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Research Article

Do Parents or Guardians of Pediatric Patients With Acute Cough Consider Quality of Life (QOL) Questions Important, and Do Providers Ask Them?

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Keywords

- Acute cough; Quality of life questions; Loss of sleep; Pediatric patients/child; Parental satisfaction

Abstract

Objective: Acute cough in children is a common reason for emergency department (ED) visits and impacts the quality of life (QOL) of patients and their families. Study objectives were to compare how parents/guardians (caregivers) versus providers rate the importance of asking QOL questions during an ED encounter for acute cough; and determine whether asking QOL questions is linked with parental satisfaction with the visit.

Methods: This cross-sectional study sampled two groups: caregivers of pediatric patients presenting to an urban Pediatric ED; and physicians responding to an online survey.

Results: We surveyed 150 caregivers (81% mothers and 13% fathers); two-thirds had children younger than three years old. Providers were also surveyed (61% female, 39% male), most worked in a pediatric ED (79%). Caregivers recalled being asked few or no QOL questions during the visit. Questions rated as more important by caregivers than by providers were: the index child's loss of sleep ($p<0.0001$), school days missed ($p<0.0014$), and the caregiver's coping strategies ($p<0.0001$). There was no relationship between caregiver satisfaction with the ED visit for their child with acute cough and being asked QOL questions during the visit.

Conclusions: Caregivers rated highly the importance of being asked QOL questions during a pediatric ED visit for acute cough, especially loss of sleep for their child with cough, missed school days and their coping strategies for cough. Providers should be asking QOL questions as they are important to caregivers.

INTRODUCTION

Cough is one of the most common complaints for pediatric patients presenting to a medical provider [1,2]. It is estimated that there are approximately 75-100 million physician visits annually for the common cold, 22-189 million missed school days annually due to cold or cough, and 126 million missed workdays for parents staying home to care for their child with a cough [3].

Cough can be classified as acute or chronic, with acute cough defined as a cough lasting less than 3-4 weeks. Acute cough occurs most frequently secondary to upper respiratory illnesses. Cough can be a disturbing symptom and have a considerable impact on the quality of life (QOL) of patients and their families/caregivers [3,4]. Quality of life (QOL) indicators include poor sleep, missed school days, missed workdays, lost wages for the family, stress, poor coping strategies, and illness anxiety [3,4].

Several studies have documented the impact of cough on the QOL of patients and their families, especially chronic cough [4-6].There are multiple specific chronic cough validated questionnaires [7-11]. Few studies exist on the impact of acute cough on QOL, and there are few acute cough specific validated QOL questionnaires available [12].

Treatment for acute cough is largely supportive. This leaves providers with little to offer families of children presenting with acute cough except home remedies, supportive care, and empathy. Studies have shown that effective communication and physician empathy are associated with increased parental satisfaction with doctor visits and increased adherence to treatment recommendations [13-18]. Physician empathy may be expressed by asking QOL questions.

The purpose of this study was to determine the importance parents and other caregivers place on whether questions about QOL indicators are asked during an emergency department encounter for acute cough, and to evaluate if this was associated with increased parent satisfaction.

Study hypotheses

Hypothesis 1: Parents and guardians of pediatric patients with acute cough will rate the importance of QOL questions differently than pediatric emergency department, emergency department, and urgent care providers.

Hypothesis 2: There will be a relationship between parents' or guardians' satisfaction with the emergency or urgent care visit for their child with acute cough and being asked quality of life questions.

This study's secondary objective was to determine how frequently parents or guardians report being asked QOL questions when they present to an emergency department with a patient experiencing acute cough.

MATERIALS AND METHODS

The study was approved by the IRB of the IRB of the University of New Mexico Health Sciences Center.

Study Design

This cross-sectional study used two survey instruments: one for parents or guardians (henceforth referred to as caregivers) of pediatric patients presenting to an urban pediatric emergency department (ED) with acute cough and the other for pediatric ED and urgent care providers.

