a 4-year knowledge translation project to implement a family nursing intervention programme at the hospital (23). Healthcare satisfaction was measured and analysed as it related to demographic and illness variables, as well as perceived family support, family quality of life, expressive family functioning and parent coping strategies. A better understanding of the factors that relate to parental satisfaction with paediatric healthcare services provides opportunities for hospitals to improve the programmes (such as family nursing interventions) that they offer, thereby improving healthcare quality, the patient experience and potentially health outcomes.

Background

Numerous research studies have reported on healthcare satisfaction among parents of children with chronic illnesses (18–22). In a follow-up study of 60 families with a child newly diagnosed with type 1 diabetes, families who received hospital- and home-based care had greater parental healthcare satisfaction and less healthcare resource use compared with families who had received hospital-based care (19). However, no significant difference in overall satisfaction with health care was found between mothers and fathers of children with type 1 diabetes (20).

Kuhlthau and colleagues conducted a systematic review of family-centred care, focusing on family-provider partnerships. Family-centred care was associated with improved efficient use of service, health status, satisfaction with and access to care, communication and family functioning (24). Although results on overall parental satisfaction with the hospital-based healthcare services at

paediatric units ($n = 422$) in a children's hospital in Iceland indicated high satisfaction with healthcare services, the study indicated that a number of areas needed improvement, including furnishings, collaboration between staff, collaboration between staff and parents, information provision to parents and care and support to parents (25).

Family support has been operationalised in many studies as cognitive and emotional support (1–3, 26–31), but little is known about the relationship between perceived family support and the satisfaction with healthcare services. In this study, family perceived support was measured by the Iceland – Family Perceived Support Questionnaire (ICE-FPSQ) (32) where the focus is on emotional and cognitive support. Emotional support has been evaluated through the actions that offer families the opportunity to express how they are handling the burden of their emotions around a family member's illness, reflect on their experience as caregivers and share their illness narratives. Cognitive support, however, has been measured through the actions that offer to inform or educate families when helping them to handle their illness affair (5). Results from intervention studies conducted in paediatric units using the ICE-FPSQ measure have indicated that mothers of children with a variety of different chronic or acute illnesses reported significantly higher support after a therapeutic conversation intervention compared to those in control groups (1, 3).

Cognitive-behavioural intervention programmes that focus on teaching the active use of coping strategies may prevent children with chronic illness from developing psychosocial problems (33, 34). Interventions targeting coping need to be customised to each child and his or her family's experience, given the variability of preferred coping strategies and the types of stressors the family is experiencing as well as their quality of life. In a study of children with cancer and their families, psychosocial cancer-related stressors during treatment were found, such as distressing emotional reactions. These authors suggested that early family-based interventions, such as using appropriate coping strategies (e.g. cognitive restructuring, relaxation, practical strategies, seeking social support and emotional expression) would be beneficial to the families (35). Similarly, in a separate study, families of children with cancer were found to utilise a broad range of approach and avoidance strategies to manage cancer and its treatment (36).

Even though relatively few research studies have reported on fathers' perspectives following a paediatric patient intervention, researchers have evaluated gender differences between parents' coping patterns related to childhood conditions (37–40). Results from an educational and support intervention study of families of children newly diagnosed with cancer indicated a significant difference in the fathers' use of coping patterns after the

intervention, compared to before the intervention. However, no significant difference was found for the mothers (39, 40). Similarly, in a study of children with type 1 diabetes, fathers rated their coping patterns to be significantly more beneficial after an educational and support intervention than before the intervention (37).

Theoretical background and research questions

The 4-year Family Nursing Implementation Knowledge Translation Project at Landspítali took place in Reykjavík, Iceland (2007–2011), where family nursing was implemented at an institutional level – on every unit of a 650-bed university hospital. A steering committee of practice leaders developed and implemented the educational intervention focused on teaching practicing nurses the skills of offering brief therapeutic conversations to families (the educational and training intervention programme – the ETI programme). The ETI programme was developed to assist paediatric nurses in general and in advanced practice to offer relevant support to both parents (23). The results of this knowledge translation project, which are now beginning to appear in published literature, suggest that brief therapeutic conversations are of benefit to both families and nurses (1–3, 23, 28–31, 41–44).

