SATISFACTION FROM CAREGIVERS OF CHILDREN UNDER AGE OF FIVE FOR SURGERY DEPARTMENT OF NATIONAL PEDIATRIC HOSPITAL, PHNOM PENH, CAMBODIA

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ABSTRACT: This cross-sectional study was conducted to determine level of satisfaction from caregivers of children aging under-five toward health care services at Surgery Department of National Pediatric Hospital, Phnom Penh, Cambodia, and to determine the association between satisfaction level and explanatory factors. Suggestions and comments from caregivers were also revealed in this study. A structured questionnaire was administered by face-to-face interview to 245 participants consuming health care services at Surgery Department. Descriptive statistics were used to describe satisfaction level and explanatory factors variables while the association between these factors was determined by chi-square test. The average score for out-patient satisfaction was 65.46 and in-patient satisfaction was 80.06. Only 15.6% of the respondents were highly satisfied with out-patient health care services while 24.2% of the respondents were highly satisfied with in-patient health care services. Caregivers of out-patient were highly satisfied with courtesy of health provider (21.2%), convenience in getting to health care (20.7%), and quality of care (19.0%). While in-patient, respondents were highly satisfied with courtesy of health provider (30.3%), quality of care (27.3%), and convenience in getting to health care (24.2%). Education (*p-value*.012), family income (*p-value*.002), availability of health care services (*p-value*.000), financial accessibility (*p-value*.037) and acceptability of health care provider (*p-value*.031) were significantly associated with satisfaction level. Larger part of comments from respondents mostly concerned with high medical expenses, information center, cleanliness of places, working times of doctor and number of required doctor especially for plastic surgery and trauma-orthopedic health care services. From this finding, it is recommended that improvement is needed in few items connected to medical expense, working hours and recruitment of more doctors, and two-way communication during the provision of service. Caregivers' satisfaction should be studied in parallel with job satisfaction of service providers to understand the concerns that make respondents not satisfied and solve the problems accordingly.

Keywords: Satisfaction, Caregivers, Children, Cambodia

INTRODUCTION

Globally, 6.6 million under-five children died in 2012. It is an account for nearly 18.000 deaths in every day with severity of diverse root causes [1]. In recent years there has been an inclination towards performing increasing amounts of surgery on children [2]. Those surgical interventions could require either day or night stay which depends on the nature of the diseases or the harsh condition of children.

Since delivery of surgical care is an issue of strengthening the life of children. Without immediate intervention the life of those children

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cannot be saved or even prolonged. Some congenital abnormalities not only wipe out the life of young children at their early age, but also bring to those children lifelong disabilities with impact on their physical and emotional wellbeing eventually depriving them from reaching their highest life potential.

The World Health Organization (WHO) Global Initiative for Emergency and Essential Surgical Care was established in 2005 in response to this problem as well as to strengthen the delivery of surgical care mainly targeting the low-income countries [2]. Similarly, in the case of Cambodia, under-five children make excellent candidates for cases of surgery as they are substantially to exposed to various kind of systemic diseases in their vulnerable age group. Children under- five also start their motor development that partly shares the root cause typically prepare them to get ready to require minor, intermediate or advance surgical procedures.

Since health care problem for under-five children is still an issue, the policy aiming toward the reduction of child mortality rate has been included in the United Nations (UN) Millennium Development Goal (MDG) 4 since 1990. Around the globe, mortality rate for under-five children has dropped significantly, from 90 deaths per 1000 live birth in 1990 to 48-deaths per 1000, by 2012 [3]. In Cambodia, the endorsement and quite effective implementation of the MDG 4 has achieved as noticeable outcome, a reduction of child mortality rate from 116 deaths per 1000 in 1990 to 54 deaths per 1000 in 2011 [4]. Nonetheless, such reduction is still insufficient to achieve the target of the MDG 4 which is to cut down to two-third the mortality rate by 2015.

The implementation of MDG 4 by Cambodia is facing difficulties in some places, due to the fact that Cambodia health care service is still under many constraints. Among those constraints is a lack of good management, monitoring and supervision that cause poor quality of Cambodia health care provision. Additional, Cambodia is still in shortage of trained health professionals, poor or absent physical infrastructure, and power supply, lack of equipment, drugs supplies and health information system for planning. Lastly, inadequate budget resulted in low salaries and poor motivation of staff [5]. All these factors do not allow caregivers to fully enjoy the local public health care service provided for their children.

