

## PARENTAL AWARENESS OF LIVER DISEASE AMONG CHILDREN IN SAUDI ARABIA

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Several studies have been conducted in the Kingdom of Saudi Arabia to evaluate clinical manifestations, risk factors and epidemiological data in order to emphasize the need for educating the general public and to help in implementing community-based programs for preventing diseases.<sup>1-5</sup> The Hepatology Section of the Department of Pediatrics, King Faisal Specialist Hospital and Research Centre (KFSH&RC) is a national tertiary care referral center for pediatric liver diseases. We felt that most parents were unaware of various aspects of liver diseases, including symptoms, causes, diagnosis and the treatment modalities available.

A survey was conducted among randomly chosen parents in the outpatient department and pediatric wards to assess and document the magnitude of this problem. The results suggest that except for the well-educated parents, the majority are unaware of the significance of the problems related to liver diseases among children.

### Methods

A questionnaire was distributed to 500 randomly selected parents who brought their children to the Outpatient Clinic or to the pediatric ward at KFSH&RC, over a six-month period between September 1995 and February 1996. The following were excluded from the survey: 1) parents of children with liver disease; 2) parents whose child had been admitted to the pediatric floor in the hospital for more than 24 hours; and 3) parents with a relative in the medical profession. After a brief introduction, a single trained interviewer explained the purpose of the survey. The parents completed the questionnaire written in Arabic by themselves. Parents who were illiterate were helped by the interviewer to fill in the questionnaire. The interviewer explained to the parents that the survey was strictly confidential. The different parameters included in the questionnaire are shown in Table 1.

The frequencies of all category variables were calculated, and a table showing the association between the education level and different answers was created. Difference in means of continuous variables were tested for significance by Student's *t*-test. The *P*-value of <0.05 was used to indicate statistically significant differences. For small frequencies, Fisher's exact test was used.

### Results

Of the parents taking part in the survey, 210 (42%) were below 30 years of age, 222 (44.4%) were between 30 and 40 years of age, and 68 (13.6%) were over 40 years. The number of fathers interviewed was 262 (52.4%) and mothers 238 (47.6%). Of the number interviewed, 89 (17.8%) were illiterate (education level 1), 66 (13.2%) had primary school education (level 2), 120 (24%) had intermediary school (level 3), 95 (19%) had secondary school certification (level 4), and finally 130 (26%) had university, or a higher education (level 5).

The response to all categories of questions asked is listed in Table 1. The majority of parents (over 50%) had no knowledge about the location of the liver in the abdomen, symptoms and causes of liver diseases, infectivity of liver diseases, relationship of the disease to inheritance, availability of vaccines for liver diseases, treatment modalities available, functions of the liver, and the need for liver biopsy to diagnose liver diseases. Only in the category of number of liver, shape of liver, and the effect of liver diseases on the pediatric age group did the majority of parents (over 50%) provide a correct answer. The answers were then analyzed separately for fathers and mothers. For this purpose, each group was subdivided according to their level of education. The *P*-value was calculated for the highest education level (education level 5) versus lowest education level (education level 1). For the fathers, there was a significant percentage of correct answers in the higher education level (level 5). In comparing fathers of education level 5 with those of education level 1, the *P*-value was significant for all the parameters tested. With regards to fathers of low education (level 1), the correct answers ranged between 5% and 24% in all instances, except for the number of liver and shape of the liver, which were 43% and 75%, respectively. The same observation was valid for the mothers, i.e., the higher

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TABLE 1. Results of the answers to the questionnaire given to 500 parents.