Based on a review of the literature and the theoretical background that guided the study and the knowledge translation programme (the Calgary Family Assessment Model and the Calgary Family Intervention Model) (5), it was hypothesised that perceived family support, family quality of life, expressive family functioning coping strategies and the family and the child's background information would significantly predict mothers' and fathers' satisfaction with hospital-based paediatric healthcare services. The following research questions were addressed: (i) Are there significant differences in mothers' and fathers' perceptions of family support, family quality of life, expressive family functioning, coping strategies and perception of satisfaction with the healthcare services based on the child's and family demographics? (ii) Are there gender differences between the mothers and fathers in dyadic relationships related to perceived family support, family quality of life, expressive family functioning, coping strategies and satisfaction with hospital-based paediatric healthcare services?

Method

Participants and settings

Parents (363 mothers and fathers) of children receiving hospital-based healthcare services at the children's hospital at LUH in Reykjavík Iceland were invited to participate in the study; 219 signed the written consent form,

representing a 60.3% response rate. Data for this cross-sectional study were collected from 177 families (159 mothers and 60 fathers) from 2011 to 2012. Parents were introduced to the study by RN (BSc or MSc nurses) working on one of several hospital units and invited to participate if they met the study's eligibility criteria. The eligibility criteria for the parents were the following: the children needed to be 18 years of age or younger, and their families needed to receive the paediatric healthcare services in one of the units (neonatal, emergency, children's, or day and outpatient unit) at the hospital. The parents also needed to be able to read and write Icelandic, and at least one parent needed to be able to participate in the study. Additional inclusion criteria were the length of stay for the child, which had to be more than 1 day at the children's unit, at least 4 hours at the emergency unit, or in repeated treatment at the day unit. For the neonatal unit, the child had to be medically stable. Exclusion criteria for parents included being participants in any other study regarding their child's health condition at the time of the data collection. Each parent separately answered all the Web-based questionnaires (n = 216) or responded by using the paper-and-pencil format (n = 3).

Sample

The demographic characteristics and illness variables for the participants in this study are displayed in Table 1. Participants included 159 mothers and 60 fathers; these participants included 42 pairs of mothers and fathers of children who were admitted or received healthcare services at LUH. More than half of the children were admitted to the children's unit, with the others being admitted through the emergency department, neonatal care unit, or the day and outpatient unit at the time of the study. In terms of the children's characteristics, there were slightly more boys than girls in the study. A little less than half of the children were under 5 years of age, and approximately one-third were adolescents between 13 and 18 years of age. Approximately half of the children had chronic illnesses and had been previously hospitalised, or needed to take a medicine regularly.

Of the parents, approximately half of them were 31–40 years, and the majority of them were married or partnered. A little less than half of the parents had completed either a university or postuniversity education. The majority of the fathers were working full time or in school full time; the majority of the mothers were working part time or full time or were in school. Most of the parents had received information/education about their child's illness(es). Fewer than half of the parents responded that they needed immediate support from professionals. Approximately one-fifth of the parents belonged to a support group related to their child's illness

Table 1 Demographic characteristics and illness variables of families receiving healthcare services at all units studied at the children's hospital at LUH