Selection Criteria

Caregivers: We included caregivers of children ages 1 month to 18 years with a cough lasting 3 weeks or less who presented to the University Of New Mexico Pediatric Emergency Department between September 2018 and February 2019.

We excluded caregivers of pediatric patients with comorbid conditions (pulmonary and cardiac pathologies such as asthma), patients being admitted, patients in extremis and potential participants who did not speak English or Spanish.

Providers: We included providers in Pediatric Emergency Medicine, Urgent Care or Emergency Medicine. These providers were anonymously recruited through the Pediatric Emergency Medicine online listserv and emails to professional groups such as American Academy of Pediatrics (AAP) and American College of Emergency Physicians (ACEP).

Survey Development

Surveys were pilot tested to establish face validity and to ensure readability and adequate understanding. Fifteen caregivers and 19 physicians participated in the pilot phase of the study. The surveys were revised based on feedback provided by these participants. Pilot data were not included in the final sample.

The parent and guardian survey (henceforth referred to as the caregiver survey) consisted of 19 questions. The provider survey (henceforth referred to as the physician survey) was a 23-question survey.

The caregiver survey began with demographic questions about caregiver gender, relationship to the patient, patient age, number of children living at home and satisfaction with their current visit. Satisfaction was measured as 1= "not at all satisfied," 2= "slightly satisfied," 3= "satisfied," 4= "very satisfied," and 5= "extremely satisfied." The next set of questions on the caregiver survey were binary asking whether they were asked seven specific QOL questions during the current visit. The final set of questions used a 5-point Likert scale to measure the importance caregivers placed on being asked these seven QOL questions by providers. The scale was coded as follows: 1= "not at all important," 2= "not very important," 3= "somewhat important," 4= "important," and 5= "very important." A final question used the same scale as a general measure of the importance of asking these quality-of-life questions.

The physician survey included demographic measures such as age, gender, if they had children or were caring for other children at home, their area of training, level of training, usual practice setting and length of time in practice. The next sections of the physician survey were designed to parallel the caregiver survey as closely as possible. Physicians were asked how often they asked caregivers the seven specific QOL questions that were included on the caregiver survey and provided a 5-point Likert scale where 1= "never," 2= "rarely," 3= "occasionally," 4= "frequently," and 5= "very frequently." The final section queried physicians on "how important is it to you to ask the caregiver" the same seven QOL questions and the 5-point Likert scale was the same importance scale used for the caregiver survey. The final question in the physician survey was essentially the same as for the caregiver survey.

Study Procedure

Pediatric patients presenting with cough symptoms were identified by monitoring the electronic patient tracking board at the University Of New Mexico Pediatric ED. A checklist was used to ensure eligibility for study participation. Verbal consent for participation was obtained from caregivers and consent confirmed by paper consent given to participants. Questions were then administered by the lead author or trained research assistants. Answers were entered into a password-protected online database (REDCaP) [20], using iPads or laptop computers.

The physician surveys were distributed using the online distribution networks listed above with an introductory email describing the study and survey as well as providing a link to the online survey in REDCaP [19]. Participants were informed that completing the survey implied consent.

No identifying information was collected from either families or providers.

Data Analysis

Univariate analyses included frequency distributions for all variables. Measures of central tendency included medians and interquartile ranges. Most predictor and outcome variables were based on ordinal level measurement scales, thus nonparametric statistics were used for analyses. For bivariate comparisons, the Wilcoxon rank sum test and a two-sided type one error rate of 0.05 were used to determine significance.

RESULTS

Univariate-caregivers

The characteristics of the 150 caregivers responding to the family surveys are shown in Table 1. Nearly all caregivers were mothers (n=122; 81%) or fathers (n=19; 13%). All but one survey was conducted in English. Two-thirds of children who accompanied caregivers were three years old or younger (n=101;

Table 1: Demographics of caregiver participants.