Surgery Department of National Pediatric Hospital (NPH) plays crucial role as national referral hospital center for pediatric patient to deliver quality of services to save life of children nationwide. NPH is also in the process of self-accreditation in stepping forward for ASEAN Economic Community (AEC) in which health sector has to be internationalized. There have been previously some studies and researches conducted in this Surgery Department. There, there has been no study conducted by mainly focusing on the satisfaction from caregivers admitted for the Surgery Department of this hospital. For this reason, the study of satisfaction from caregivers received health services from this hospital is inarguable indispensable.

METHODS

This study research was approved by the Ethical Committee, Chulalongkorn University, Thailand (COA no. 042/2014). This cross-sectional study was conducted to determine level of satisfaction of under-five children caregiver toward health care services at Surgery Department of National Pediatric Hospital, Phnom Penh, and to determine the association between satisfaction level and explanatory factors. Suggestions and comments from caregivers were also revealed in this study.

Data collection was conducted in a period of one full month of March 2014. Purposive sampling to caregivers of children under-five was applied to out-patient respondents after their time got specialized clinical consultation (Trauma-orthopedic and clubfoot, plastic reconstructive surgery, abdomen) and in-patient respondnets after post operation of the child. Systematic sampling was applied to respondents from general pediatric surgical consultation to avoid selection bias.

A pilot test of 30 questionnaires was conducted for its reliability. The value of Cronbach's alpha coefficient on satisfaction part was 0.8. Researcher used Cocrhan (1997) formula for sample size calculation and used value of Cronbach's alpha coefficient (p=80%) as the proportion of population processing characteristic of interest to gain maximum sample size (245). Questionnaire was also tested for its content validity by three experts. Modification of the questionnaire was made as necessary.

Prior to the actual data collection four interviewers were explained beforehand to ensure a clear understanding and unbiased approach of the data collection process. A structured questionnaire was administered by face-to-face interview to 245 participants consuming health care services at Surgery Department. Statistical Package of Social Sciences (SPSS) version 17 was performed

(Chulalongkorn University's licensed). The analysis was carried out at two parts: descriptive and association analysis. Descriptive statistics were used to describe data regarding predisposing factors of caregivers such as age (1= 15-24 years, 2= 25-34 years, 3= 35-44 years, 4= 45-54 years, 5= 55 years and above), gender (1=Male, 2=Female), education (0= Illiterate, 1= Primary school, 2= Secondary school, 3= Bachelor degree , 4= Others), occupation (1= Daily labor, 2= Housewife, 3= Business, 4= Employee, 5= Service, 6= Others), and family income (1= 0 - 150.000 Real (0-35$), 2= 150.001-300.000 Real (35-75$), 3= 300.001- 450.000 Real (75-110$), 4= 450.001-600.000 Real (110-150$), 5= 600.001 and above (150$ and above). It was also used to describe enabling factors of services variables such as geographical accessibility (5 items): 1= Low (0-1.66), 2= Moderate (1.67-3.32), 3= High (3.33-5.00), availability (4 items): 1= Low (0-1.33), 2= Moderate (1.34-2.66), 3= High (2.67-4.00), financial accessibility (2 items): 1= Low (0-0.66), 2= Moderate (0.67-1.33), 3= High (1.34-2.00), and acceptability (6 items): 1= Low (0-4.00), 2= Moderate (4.01-8.00), 3= High (8.01-12.0). Plus, it described need factors (Illness level required for immediate health care service use) encompassing with health problems (General pediatric diseases, abdominal surgery, trauma-orthopedic, clubfoot, and plastic surgery), health expectation (4=Excellent/ High, 3=Acceptable/Reasonable, 2= Fair/Free of charge, and 1=No expectation), and health personnel service including office registrar (3 items): 1= Not good (1-3), 2= Fair (4-6), 3= Good (7-9), Doctor (6 items): 1= Not good (1-6), 2= Fair (7-12), 3= Good (13-18), Nurse (3 items): 1= Not good (1-3), 2= Fair (4-6), 3= Good (7-9), Pharmacist (2 items): 1= Not good (1-2), 2= Fair (3- 4), 3= Good (4-6). Mean score and standard deviation were calculated for patient satisfaction which assessed by Likert five point rating scales (1= Very dissatisfied, 2= Dissatisfied, 3= Neutral, 4= Satisfied, 5= Very satisfied) and determined by 19 questions in Convenience (8 items), Courtesy (4 items), and Quality (7 items). The satisfaction was divided into three levels by using mean score + and – one standard deviation as cut off point: High (> mean score + one SD), Medium (mean score – one SD to mean score + one SD), Low (< mean score –one SD). Chi-square analysis was performed to find out the association between age, gender, education, occupation, family income, geographical accessibility, availability, financial accessibility, acceptability, and health problem with caregivers' satisfaction.