	Mothers (n = 159)	Fathers (n = 60)	Mothers–fathers dyad (n = 42)	
	n (%)	n (%)	Mothers n (%)	Fathers n (%)
Child's gender				
Female	71 (44.6)	28 (46.7)	19 (45.2)	
Male	88 (55.4)	32 (53.3)	23 (54.8)	
Child's age				
≤5 years	66 (42.3)	28 (46.7)	20 (47.6)	
6–12 years	37 (23.7)	15 (25.0)	10 (23.8)	
13–18 years	53 (34.0)	17 (28.3)	12 (28.6)	
Does the child have a chronic illness?				
Yes	59 (38.1)	30 (50.0)	20 (48.8)	
No	96 (61.9)	30 (50.0)	21 (51.2)	
Unit admitted				
Children's unit	88 (55.3)	32 (53.3)	26 (61.9)	
Emergency unit	30 (18.9)	6 (10.0)	2 (4.8)	
Neonatal unit	12 (7.5)	9 (15.0)	7 (16.6)	
Day unit	10 (6.3)	4 (6.7)	1 (2.4)	
Outpatient unit	19 (12.0)	9 (15.0)	6 (14.3)	
Has the child been hospitalised before?				
Yes	89 (57.1)	29 (49.2)	26 (61.9)	
No	67 (42.9)	30 (50.8)	16 (38.1)	
If yes, how many times?				
1–2	60 (76.9)	22 (78.5)	19 (79.2)	
3–4	8 (10.3)	1 (3.6)	2 (8.3)	
≥5	10 (12.8)	5 (17.9)	3 (12.5)	
Does the child need a medicine regularly?				
Yes	74 (48.4)	28 (47.5)	23 (56.1)	
No	79 (51.6)	31 (52.5)	18 (43.9)	
Marital status				
Married	80 (51.0)	34 (57.6)	24 (58.6)	
Partnered	49 (31.2)	23 (39.0)	17 (41.4)	
Single parent	28 (17.8)	2 (3.4)		
Family income (US dollars/month)				
<\$3000	53 (35.4)	9 (15.8)	5 (12.8)	
\$3000–4500	41 (27.3)	16 (28.1)	13 (33.3)	
\$4501–7500	42 (28.0)	21 (36.8)	15 (38.5)	
>\$US 7500	14 (9.3)	11 (19.3)	6 (15.4)	
Parent's age				
19–30 years	35 (22.0)	11 (18.3)	9 (21.4)	6 (14.3)
31–40 years	72 (45.3)	24 (40.0)	21 (50.0)	17 (40.5)
41–50 years	42 (26.4)	19 (31.7)	9 (21.4)	14 (33.3)
51–60 years	10 (6.3)	6 (10.0)	3 (7.2)	5 (11.9)
Education completed				
Middle school	32 (20.2)	14 (23.7)	11 (26.2)	11 (26.2)
High school	54 (34.2)	20 (33.9)	12 (28.6)	16 (38.1)
University	43 (27.2)	17 (28.8)	11 (26.2)	13 (30.9)
Postuniversity/Graduate	29 (18.4)	8 (13.6)	8 (19.0)	2 (4.8)
Employment status				
Stay-at-home parent	24 (15.3)		5 (12.2)	
Part time or student	42 (26.8)	2 (3.3)	9 (21.9)	1 (2.4)
Full time or student	73 (46.5)	45 (75.0)	25 (61.0)	31 (73.8)
Full time and second job	8 (5.1)	12 (20.0)		10 (23.8)
Unemployed	10 (6.3)	1 (1.7)	2 (4.9)	

Table 1 (Continued)

	Mothers (n = 159) n (%)	Fathers (n = 60) n (%)	Mothers-fathers dyad (n = 42)	
			Mothers n (%)	Fathers n (%)
Have you received information about the child's illness?				
Yes	116 (79.5)	41 (70.7)	32 (76.2)	29 (72.5)
No	30 (20.5)	17 (29.3)	10 (23.8)	11 (27.5)
If yes, from whom? ^a				
Nurses	66 (51.2)	30 (57.7)	18 (42.9)	22 (51.4)
Physician	106 (74.1)	37 (64.9)	29 (69.0)	27 (64.3)
Nutritionist	19 (17.1)	10 (21.3)	9 (21.4)	8 (19.0)
Internet	38 (31.1)	20 (37.7)	9 (21.4)	16 (38.1)
Do you belong to a support group related to the child's illnesses?				
Yes	32 (20.6)	13 (22.0)	9 (21.4)	12 (29.3)
No	123 (79.4)	46 (78.0)	33 (78.6)	29 (70.7)
Does anyone else in the family have serious illness?				
Myself or another in the family	77 (51.0)	35 (58.3)	20 (48.8)	23 (54.8)
No one I know	74 (49.0)	25 (41.7)	21 (51.2)	19 (45.2)
Do you think you need support now from healthcare professionals?				
Yes	64 (41.0)	21 (35.0)	21 (50.0)	14 (33.3)
No	92 (59.0)	39 (65.0)	21 (50.0)	28 (66.7)
If yes, from whom? ^a				
Nurses	39 (33.6)	11 (23.4)	18 (42.9)	9 (21.4)
Physician	45 (36.9)	17 (35.4)	20 (47.6)	11 (26.2)
Social worker	19 (17.4)	5 (11.1)	10 (23.8)	5 (11.9)
Nutritionist	19 (17.4)	7 (15.6)	7 (16.7)	5 (11.9)
Psychologist	27 (24.5)	6 (13.3)	9 (21.4)	3 (7.1)
Minister/priest/clergy	4 (3.8)	2 (4.5)	3 (7.1)	1 (2.4)

^aThe percentages sum to more than 100% for this item because participants could select multiple sources of information. n varies due to missing data.

at the time of the study. Approximately half reported that someone else in their family had a serious illness.

