

Maternal knowledge of acute seizures

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ABSTRACT

الأهداف: تقييم مستوى معلومات الأمهات وسلوكهم أثناء حدوث حالات التشنجات العصبية الحادة.

الطريقة: أجريت دراسة مقطعية على مجموعة من الأمهات بصورة متتابعة خلال الفترة من سبتمبر 2013م إلى يناير 2014م من خلال عيادات طب أعصاب الأطفال بمستشفى جامعة الملك عبدالعزيز، جدة، المملكة العربية السعودية. وقد تم استخدام استبيان مقنن يحتوي على 30 سؤال عن الأمهات ومعلوماتهم وسلوكهم أثناء حدوث حالات التشنجات الحادة.

النتائج: تمت مقابلة 92 من الأمهات و كان 41% منهم لهم خبرة سابقة بحدوث تشنج عصبي مطول بطفلها تراوح عددها من 1-15 حالة (معدل 4.5). وقد ذكر 26% منهم أنهم لا يملكون معلومات كافية ابداً عن كيفية التعامل مع مثل هذه الحالات الطارئة. مع العلم أن الأمهات الحاصلين على درجات تعليم عالي كانت معلوماتهم أفضل من ذوات التعليم الأقل (19% مقارنة ب 11%، $p=0.02$). وقد ذكرت 10% فقط من الأمهات أنهم على علم بعلاج يعطي بالمنزل لإيقاف حالات التشنج الطارئ وفي حالة استمرار التشنج ذكرت 35% منهم أنهم سوف ينتظرون 15 دقيقة قبل أخذ الطفل لقسم الطوارئ للعلاج. معظم الأمهات (93%) ذكروا أنهم بحاجة لمعلومات إضافية بالذات الأصغر سناً (أقل من 27 عام) ($p=0.01$) والذين لم يستطيعوا الإجابة على 3 من 7 أسئلة مخصصة بالتعامل مع مثل هذه الحالات.

الخاتمة: أن معدل معلومات الأمهات وسلوكهم أثناء التشنجات الحادة بحاجة للتحسين. كثير من الأمهات يمتلكون معلومات غير دقيقة أو خاطئة ومن ثم كان سلوكهم سلبي وتعاملهم مع الحالات غير صحيح. هنالك حاجة لزيادة الوعي وللبرامج التعليمية في هذا المجال.

Objective: To study maternal knowledge -of, and behavior during acute seizures.

Methods: A cross sectional study conducted from September 2013 to January 2014 included consecutive mothers presenting at the Pediatric Neurology Clinics of King Abdulaziz University Hospital, Jeddah, Kingdom of Saudi Arabia. A structured 30-item questionnaire was designed to examine their demographics, knowledge, and behavior on acute seizures.

Results: A total of 92 mothers were interviewed and 41% witnessed at least one acute seizure in their affected child (range 1-15 years, mean 4.5). Up to 26% felt not knowledgeable at all regarding the acute care and management of seizure. Mothers with higher education (college or university degree) were more likely to feel very knowledgeable (19% versus 11%, $p=0.02$). Only 10% were aware of an antiepileptic drug that could be used at home to stop prolonged seizures, and 35% mentioned that they would wait for 15 minutes before taking the child to the emergency department. Most mothers (93%) wanted more information. Those who felt strongly regarding that (66%), were more likely to be younger (<27 years) ($p=0.01$), and have at least 3 out of 7 mismanagement decisions ($p=0.003$).

Conclusion: Maternal level of knowledge and behavior during acute seizures needs improvement. Many mothers have significant misinformation, negative behavior, and poor management practices. Increased awareness and educational programs are needed.

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Seizures are the most common pediatric neurological emergency.^{1,2} Adequate education is important for their proper identification, intervention, and management.^{3,4} Parents' behavior during an acute seizure is influenced by their knowledge and

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experience. Although parents generally feel informed about epilepsy and its management, many still have significant misconceptions and misinformation.⁵ Such misconceptions should be identified and corrected for optimal care and management. In a recent Saudi study,⁶ although most parents stated that they know what to do in an acute seizure situation, up to 14% performed unnecessary procedures, such as sprinkling water to the face, shaking, or carrying the child around. This behavior was less likely if the parents achieved college or university education. More inappropriate or potentially harmful procedures related to mythical concepts were reported from other developing countries, such as forcing liquids by mouth, pressure over body to restrain convulsive movements, or putting some object to force the teeth open.⁷ Our objectives were to study maternal knowledge -of and behavior during acute seizures, and identify correlating and contributing factors to their negative behavior and actions. These may include their personal and social experiences, as well as, their socio-economic and educational levels. These issues have received limited study in our region. We hypothesize that many families in Saudi Arabia are not properly informed on what to do during an acute seizure. Some are misinformed from unreliable sources leading to negative management decisions and practices.