RESULTS

Table 1, the result of this study revealed that the age of caregivers from out-patient was between 17 to 64 years while in-patient was 21 to 62 years. The mean and SD for out-patient were 30.87 and 7.35 while in-patient were 35 and 10.51. Majority of Out and in-patient respondents were in the 25-34 age group which account for 65.6% and 33.3% respectively. More than 80% of the respondents were females (86.3% out-patient and 90.9% in-patient). A large proportion of out-patient respondents of (48.6%) had completed secondary school education while those of in-patient (48.5%) attained primary school education. Related to occupation, a larger number of out-patient respondents (38.2%) were housewives while among in-patient (42.4%) were farmers. The average monthly income of caregivers was classified into five groups. Respondents both Out and In-patient (34.4%, 48.5% respectively) earned an average family monthly income from 600.001 and above (150$ and above). The respondents' relationship with sick children of out-patient and in-patient were respectively 77.4% and 75.8% mothers.

For the enabling factors, most of the out-patients and in-patients respondents had access to health care services (99.0% and 93.2% respectively). Acceptance of health personnel (97.2% and 100% respectively), availability of health care services (94.8% and 100% respectively), ability to access to hospital (71.7% and 81.8% respectively), and ability to financially access to health care costs (52.8% out-patient but 36.4% only among in-patients).

For the health problem part, 49.1% of the out-patient and 51.5% of the in-patient respondents had previously visited the Surgery Department and the majority thought the health condition of their child was serious (out-patient 68.4% and in-patient 72.7%). The main reasons for the severity were fear that disease could bring lifelong disability and, of death. Out-patient respondents visited the Surgery Department for general pediatric surgery (72.8%), trauma-orthopedic surgery (12.3%), plastic surgery (8.5%), clubfoot (3.8%) and abdominal surgery (2.8%). In-patient respondents visited the Surgery Department for general pediatric surgery (60.5%), plastic surgery (27.3%), and for trauma orthopedic and clubfoot foot surgery (12.2%). Out-patient respondents considered medical expenses acceptable (47.6%), technical equipment used in the hospital excellent (47.6%), support from health service providers

Table 1 Caregivers predisposing characteristics

Characteristics	Out-patient N (%)	In-patient N (%)
Age (years)		
15-24	31(14.6)	7(21.2)
25-34	139(65.6)	11(33.3)
35-44	29(13.7)	8(24.2)
45-54	9(4.2)	5(15.2)
≥ 55 years	4(1.9)	2(6.1)
Total	**212 (100.0)**	**33 (100.0)**
	Min=17, Max=64	Min=21, Max=62
	Mean= 30.87, SD= 7.35	Mean= 35, SD= 10.51
Gender		
Male	29(13.7)	3(9.1)
Female	183(86.3)	30(90.9)
Total	**212 (100.0)**	**33 (100.0)**
Educational level		
Illiterate	8(3.8)	(9.1)
Primary school	76(35.8)	16(48.5)
Secondary school	103(48.6)	14(42.4)
Bachelor degree	21(9.9)	0(0)
Others	4(1.9)	0(0)
Total	**212 (100.0)**	**33 (100.0)**
Occupation		
Daily labor	27(12.7)	7(21.2)
Farmer	42(19.8)	14(42.4)
Housewife	81(38.2)	8(24.2)
Business	36(17.0)	2(6.1)
Employee	14(6.6)	1(3.0)
Service	12(5.7)	1(3.0)
Total	**212 (100.0)**	**33 (100.0)**
Family income		
0 - 150.000 Real	37(17.5)	9(27.3)
150.001- 300.000 Real	20(9.4)	0(0)
300.001- 450.000 Real	27(12.7)	6(18.2)
450.001- 600.000 Real	55(25.9)	2(6.1)
600.001 and above	73(34.4)	16(48.5)
Total	**212 (100.0)**	**33 (100.0)**
	Mean=89.86	Mean=117.12
	SD=128.28	SD=172.14
Relationship with children		
Mother	164(77.4)	25(75.8)
Father	26(12.2)	2(6.1)
Other	22(10.4)	6(18.2)
Total	**212 (100.0)**	**33 (100.0)**
Number of child sibling		
No sibling	53(25.0)	11(33.3)
1-3	153(72.2)	18(54.5)
4-6	6(2.8)	4(12.1)
Total	**212 (100.0)**	**33 (100.0)**