Language	Number	% of total
English	115	99%
Spanish	1	1%
Relationship of caregiver to patient		
Mother	122	81%
Father	19	13%
Grandparent	5	3%
Foster parent	1	1%
Other	3	2%
Age range of child (patient)		
Infant (0-<1 year)	47	31%
Toddler (1-3 years)	54	36%
Preschool (4-6 years)	20	13%
School (6-11 years)	26	17%
Adolescent (12-18 years)	3	2%
Number of children living at home		
0	4	3%
1	36	24%
2	48	32%
3	35	24%
4	10	7%
4	11	7%
6	1	1%
7	3	2%
Satisfaction with provider visit		
1 -not at all satisfied	1	1%
2- slightly satisfied	5	3%
3- satisfied	18	12%
4- very satisfied	25	17%
5- extremely satisfied	101	67%

67%), and very few were 12 years or older (n=3; 2%). Most caregivers had one, two, or three children living at home (n=119; 80%). Participants tended to be satisfied with the visit, with two-thirds extremely satisfied (n=101; 67%) and most of the remainder very satisfied (n=25; 17%) or satisfied (n=18; 12%).

The majority of caregivers (n=76; 51%) reported being asked none of the seven QOL questions, i.e., they responded "no" or "not applicable" to each question. Of the 49% who were asked QOL questions, a majority were asked one (n=33; 22%) or two (n=21; 14%) questions. Table 2 shows the frequency with which each QOL question was asked. Caregivers were most frequently asked whether the child with cough's sleep was affected, followed by being asked about their own coping strategy.

Univariate-providers

Table 3 shows that the typical respondent to the provider survey was female (n=159; 61%), young (n=151; 58% 40 years or younger) and had children (n=165; 63%). Most were attending level (n=198; 76%), specialized in Pediatric Emergency Medicine (n=195; 74%), and worked in a Pediatric Emergency Department (n=207; 79%).

Providers did not report asking QOL questions frequently when patients presented with acute cough (Table 4). Using an ordinal scale for which the value of 3 was associated with "occasionally," providers only asked two questions occasionally as measured by median values: if a child presenting with cough's sleep was affected, and how many school days that child had missed. A majority of providers asked most questions rarely or never.

Bivariate-comparing caregivers to providers

Table 5 presents and compares values related to the importance caregivers and providers placed on each of the QOL questions in the surveys. Caregivers rated the importance of four specific questions significantly higher than providers: if their child's sleep was affected (p<0.0001), how much school had been missed (p=0.0014), whether other children in the house were not sleeping well because of the child's cough (p=0.0001), and the caregiver's coping strategy (p=0.0001). Caregivers also rated the overall question about the importance of a provider asking

Table 2: The frequency caregivers were asked QOL questions.

QOL questions	Yes	No	N/A
If child sleep affected	**49 (33%)**	99 (66%)	2 (1%)
If caregiver sleep affected	20 (13%)	130 (87%)	0
School days missed	**23 (15%)**	57 (38%)	69 (46%)
Caregiver missed work- days	9 (6%)	127 (85%)	14 (9%)
Lost wages	3 (2%)	134 (89%)	13 (9%)
Siblings sleep affected	12 (8%)	100 (67%)	38 (25%)
Caregiver coping strategy	**38 (25%)**	111 (74%)	1 (1%)

Table 3: Demographics of physician/providers surveyed.

Gender	Number	% of total
Female	159	61%
Male	102	39%
Age(yrs.)		
20-30	25	10%
31-40	126	48%
41-50	60	23%
51-60	34	13%
61-70	13	5%
71+	4	2%
Have children		
Yes	165	63%
No	96	37%
Level of training		
Attending	198	76%
Fellow	37	14%
Resident	22	8%
Other	5	2%
Specialty		
Pediatrics	19	7%
Pediatric Emergency Medicine	195	74%
Emergency Medicine	46	17%
Other	3	1%
Practice setting		
PED ED	207	79%
ED	48	18%
Ped Urgent Care	5	2%
Urgent Care	2	1%
(Not all respondents answered all questions)		

Table 4: Frequency with which providers report asking QOL questions and central tendency measured on an ordinal scale.