Instruments

Demographic information about the family as well as information about the child's health condition(s) was collected from the parent's perspective. The demographic questionnaire included questions about the parent's age, marital status, education and family income. This self-report instrument also included questions for parents regarding the child's age and gender, the reason for the child being admitted to or receiving services at the hospital, medications and support at the time of the study.

The *Icelandic – Family Perceived Support Questionnaire (ICE-FPSQ)* is a 14-item instrument with two subscales cognitive (five items) and emotional (nine items) support on a 5-point Likert-type scale, with higher scores indicating a perception of better family support. The conceptual foundation of this measurement is based on the Calgary Family Intervention Model (5). This instrument has been psychometrically tested with the Cronbach's alpha = 0.953 for the total scale (45). In the current sample, the Cronbach's alpha for the total scale was 0.933;

for the cognitive subscales, 0.866; and for the emotional subscale, 0.906.

The *PedsQL™ – Family Impact Module* is a 36-item instrument designed to assess the impact of paediatric chronic health conditions on parents and families. It includes eight subscales that measure parents' self-reported functioning: physical functioning (six items); emotional functioning (five items); social functioning (four items); cognitive functioning (five items); communications (three items); worry (five items); daily activities (three items); and family relationships (five items). This instrument has been psychometrically tested with a Cronbach's alpha of 0.97 (46). Parents chose a response from 0 to 4 on a Likert-type scale, meaning that higher scores indicated better family quality of life. In this study, the Cronbach's alpha was 0.974 for the total scale and 0.914 for the physical functioning subscale; 0.909 for emotional functioning; 0.895 for social functioning; 0.941 for cognitive functioning; 0.739 for communications; 0.901 for worry; 0.898 for daily activities; and 0.948 for the family relationships subscale.

The *Icelandic – Expressive Family Functioning Questionnaire (ICE-EFFQ)* is a 17-item instrument with four subscales: emotional communication; collaboration and problem-solving;

verbal communication; and behaviour. The instrument uses a Likert-type scale ranging from 1 to 5, with higher scores indicating better expressive family functioning. This instrument has been psychometrically tested with a Cronbach's alpha of 0.895 for the total scale (47). In the current sample, the Cronbach's alpha for the total scale is 0.979; for the emotional communication subscale, 0.959; for collaboration and problem-solving, 0.947; for verbal communication, 0.932; and for the behaviour subscale, 0.961.

Family coping was assessed using the *Coping Health Inventory for Parents (CHIP)*, which has been validated for children with a variety of chronic illnesses. The questionnaire consists of 45 items with three subscales: (i) maintaining family integration and optimism; (ii) maintaining social support and self-esteem; and (iii) understanding the medical situation. Parents chose a response from 1 to 4 on a Likert-type scale, with a higher score indicating a greater reliance on that particular coping pattern. The CHIP has demonstrated good psychometric properties, with a Cronbach's alpha of 0.71–0.79 (48). For this study, the Cronbach's alpha for the total scale was 0.952 and 0.911 for coping (i), 0.971 for coping (ii) and 0.844 for the coping (iii) subscale.

Healthcare satisfaction was evaluated using the *PedsQL™ – Healthcare Satisfaction Generic Module*, which is a 24-item self-report inventory. The items are grouped into six domains associated with healthcare satisfaction: information (five items), family inclusion (four items), communication (five items), technical skills (three items), emotional needs (four items) and overall satisfaction (three items). Parents chose a response from 1 to 5 on a Likert-type scale, with higher scores indicating better healthcare satisfaction. The instrument has been psychometrically tested with a Cronbach's alpha of 0.79 (17). For this study, the Cronbach's alpha for the total scale was 0.974, 0.928 for the information subscale, 0.926 for family inclusion, 0.922 for communication, 0.856 for technical skills, 0.921 for emotional needs and 0.936 for the overall satisfaction subscale.

Data analysis

Descriptive analyses, including means and standard deviations, were used to summarise the demographic characteristics, illness and environmental variables. Independent *t*-tests were performed to test the differences between the mean scores, and paired-sample *t*-tests were used to test the differences between the parents of the same child (mother-and-father dyads, $n = 42$) on family demographic characteristics, perceived family support, family quality of life, expressive family functioning, coping strategies and healthcare satisfaction. To test the hypotheses, logistic regression was used with $n = 92$ for the mothers and $n = 47$ for the fathers. Because the data

for healthcare satisfaction variable did not meet the criteria for normal distribution, the data were split into two equal groups (>77.0 and <77.0) and logistic regression was used on the data.