acceptable (36.3%), and supply of medicine excellent (34.0%). In-patient respondents considered excellent the technical equipment, supply of medicines and support from service providers (87.9%, 72.7% and 36.4 % respectively). Regarding health personnel services, 91.0% and 100% of out-patient and in-patient respondents respectively got good service from doctors, 68.4% and 84.8% from nurse. Other (69.5% and 56.7%) of in-patient respectively got good services from pharmacist and health registrar while (83.5% and 63.2%) of out-patient got fair services.

Overall high satisfaction in out-patient and in-patient Departments was 15.6% and 24.2% respectively), medium satisfaction 70.2%, and 57.6% and low satisfaction 14.2% and 18.2%.

Regarding the distribution of satisfaction level out-patient and in-patient caregivers were more

Table 2 Association between independent variables and dependent variables of out-patient

Independent variables	Satisfaction level				*p- value*
	Low	Medium	High	Total	
	N (%)	N (%)	N (%)	N(%)	
Age (years)					
15-34	24(14.1)	123(72.4)	23(13.5)	170(100.0)	.245
35 and above	6(14.3)	26(61.9)	10(23.8)	42(100.0)	
Gender					
Male	3(10.3)	24(82.8)	2(6.9)	29(100.0)	.258
Female	27(14.8)	125(68.3)	31(16.9)	183(100.0)	
Educational level					
Illiterate- primary school	5(6.0)	62(73.8)	17(20.2)	84(100.0)	.012
Secondary school and higher	25(19.5)	87(68.0)	16(12.5)	128(100.0)	
Occupation					
Worker and farmer	9(13.0)	47(68.1)	13(18.8)	69(100.0)	
Housewife	10(12.3)	58(71.6)	13(16.0)	81(100.0)	.718
Business, service agent and civil servant	11(17.7)	44(71.0)	7(11.3)	62(100.0)	
Family income					
0-450.000	9(10.7)	53(63.1)	22(26.2)	84(100.0)	.002
45.0001 and above	21(16.4)	96(75.0)	11(8.6)	128(100.0)	
Geographical accessibility					
High	22(14.5)	104(68.4)	26(17.1)	152(100)	.571
Moderate and poor	8(13.3)	45(75.0)	7(11.7)	60(100)	
Availability					
High	23(11.4)	146(72.6)	32(15.9)	201(100)	.000
Moderate and poor	7(63.6)	3(27.3)	1(9.1)	11(100)	
Financial accessibility					
High	17(14.9)	86(75.4)	11(9.6)	114(100)	.037
Moderate and poor	13(13.3)	63(64.3)	22(22.4)	98(100)	
Acceptability					
High	27(13.1)	146(70.9)	33(16.0)	206(100)	.031
Moderate and poor	3(50.0)	3(50.0)	0(0.0)	6(100)	
Health problem					
Serious	19(13.1)	101(69.7)	25(17.2)	145(100.0)	.546
Not serious	11(16.4)	48(71.6)	8(11.9)	67(100.0)	

Significant at *p-value* <0.05

satisfied with the courtesy of health providers(21.2% and 30.3%, respectively), convenience of health services (20.7% and 24.2%) and quality of medical care 19.0% and 27.3%).

Table 2, the relationship between independent variables and satisfaction level was analyzed by chi-square test. The result of this study found that there was significant difference between educational level (*p-value*.012), family income (*p-value*.002), and availability of services from the hospital (*p-value*.000), financial accessibility (*p-value*.037), and acceptability to health care providers (*p-value*.031) while the other variables were not found statistically significant.