QOL questions	Never	Rarely	Occas	Freq	Very freq	Median	IQR
If child sleep affected	20 (8%)	36 (14%)	86 (33%)	88 (33%)	33 (13%)	3	3,4
If parent sleep affected	80 (30%)	72 (27%)	72 (27%)	29 (11%)	10 (4%)	2	1,3
School days missed	31 (12%)	61 (23%)	98 (37%)	56 (21%)	17 (6%)	3	2,4
Caregiver missed work-days	90 (35%)	90 (35%)	61 (23%)	16 (6%)	3 (1%)	2	1,3
Lost wages	191 (73%)	57 (22%)	10 (4%)	3 (1%)	0 (0%)	1	1,2
Siblings sleep affected	176 (68%)	57 (22%)	20 (8%)	8 (3%)	1 (0%)	1	1,2
Caregiver coping strategy	90 (34%)	49 (19%)	57 (22%)	47 (18%)	20 (8%)	2	1,4

Table 5: Differences between caregivers (UNM) and providers (national survey) in how they rate the importance of asking quality of life (QOL) questions.

QOL questions	Caretaker Median (IQR)	Provider Median (IQR)	p-value
If child sleep affected	4 (3,5)	4 (3,4)	0.0000*
If caregiver sleep affected	3 (2,4)	3 (2,4)	0.064
School days missed	4 (3,5)	3 (3,4)	0.0014*
Caregiver missed work- days	3 (2,4)	3 (2,3)	0.38
Lost wages	2 (1,4)	2 (2,3)	0.12
Siblings sleep affected	3 (2,4)	3 (2,3)	0.0001*
Caregiver coping strategy	4 (3,5)	3 (3,4)	0.0001*
Overall importance of asking QOL questions	4 (3,5)	3 (3,4)	0.0000*

1=not at all important, 2=not very important, 3=somewhat important, 4=important, 5=very important"
*significant based on two-sample Wilcoxon rank-sum test

QOL questions during a visit for a child presenting with cough ($p<0.0001$) higher than providers. There was no difference in how caregivers and providers scored the importance of questions about caregivers' sleep, caregivers' missed workdays, and lost wages.

The relationship between being asked QOL questions and satisfaction

The number of QOL questions caregivers reported being asked ranged from 0 to 7, with a median (IQR) of 0 (0, 2). This number was slightly correlated with satisfaction scores ($r=0.13$), but not significantly ($p=0.12$). The distribution of satisfaction scores was skewed highly in favor of "satisfied" and "extremely satisfied" (Table 6) and there was little variance in this outcome regardless of the number of QOL questions asked. There was also no relationship between whether caregivers were asked any of the individual seven QOL questions and their visit satisfaction scores.

Table 6: Relationship between number of quality of life questions asked and caretaker satisfaction with ED visit.

Number of QOL questions asked	Satisfaction Score Median (IQR)
None (n=76)	5 (4,5)
One (n=33)	5 (4,5)
Two (n=21)	5 (4,5)
Three (n=11)	5 (4,5)
Four (n=5)	5 (5,5)
Five (n=5)	5 (5,5)
Six (n=2)	5 (5,5)
Seven (n=2)	5 (5,5)

1=not at all satisfied, 2=slightly satisfied, 3=satisfied, 4=very satisfied, 5=extremely satisfied

DISCUSSION

To our knowledge, this is the first study to examine caregiver and physician beliefs regarding asking quality of life questions during a visit to an emergency department or urgent care for acute cough.