According to Field (2013), the rule of thumb for an appropriate sample size in logistic regression analysis is 10–15 participants for each variable (49) and as such we had sufficient numbers ($n = 96$) for the six variables significantly correlated with the outcome variable to be entered into the mother's model. Similarly, for the fathers, the sample size was sufficient ($n = 47$), for the three variables that were significantly correlated with the outcome measure to be entered in the final model. The Statistical Package for Social Sciences (SPSS) software version 21.0 was used to conduct the data analyses. Differences were considered statistically significant if $p < 0.05$.

Results

Perceived family support

Perceived family support was evaluated using the ICE-FPSQ. When perceived family support was analysed by illness variables, mothers (i) with a child who had a chronic illness, (ii) who belonged to a support group related to her child's illness or (iii) who had received information about her child's illness had significantly higher mean ICE-FPSQ total scale scores. Higher scores represent a perception of greater family support compared to mothers whose children did not have a chronic illness, who did not belong to a support group related to her child's illness or who had not received information about her child's illness, respectively. However, for fathers, no significant differences in mean ICE-FPSQ total scale scores were seen when comparisons were made between groups of fathers regarding any of these three illness variables (Table 2).

Family quality of life

Family quality of life was evaluated using the *PedsQL™ – Family Impact Module*. Mothers of children with a chronic illness had a significantly lower mean *PedsQL™ – Family Impact Module* total scale score, representing lower family quality of life compared to mothers of children who did not have a chronic illness. For fathers, no significant difference was found for mean *PedsQL™ – Family Impact Module* total scale score ($p = 0.060$) only on the emotional, communication and worry subscales, based on the presence or absence of a chronic illness for their child. Treatment characteristics also influenced parents' perception of their family quality of life. For both mothers and fathers, parents whose children had been previously hospitalised had significantly lower mean *PedsQL™ – Family Impact Module* total scale scores compared with those

Table 2 Independent *t*-tests of the differences between mean ICE-FPSQ, PedsQL™ – Family Impact Module and PedsQL™ – Healthcare Satisfaction Generic Module scores for parents of children receiving healthcare services at all units studied based on the demographic information (*n* = 159 mothers, *n* = 60 fathers)

Questionnaires Variables	Total scale		t-test	p Value
	n	Mean (SD)		
Perceived family support				
Does the child have a chronic illness?				
Mothers				
Yes	56	45.33 (14.52)	3.30	0.001
No	82	36.52 (16.28)		
Fathers				
Yes	29	42.20 (16.68)	0.032	0.974
No	29	42.07 (15.34)		
Do you belong to a support group related to the child's illnesses?				
Mothers				
Yes	31	47.39 (13.50)	2.994	0.003
No	108	37.87 (16.17)		
Fathers				
Yes	13	47.63 (11.58)	1.428	0.159
No	45	40.55 (16.69)		
Have you received information about the child's illness?				
Mothers				
Yes	108	43.01 (15.56)	4.528	0.000
No	24	27.63 (12.42)		
Fathers				
Yes	40	43.60 (15.68)	1.173	0.246
No	16	38.03 (16.91)		
PedsQL™ – family impact module				
Dose the child have a chronic illness?				
Mothers				
Yes	50	60.51 (21.74)	-3.306	0.001
No	77	72.40 (18.46)		
Fathers				
Yes	29	69.99 (19.40)	-1.919	0.060
No	26	79.28 (16.10)		
Has the child been hospitalised before?				
Mothers				
Yes	76	62.68 (21.47)	3.495	0.001
No	52	75.03 (16.58)		
Fathers				
Yes	28	68.49 (18.57)	-2.783	0.007
No	26	81.54 (15.66)		
Dose the child need a medicine regularly?				
Mothers				
Yes	63	62.92 (21.21)	-2.831	0.005
No	62	73.10 (18.89)		
Fathers				
Yes	27	66.65 (18.58)	-3.385	0.001
No	27	82.24 (15.09)		
Do you think you need support now from a healthcare professional?				
Mothers				
Yes	56	58.13 (19.58)	5.027	0.000
No	72	74.95 (18.13)		

Table 2 (Continued)

Questionnaires Variables	Total scale		t-test	p Value
	n	Mean (SD)		
Fathers				
Yes	20	67.36 (18.75)	-2.220	0.031
No	35	78.39 (17.12)		
PedQL™ – healthcare satisfaction				
Has the child been hospitalised before?				
Mothers				
Yes	82	81.28 (13.57)	2.647	0.009
No	59	72.68 (22.12)		
Fathers				
Yes	25	72.63 (13.74)	-1.554	0.129
No	24	81.63 (25.01)		

n varies due to missing data; *p* < 0.05; *p* < 0.001.

parents whose child had not been hospitalised before. In addition, parents whose children needed to take medicine regularly reported significantly lower family quality of life than parents whose children did not need to take a medicine regularly. Lastly, those parents who felt that they needed immediate support from healthcare professionals reported significantly lower family quality of life than those parents who did not think that they needed such immediate support (Table 2).