Caregivers provided suggestions and comments which were mostly concerned with medical expenses, information center, cleanliness of environment, working times of doctor and number of required doctor especially from plastic surgery and trauma-orthopedic care services.

DISCUSSION

The proportion of out-patient and in-patients with high satisfaction was 15.6% and 24.2% respectively). This result is higher than what found by Asma Ibrahim in out-patients of the Indira Gandhi Memorial hospital, Male Maldives (10.36%) [6]. There are wide variations in patients satisfaction level in different studies conducted in various times and places. Regarding places this study has found that in-patient satisfaction level is slightly higher than out-patient satisfaction. This higher level of satisfaction among in-patients caregivers maybe explained by the fact that in-patient children have major or minor surgical interventions desperately needed and in-patient care providers have given to Children more time, and more care than out-patient providers. There are many other factors that can explain different satisfaction level found in other studies such as variation in quality of services provided by health

facilities, cultural differences in service providers and service receivers, and different classifications of satisfaction level. For instance, this study satisfaction divided satisfaction into three levels: low, medium and high satisfaction whereas the other studies classified satisfaction into two levels: satisfied and less satisfied or high and low satisfied.

Among the three components of satisfaction, courtesy of service providers had highest proportion of high satisfaction level (21.2%) compared to convenience of health services (20.7%) and quality of health care (19.0%). Nonetheless, courtesy had highest proportion of low satisfaction level (19.8%), convenience (18.8%) and quality (15.5%) respectively. For in-patient, courtesy of service providers also had the highest satisfaction level (30.3%), quality of health care (27.3%) and convenience of health services (24.2%). However, courtesy (12.2%) also possessed highest proportion of low satisfaction level, quality of health care (12.1%) and convenience of health care (9.1%). This result reflected that respondents were mainly concern more with courtesy of health providers rather than quality and convenience of health care services.

Regarding educational level, the result of this study found that respondents who belonged to illiterate and primary education group had higher medium (73.8%) and high (20.2%) satisfaction level than secondary and higher education group. The association was statically significant. A similarly significant result was found by Devokata [7] on patient satisfaction toward health service in Maung district, Loiet province, Thailand where 80.2% patients with primary and low level of education were highly satisfied with health care services compared to patients with secondary or higher education. This could explain by the fact that respondents with higher educational level may had higher expectation toward health care services than those of lower educational level.

In regard to family monthly income, respondents earned between 0-450.000 Real (0-110$) had higher proportion of high satisfaction level (26.2%) than those of family monthly income from 450.0001 and above (110$-above) (8.6%). Family income had significantly associated with satisfaction level. This study compatible with Kosint Intavises that found family income had relation with satisfaction [8]. From the above results, it could explain that higher social class people may have higher demand for good health care services in comparison to those of lower social class.

Availability, financial accessibility and acceptability were significantly associated with satisfaction similar to Penchensky and Thomas [9] results that supported accessibility to services had effect on consumer satisfaction. Considering about this, improving accessibility to caregivers would help the hospital to increase their satisfaction level.

RECOMMENDATION

It is recommended to improve a few items connected to medical expenses, working hours and recruitment of more doctors, and two-way communication during the provision of services. Caregivers' satisfaction studies should be conducted in parallel with studies on job satisfaction of service providers to better understand the concern that make respondents not satisfied and to solve the problems accordingly.

LIMITATIONS

This study may present limitation for generalization, for the results of the questionnaire relied on interview data, especially the respondent's answer that may recall bias as there is no biological and scientific method conducted on validation of his or her response. Only 212 of out-patient respondents included to determine the association with satisfaction level which is less than the sample size calculated (245). The limited number of in-patient respondents and time limitation in conducting this research may also affect the result of this study.

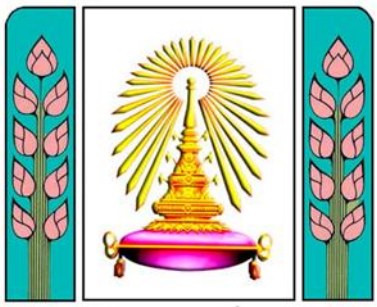
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