Methods. A cross sectional study included consecutive mothers of children with epilepsy attending the Pediatric Neurology Outpatient Clinics of King Abdulaziz University Hospital, Jeddah, Kingdom of Saudi Arabia. The study sample was collected from September 2013 to January 2014. Only mothers of children with established epilepsy, defined as recurrent unprovoked seizures were included. A structured 30-item questionnaire was designed to examine the parent's demographics, knowledge -of and behavior during acute seizures (Table 1). Two 4-point Likert scale item was included to examine the degree of knowledge regarding acute seizure management, and whether they need more information concerning that. Response categories were very much, moderately, somewhat, or not at all. An assigned coauthor conducted the interviews in a private room, and individually assisted the mothers to complete the questionnaire during a clinic visit. The King Abdulaziz University Hospital ethics committee approved the study design and questionnaire. All included parents consented voluntarily to the study.

Data were collected in Excel sheets and statistical analysis was performed using Statistical Package for Social Sciences Version 17 (SPSS Inc, Chicago, IL, USA). Descriptive analyses were performed, and

variables were examined using chi-square test. Statistical significance will be defined as $p < 0.05$.

Results. A total of 92 mothers were interviewed. Most mothers (83%) were from the Jeddah area and 46% were Saudi Arabian nationality. Important social and demographic characteristics are summarized in Table 1. The ages of their epileptic children ranged from 1-15 years (mean 4.2). The etiology of their epilepsy was unknown in 47% of cases, and they had variable seizure frequencies ranging from daily in 16.5%, weekly in 18.5%, monthly in 17%, or less frequent in 48%. The duration of their epilepsy at the time of enrollment ranged from 6 months to 8 years (mean 1.9 years). All children were receiving antiepileptic drugs ranging in number from 1-4 (mean 2).

Thirty-eight mothers (41%) witnessed at least one prolonged acute seizure (>10 minutes) in their affected child (range 1-15, mean 4.5). Most mothers (74%) felt knowledgeable regarding their acute seizure management skills (22% very much, 24% moderately, and 28% somewhat knowledgeable). The remaining 26% felt not knowledgeable at all. Mothers with higher education (college or university degree) were more likely to feel very knowledgeable when compared with those with less education (19% versus 11%, $p=0.02$). The treating physician was the most common source of their knowledge in 44%, followed by the internet in 30%.

Table 1 - Socio-demographic characteristics of the studied families (n=92).

Demographics	Results in the study sample	
<i>Age, years mean± SD</i>		
Mother	20-48 (31±6.7)	
Father	25-74 (40±8.4)	
Child	1-15 (4.2±3.5)	
<i>Parent's education (%)</i>	<i>Fathers</i>	<i>Mothers</i>
None	(3.0)	(7.5)
School grade	(60.0)	(57.5)
College or university	(37.0)	(35.0)
<i>Parent's employment (%)</i>	<i>Fathers</i>	<i>Mothers</i>
Unemployed / house work	(10.0)	(87.0)
Labor worker	(30.5)	(2.0)
Regular / office work	(38.0)	(4.0)
Private	(18.5)	(3.0)
Professional	(3.0)	(3.0)
<i>Family's monthly income (%)</i>		
<2000 SR (530 USD)	(32.5)	
2000-5,000 (530-1330 USD)	(28.0)	
5000-10,000 (1330-2660 USD)	(23.5)	
>10,000 SR (>2660 USD)	(15.0)	

Table 2 - Important questions on acute seizure management and interventions asked from the mothers.

Questions	Positive response n (%)
I will take the child to the emergency room every time even if the seizure stops within minutes spontaneously	34 (37.0)
I will try to keep the child's mouth open with my fingers or any other object to prevent tongue biting	32 (35.0)
I will sprinkle water on the child's face to help her/him gain consciousness	30 (32.5)
I will always keep the child on her/his back	22 (24.0)
I will try to restrain the child firmly to help stop the seizure	18 (19.5)
I always shake the child to help her/him gain consciousness	16 (17.0)
I will give the child an extra dose of the oral antiepileptic drug to help stop the seizure	4 (4.0)

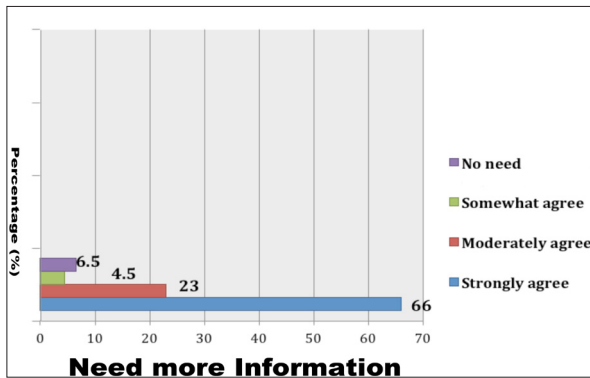


Figure 1 - Results on the Likert scale item that examined the need for more information regarding acute seizure management.