Satisfaction with healthcare services

Healthcare satisfaction was evaluated using the *PedsQL™ – Healthcare Satisfaction Generic Module*. The mean score on the *PedsQL™ – Healthcare Satisfaction Generic Module* total scale was significantly higher on the total scale as well as on the information, family inclusion, communication and overall satisfaction subscales which represents greater satisfaction with healthcare services for mothers of children who had been previously hospitalised when compared to mothers of children who had not been previously hospitalised. For fathers, no significant difference was found when the mean score of the total scale for fathers of children who had been previously hospitalised was compared to fathers of children who had not been previously hospitalised (Table 2).

Gender differences

Gender differences for perceived family support, family quality of life, expressive family functioning, coping strategies and satisfaction with health care for parents were evaluated among the 42 mother–father dyad participants with children who were receiving hospital-based healthcare services. Compared with the mothers in these dyads, the fathers had significantly higher

mean PedsQL™ – Family Impact Module total scale scores, as well as higher mean scores on the physical functioning, emotional functioning, social functioning and communication subscales. No significant differences were found by gender between the parents' mean scores on the cognitive functioning, worry, daily activities and family relationships subscales. However, the mothers' mean ICE-EFFQ total scale score, as well as mean emotional communication, collaboration and problem-solving and verbal communication subscale scores were significantly higher when compared with those of the fathers in these families. No significant differences were found between parents in dyads for healthcare satisfaction, perceived family support and coping strategies (Table 3).

Hypothesis testing – factors associated with healthcare satisfaction

We hypothesised that perceived family support, family quality of life, expressive family functioning, coping strategies and the family and the child's background information would significantly predict mothers' and fathers' satisfaction with hospital-based paediatric healthcare services. To test this hypothesis, all of the predictor variables (e.g. perceived family support, expressive family functioning, family quality of life and coping strategies) as well as the mother's and father's age and education, child's chronic illness(es) status, child's history of prior hospitalisation and the child's need to take medicine regularly were entered into the logistic regression models.

Table 3 Paired-samples *t*-tests of the differences between mean PedsQL™ – Healthcare Satisfaction Generic Module, ICE-FPSQ, PedsQL™ – Family Impact Module, ICE-EFFQ and Coping Health Inventory for Parents scores for parents (dyad: mothers and fathers; paired) of children receiving healthcare services at all units studied (*n* = 42)

	<i>Mothers (n = 42)</i>	<i>Fathers (n = 42)</i>		
	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>t</i> -test	<i>p</i> Value
Perceived family support				
Total score	45.44 (15.59)	46.32 (14.48)	−0.359	0.722
Cognitive	17.53 (6.36)	18.39 (4.97)	−0.948	0.349
Emotional	27.91 (10.36)	29.93 (10.57)	−0.009	0.992
PedsQL™ – family impact module				
Total score	63.26 (19.95)	70.12 (15.84)	−2.56	0.015
Physical functioning	59.81 (22.90)	69.02 (19.28)	−2.56	0.015
Emotional functioning	61.18 (26.20)	72.53 (20.88)	−3.03	0.005
Social functioning	64.58 (28.53)	75.34 (20.46)	−2.88	0.007
Cognitive functioning	70.53 (24.32)	76.32 (17.85)	−1.31	0.199
Communication	67.57 (25.52)	76.24 (18.91)	−2.29	0.028
Worry	52.36 (27.24)	61.08 (27.13)	−1.78	0.084
Daily activities	58.97 (30.91)	64.74 (26.52)	−1.62	0.115
Family relationships	79.85 (19.44)	77.94 (16.79)	0.71	0.484
Expressive family functioning				
Total score	71.71 (8.28)	66.36 (9.35)	3.43	0.001
Emotional communication	17.05 (2.58)	16.04 (2.60)	2.47	0.018
Collaboration & problem-solving	21.71 (2.63)	19.35 (4.25)	2.83	0.007
Verbal communication	16.13 (2.66)	14.91 (2.71)	2.57	0.014
Behaviour	16.83 (2.78)	16.05 (2.37)	1.93	0.061
Coping health inventory for parents				
Total score	97.17 (26.33)	98.41 (27.15)	−0.277	0.784
Coping I	45.34 (11.86)	45.46 (11.54)	−0.065	0.948
Coping II	34.86 (11.37)	34.67 (11.89)	−0.091	0.928
Coping III	16.97 (5.56)	18.29 (5.60)	−1.256	0.220
PedsQL™ – healthcare satisfaction				
Total score	80.26 (18.76)	79.00 (20.86)	0.268	0.790
Information	74.46 (24.36)	76.67 (20.75)	−0.471	0.640
Family inclusion	81.42 (20.01)	83.95 (20.28)	−0.566	0.575
Communication	78.64 (20.24)	77.73 (23.36)	0.175	0.862
Technical skills	84.90 (20.35)	84.11 (22.34)	0.151	0.881
Emotional needs	74.57 (23.26)	73.92 (21.85)	0.120	0.905
Overall satisfaction	88.82 (19.30)	86.84 (19.63)	0.439	0.663