The major findings of this study are the following:

1. Caregivers rate highly the importance of being asked QOL questions during an emergency department visit for acute cough.
2. Caregivers of patients with acute cough rate the importance of being asked quality of life questions more highly than providers in the emergency department or urgent care.
3. Caregiver satisfaction with an emergency department visit for acute cough was not associated with being asked QOL questions during the visit.

It is well established that cough can have a considerable impact on the quality of life (QOL) of patients and their caregivers [3,4,6].

Physicians, especially in the emergency department or urgent care settings, are under pressure to manage patient flow and see patients as quickly as possible. Patients with cough

present a challenge to providers as there is no medical cure or treatment for acute cough [3]. Additionally, there is no evidence in the literature for the effectiveness of over the counter (OTC) medications in young children to treat cough [20]. The use of OTC medications could be associated with adverse effects [21]. This leaves providers with little to offer families of children presenting with acute cough except for home remedies, supportive care and empathy.

If families rate highly the importance of being asked QOL questions during a visit for their child with acute cough, providers should express empathy by asking these questions. Asking these questions would add only an extra minute or two to the visit; and provide an outlet for caregivers to communicate their concerns and frustrations about a symptom with little or no treatment. At the very least, providers could ask the three questions shown to be of greatest importance to caregivers in this study, i.e., those related to loss of sleep for the patient, lost school days and caregiver strategies for coping with the cough.

Alternatively, acute cough QOL questionnaires could be given to families presenting with a child with a cough at triage. Answers to these questionnaires could be reviewed quickly before seeing the patient and pertinent issues noted from the questionnaires discussed.

In our study, parental satisfaction was not impacted by being asked QOL questions. This contrasts with the study results that examined the impact of a brief expectation survey on parental satisfaction in the pediatric emergency department. In that study, parental satisfaction with a visit increased when they had written their expectations for the visit in advance and the expectations were reviewed by the provider [22]. This is consistent with studies showing improved parental satisfaction with an emergency room visit when there is a good provider to parent communication [13-18,22].There is evidence that physician attitude, empathy and communication may be as important to parental satisfaction as patient waiting times [18, 23-26]. In addition, studies show that communication training for residents and medical students results in improved patient interaction and satisfaction [27-30]. Strategies to introduce teaching of quality-of-life issues during medical school, residency and fellowship training could prove beneficial.

Caregiver satisfaction was not associated with being asked QOL questions in our study, and hypothesis 2 was not supported. These unexpected findings could be because overall satisfaction scores were high, and our study was underpowered to identify a difference with the ordinal scales used. Our results contrast with other studies showing a positive relationship between physician empathy and patient and parent satisfaction. It is reasonable to posit that asking QOL questions during an emergency encounter for cough, which has been shown to be important to caregivers, could be considered a proxy for perceived physician empathy.

LIMITATIONS

Our study had some limitations. First, it was a one site study with almost exclusively English -speaking caregivers. Secondly, we did not use formally validated surveys, and the questions on the frequency of asking QOL questions were not exactly matched for the caregiver and physician surveys. Thirdly, we did not ask caregiver survey respondents if they were employed, making it difficult to assess the importance of asking the QOL question related to missing work and lost wages. Lastly, surveys were not self-administered by caregivers. This could have introduced bias if caregivers answered questions based on how they perceived they were expected to answer by interviewers.

CONCLUSION

Acute cough is a common complaint for pediatric patients presenting to the emergency room or urgent care center and impacts the quality of life of patients and their families. Parents or guardians of these patients rated highly the importance of being asked quality of life questions during a visit for cough, especially about loss of sleep for the child with cough, missed school days and how the caregiver is coping with the child's cough.

Providers also believe it is important to ask these quality-of-life questions, especially those related to poor sleep or school absence, yet they do not routinely ask these questions. Providers should be asking caregivers quality of life questions during a pediatric visit for acute cough. Asking QOL questions can be a proxy for physician empathy.

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