Questions	Correct answer (%)	Wrong answer (%)	Do not know (%)	Father's P-value	Mother's P-value
How many livers are there in the body?	412 (82.4)*	75 (15)	13 (2.6)	0.0000	0.0001
Where is the liver located in the abdomen?	224 (44.8)	227 (45.4)	49 (9.8)	0.0000	0.0001
What is the shape of the liver (3 options given)?	432 (86.4)	68 (13.6)		0.0004	0.0045
Is the pediatric age group affected by liver diseases?	367 (73.4)	19 (3.8)	114 (22.8)	0.0000	0.0000
Is the neonatal age group affected by liver diseases?	263 (52.6)	26 (5.2)	212 (42.2)	0.0000	0.0435
Symptoms of liver disease					
Yellowish discoloration of the body and the eyes	289 (57.8)	34 (6.8)	177 (35.4)	0.0000	0.0000
Abdominal distention	219 (43.8)	47 (9.4)	234 (46.8)	0.0143	0.0006
Gastrointestinal bleeding	137 (27.4)	71 (14.2)	292 (58.4)	0.0000	0.0611
Body itching	70 (14)	107 (21.4)	323 (64.6)	0.0124	0.0093
Could the following be a cause for liver disease?					
Alcohol	276 (55.2)	29 (5.8)	195 (39)	0.0000	0.0000
Smoking	222 (44.4)	50 (10)	228 (45.6)	0.0065	0.0001
Viral infection	227 (45.4)	28 (5.6)	245 (49)	0.0000	0.0007
Toxins and drugs	183 (36.6)	45 (9)	272 (54.4)	0.0291	0.0044
Schistosomiasis	176 (35.2)	38 (7.6)	286 (57.2)	0.0000	0.0000
Are all liver diseases infectious?	212 (42.4)	52 (10.4)	236 (47.2)	0.0000	0.0000
Could liver diseases be inherited?	177 (35.4)	87 (17.4)	236 (47.2)	0.0000	0.0013
Is there a vaccination for some liver diseases?	252 (50.4)	30 (6)	218 (43.6)	0.0000	0.0000
Does treatment modality available for liver diseases include:					
Drugs	284 (56.8)	25 (5)	191 (38.2)	0.0000	0.0000
Surgery for some diseases	245 (49)	32 (6.4)	223 (44.6)	0.0000	0.0000
Liver transplant for some diseases	283 (56.6)	23 (4.6)	194 (38.8)	0.0000	0.0000
No treatment	189 (37.8)	47 (9.4)	264 (52.8)	0.0000	0.0000
Is liver biopsy necessary for diagnosis of liver diseases?	45 (9)	198 (39.6)	257 (51.4)	0.0000	0.0000
What is the function of the liver?					
Synthesis of blood-clotting factors	119 (23.8)	63 (12.6)	318 (63.6)	0.0102	0.0012
Synthesis of the bile	199 (39.8)	39 (7.8)	262 (52.4)	0.0000	0.0000
Synthesis and metabolism of lipid, sugar, protein	139 (27.8)	60 (12)	301 (60.2)	0.0062	0.0000

\*The number in parentheses is the percentage value. The P-value is measured for the differences between education level 1 and 5.

the educational level the higher the probability of correct answers being given. The only category in which a significant P-value was not obtained was gastrointestinal bleeding as a symptom of liver disease. The only category in which the majority of mothers of lower educational level (education level 1) provided the correct answer was the number and shape of the liver.

### Discussion

Medical services in the Kingdom of Saudi Arabia have improved significantly over the last two decades, and health care centers are readily available to the public. Nevertheless, public awareness of the tools of modern medicine is not extensive. Folk medicine, including the use of herbs and cauterization, is widely practiced. Accurate documentation of public awareness of different diseases is of extreme importance for implementing a modern medical program in the Kingdom. This study conducted among 500 parents clearly indicates that among the majority of parents of low education, there is inadequate knowledge of the function of the liver, symptoms, causes, inheritance

and therapeutic modalities available for liver diseases (Table 1). The results were less disappointing among parents of a higher education level (education level 5).

It is apparent from this study that a broad-based education program is necessary for improving public awareness about liver diseases in the pediatric age group. This can be achieved by special TV programs, articles in newspapers, handouts, pamphlets and special nurse education programs prepared in a simple language that would emphasize the liver function, symptoms, causes of liver disease and treatment modalities available for early referral, diagnosis and ultimately, treatment of such diseases.

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