n varies due to missing data; *p* < 0.05.

Table 4 Logistic-regression model for predicting factors influencing mothers' and fathers' perception of their healthcare satisfaction

Predictor variables	B	SE	Wald	p Value	OR
Mothers' healthcare satisfaction (n = 92)					
Perceived family support	0.080	0.019	17.104	0.000	1.083
Coping strategies	0.025	0.013	4.019	0.045	1.026
Constant	-5.776	1.498	14.869	0.000	0.003
Fathers' healthcare satisfaction (n = 47)					
Family quality of life	0.061	0.030	4.219	0.040	1.063
Perceived family support	0.104	0.032	10.311	0.001	1.110
Prior hospitalisation	-2.132	0.921	5.353	0.021	0.119
Constant	-7.871	3.076	6.547	0.011	0.011

Mothers: Model: $\chi^2(2, n = 92) = 31.633$, $p < 0.001$; Cox & Snell $R^2 = 0.291$; Nagelkerke $R^2 = 0.388$.

Fathers: Model: $\chi^2(3, n = 47) = 28.921$, $p < 0.001$; Cox & Snell $R^2 = 0.460$; Nagelkerke $R^2 = 0.599$.

The final model for mothers containing predictors (family perceived support, coping strategies) was statistically significant, $\chi^2(2, N = 92) = 31.633$, $p < 0.001$. For the mothers, between 29.1% (Cox & Snell R square) and 38.8% (Nagelkerke R square) of the variance in perceived satisfaction with healthcare services was predicted by the mother's perceived family support and their coping strategies. The final model for fathers containing predictors (perceived family support, family quality of life and prior hospitalisation) was statistically significant, $\chi^2(3, N = 47) = 28.921$, $p < 0.001$. For the fathers, between 46.0% (Cox & Snell R Square) and 59.9% (Nagelkerke R Square) of the variance in perceived satisfaction with healthcare services was predicted by the family quality of life, perceived family support and whether the child had been previously hospitalised. Thus, this hypothesis was partially supported for both the mothers and the fathers in our study (Table 4).

Discussion

The main finding from the hypothesis testing supported the premise that the factors of perceived family support, family quality of life and coping strategies and prior hospitalisation predicted the parents' satisfaction with paediatric healthcare service at LUH. It is noteworthy that perceived family support was the one factor that was found to predict both the mothers' and the fathers' satisfaction with healthcare services. This result is interesting, as the data were collected from parents of children receiving hospital-based services. Healthcare providers and administrators need to be aware of the importance of offering family support to parents of hospitalised children (e.g. through information resources, family health-promotion activities and

emotional support) to manage their caregiving activities on a daily basis.

In this study, both mothers and fathers reported overall high satisfaction with healthcare service (mothers = 88.82; fathers = 86.84), which was based in part on the care their child was receiving, how helpful and friendly the staff members were and the way the child was treated at the hospital. These results are consistent with research results where parents of children with diabetes reported overall high satisfaction with hospital-based healthcare services (19, 20). In our study, the mothers of children who had been previously hospitalised reported significantly higher satisfaction on the information, family inclusion and communication subscales of the satisfaction with the healthcare service questionnaire, indicating that the mothers of children with prior hospitalisation experiences were more satisfied with (i) how much information was provided to them about their child's overall health condition, (ii) the sensitivity that was shown to them from the staff, (iii) the willingness to answer questions to the family during the child's hospitalisation and (iv) how well the staff listened to them and their concern, compared to mothers who had not had a prior hospitalisation experience for their child.