Positive answers to key acute management questions are summarized in Table 2. Several misconceptions and poor management practices were identified. In addition, only 10% were aware of an antiepileptic drug that could be used at home to stop prolonged seizures. When asked on how long they would wait before taking their acutely seizing child to the emergency department, 35% mentioned that they would wait for 15 minutes before such a consideration. Most mothers (93%) needed more information (Figure 1). Those who felt strongly about that they needed more information (66%), were more likely to be of younger age (<27 years) ($p=0.01$), and to answer positively to at least 3 out of 7 of the mismanagement questions shown in Table 2 ($p=0.003$). No other correlations were found between mother's knowledge, and other socio-demographic or economic variables.

Discussion. Our study documented that mothers of children with epilepsy are not well informed on what to do during acute seizures. They had significant misinformation, negative behavior, and poor management practices. Although many of them (41%) have experienced at least one prolonged (>10 minutes)

seizure, their level of knowledge was not strong, and 26% felt not knowledgeable at all. As expected, mothers with higher education (college or university degree) were more likely to feel very knowledgeable about acute management when compared with those with less education. Other authors have found similar associations.⁵ As well, up to 1/3 of the mothers had poor acute management decisions (Table 2) including, unnecessary emergency room visits, trying to keep the child's mouth open using their fingers, or any other object to prevent tongue biting, and sprinkling water onto the child's face thinking that this will help them regain consciousness. Furthermore, 1/3 of the mothers mentioned that they would wait for 15 minutes before considering taking their acutely seizing child to the emergency department. A lower percentage of mothers insisted on keeping the child on her/his back during the seizure, would try to physically restrain the child to help stop the seizure, or shake her/him to help them regain consciousness (Table 2). These data are alarming as most of these interventions are not only ineffective, but also potentially harmful. Similar misconceptions have been reported from other developing countries with limited educational practices.⁸⁻¹¹ We did not encounter other inappropriate, or potentially harmful procedures related to mythical concepts, such as forcing liquids by mouth, pressure over body to restrain convulsive movements, or putting some object to force the teeth open.⁷ Fortunately, only 4% of our mothers stated that they would give their seizing child an extra dose of the oral antiepileptic drug to help stop the seizure, which carries a significant risk for aspiration. This highlights the deficits in their knowledge and poor management interventions and decisions. In addition, only 10% of the included mothers were aware of an antiepileptic drug that could be used at home to stop prolonged seizures. This may be the result of their incomplete knowledge but also may reflect the management preferences of the treating physician. The overwhelming majority of the mothers needed more information (Figure 1). This

highlights their weak knowledge, but may also reflect their inability to answer some of the given questions and scenarios with certainty. Indeed, this finding correlated significantly with the number of incorrect answers on the items shown in Table 2, and also to younger maternal age (<27 years). We found no additional correlations with the other socio-demographic or economic variables, which may be the result of our relatively small study sample. Other studies have found an influence of the socio-economic grade on the awareness and interaction with seizures.¹²

There are some limitations to our study. The sample was not large enough; however, it was relatively representative of children with epilepsy with variable ages and socio-demographic backgrounds. Parent's reporting bias may have affected the results since the questions on their knowledge, and actions are predisposed to subjective judgments. We tried to overcome this problem by assigning one coauthor to personally assist all mothers in completing the questionnaire. Finally, the questionnaire is self-structured and hence has not been used or validated in previous studies.

We conclude that the level of knowledge and behavior during acute seizures needs improvement. Many mothers have significant misinformation, negative behavior, and poor management practices. Increased awareness and educational programs are needed. The internet was an important source of information (30%) in our sample. This can be used for community education and increased awareness. Parents of children with epilepsy should be targeted by educational campaigns that focus on acute seizures and their management.

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ETHICAL CONSENT

All manuscripts reporting the results of experimental investigations involving human subjects should include a statement confirming that informed consent was obtained from each subject or subject's guardian, after receiving approval of the experimental protocol by a local human ethics committee, or institutional review board. When reporting experiments on animals, authors should indicate whether the institutional and national guide for the care and use of laboratory animals was followed. Research papers not involving human or animal studies should also include a statement that approval/no objection for the study protocol was obtained from the institutional review board, or research ethics committee.