One of the findings that is of special interest to registered nurses, advanced practice nurses and to healthcare professionals who are working with families of children with chronic or acute illnesses is that parents perceived high family support from nurses. The parents reported they were receiving useful information, gaining increased awareness of their family strengths and were having better access to available resources. According to Wright & Leahey, and Wright & Bell (5, 16), offering family nursing interventions is essential in paediatric settings, because relational interventions can guide nurses to explore how illnesses have an impact on family members' lives and relationships.

In our study of mother-father dyads with children receiving hospital-based healthcare services, significant gender differences were found related to family quality of life (higher for fathers) and expressive family functioning (higher for mothers). Similar results have also been reported in studies of parents of children with chronic illnesses (19, 20) where the mothers reported lower family quality of life compared with the fathers. In contrast with our study, no differences were found on expressive family functioning between mothers and fathers of children newly diagnosed with cancer. However, mothers reported higher expressive family functioning after the intervention than before. No such differences were found for the fathers (28).

Parents of children receiving hospital-based healthcare services reported lower family quality of life related to treatment characteristics (e.g. if the child had been previously hospitalised, needed to take medicine regularly and

if they felt that they needed immediate support from healthcare professionals vs. those who did not). These findings indicate that both parents felt anxious, sad, angry, frustrated, helpless or hopeless, that others did not understand their family's situation and that it was difficult to talk about their child's health with others and to tell doctors and nurses how they felt. Further, they worried about the child's future, medical treatments, how others will react to the child's condition and how the child's illness was affecting other family members. These results indicate the importance of giving both mothers and fathers opportunities to express their feelings regarding their child's health and illness situation. In addition, these results are in harmony with the emphasis in the Calgary Family Intervention Model (5) regarding having nurses' intervention focus on sustaining or improving family functioning, family quality of life and/or well-being.

Implications for practice and research

The strength of this study lies in the utilisation of well-validated tools that provide a multi-dimensional and multi-perspective assessment of healthcare satisfaction, perceived family support, family quality of life, expressive family functioning and coping strategies. However, given that satisfaction is not a static variable, the evaluation of satisfaction with healthcare services should be an ongoing aspect of healthcare quality management. The primary limitation to this cross-sectional study is its small sample size, which limits the generalisability of the study. The findings may therefore not be suitable for other healthcare situations or cultures. These findings are encouraging and need to be explored further with a larger sample size, a mixed method and longitudinal intervention study design and a before and after analysis, in terms of using a family nursing intervention and measuring healthcare satisfaction before and after. Further studies are needed regarding offering family support interventions both in advanced and general nursing practice.

Conclusion

Family support in paediatric health care and its relationship with healthcare satisfaction is of great value in promoting the movement in health care towards reduced lengths of hospital stays and quality management. We

are optimistic about the results from the hypothesis testing, where perceived family support, family quality of life and coping strategies predict satisfaction with healthcare services among parents of children with chronic or acute illnesses. These findings especially support the importance of sustaining family nursing interventions in paediatrics in clinical practice both at the advanced and general practice level. The findings are also of great importance to parents of children with chronic illnesses, because the core result indicates the importance of supporting parents through the child's hospitalisation and care through outpatient clinics, by giving them an opportunity to reflect on how they are dealing with their child's illness situation on a daily basis. Further, assessing perceived family support, coping strategies and family quality of life can give healthcare professionals helpful information regarding what needs to be addressed in today's paediatric healthcare services.

Acknowledgement

The authors would like to thank all the parents who participated in the study. Special thanks go to Gudrun Eyglo Gudmundsdottir, and Johanna Hjorleifsdottir, nurses at the children's hospital at LUH for their valuable contribution to this study by participating in the data collections.

Author contributions

Sigurdardottir and Svavarsdottir were responsible for the study design and analysis of the data. Sigurdardottir collected the data and drafted the manuscript under the supervision of Svavarsdottir. Svavarsdottir and Garwick carefully edited the manuscript.

Ethical approval

This study was conducted with approvals from the Scientific Ethical Boards (68/2008) and from the chief executive of nursing and medicine at LUH. This study was also reported to the Data Protection Committee in Iceland (S4986).

Funding

The study was funded by grants from the LUH Research Fund, the Science Fund of the Icelandic Nurses' Association and the Science Fund of Ingibjörg R. Magnusdottir.

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