

PERCEPTIONS ON PHYSIOPATHOLOGY AND PREFERRED TREATMENT OF EPILEPSY AND ASTHMA IN THE LIMPOPO PROVINCE, SOUTH AFRICA

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ABSTRACT

The objectives of this study were to analyse perceptions of epilepsy and asthma, due to attribution of cause, suggested means of risk reduction and preferred treatment. The sample included 100 participants selected on the basis of quota sampling (10 males and 10 females from each of the five age groups: 5-10 years, 11-19, 20-34, 35-49 and 50 years and above) in a semi-urban area in the Limpopo Province, South Africa. Data were collected by a semi-structured interview in a household survey. Results show that 34% of all participants perceived the standard cause of epilepsy and 29% the suggested standard means of risk reduction, while 67% perceived the standard cause of asthma and 78% the suggested means for risk reduction. The majority of samples preferred medical treatment for both epilepsy and asthma. Concerning asthma, more men than women would consult traditional healers and other treatment, while more women than men would go for medical treatment and behaviour modification. Age group differences were only found for epilepsy: the elderly group perceived the standard cause more often than the younger group. Low levels of knowledge and misconceptions about epilepsy and to a lesser extent about asthma, call for health education.

OPSOMMING

Die doelwitte van hierdie studie was om persepsies van epilepsie en asma te analiseer na aanleiding van die toeskrywing van oorsaak, voorgestelde metodes van risikovermindering en verkose behandeling. Die steekproef het 100 deelnemers ingesluit, geselekteer op grond van kwota-steekproeftrekking (10 manlik en 10 vroulik vanuit elk van die vyf ouderdomsgroepe: 5-10 jaar, 11-19, 20-34, 35-49 en 50 jaar en ouer) in 'n semi-stedelike gebied in die Limpopo Provinsie, Suid-Afrika. Data is deur middel van 'n semi-gestruktureerde onderhoud, in 'n opname in huishoudings ingesamel. Resultate toon dat 34% van alle deelnemers die standaardoorzaak van epilepsie waargeneem het en 29% die voorgestelde standaardmetodes van risikovermindering, terwyl 67% die standaardoorzaak van asma waargeneem het en 78% die voorgestelde metodes van risikovermindering. Die oorgrote meerderheid van die steekproef het mediese behandeling vir beide epilepsie en asma verkies. Meer mans as vroue sal met tradisionele genesers konsulteer ten opsigte van asma en ander behandeling, terwyl meer vroue as mans hul vir mediese behandeling en gedragsmodifikasie sal aanmeld. Slegs vir epilepsie is daar ouderdomgroepeverskille gevind. Die ouer groep het die standaardoorzaak meer dikwels waargeneem as die jonger groep. Lae vlakke van kennis en wanopvattinge ten opsigte van epilepsie en, tot 'n mindere mate ten opsigte van asma, noodsaak gesondheidsopvoeding.

INTRODUCTION

Asthma is an important cause of ill health and it can also be life-threatening. It affects all age groups, frequently it begins at childhood and can continue throughout life. Asthma can have a significant impact on the quality of life and over time, it has been associated with varying degrees of stigma (Tilford & Smith, 1998:36). In South Africa, the prevalence rate of asthma is 6.4 % in non-urban and 6.9% in urban areas (Department of Health 1998:29-31). The goal in treatment of asthma is to enable sufferers to live an unrestricted life that is free of symptoms (Schulz, Dye, Jolicoeur, Cafferty & Watson, 1994:209). The elements of such management include appropriate anti-inflammatory and bronchodilator medication, education of care givers about the disease, home monitoring and a self management plan, for example allergen control and attention to psychosocial obstacles to treatment (British Thoracic Society and Others, 1993:S2; Bosley, Corden & Cochrane, 1996:454). Asthma is not curable. The quality of life of asthmatic children and adults can be greatly improved by appropriate management. For asthma sufferers self-management is crucial, not only in dealing with symptoms, but also in preventing asthma attacks and related complications (Hand, 1998:384).

Epilepsy is up to twice as prevalent in developing countries as in developed countries (McQueen & Swartz, 1995:859). This is explicable in part by high rates of infection, trauma and malnutrition (Danesi, 1985:184). Within the African tropics, epilepsy may not be well-controlled and the sufferer is often vilified because of beliefs in the role of witchcraft and spirits as causes of the disease and its incurability (Shaba, MacLachlan & Carr, 1993:166).

Despite advances in medical knowledge and management, persons with epilepsy face negative social attitudes and discrimination (McQueen, Swartz & Perfile, 1995:207), and there is still misinformation and misbeliefs about epilepsy (McLin & De Boer, 1995:957). Social discrimination against epileptic persons can affect the quality of life of these individuals and may have serious consequences for them (De Boer, 1995:S8).

Both diseases present similar characteristics. They are both incurable, persons suffering from either disease

are subjected to stigma and the circumstances around their illness affect their quality of life. Little is known about public perceptions of asthma and epilepsy in South Africa, which influences stigma, diagnosis, management and quality of life of such patients. *Perception* is the elaboration, interpretation and assignment of meaning to a sensory experience (Zimbardo, 1992:215). An individual's perception, in addition to numerous environmental, cultural, group, and personal factors can influence the development of health behaviour. Individuals' perceptions of benefit and costs and their perception and assessments of competing needs can influence health actions or inactions (Bruhn, 1988:77). The perception and assessment of personal risk is an important aspect of lifestyle and health behaviour (Bruhn, 1988:78). Improved understanding of perceptions, local belief and behaviour regarding asthma and epilepsy was crucial if public health programmes are to prove sustainable. Therefore, this study aims at investigating community perceptions on the perceived cause, risk reduction strategies and treatment of epilepsy and asthma as an important tool for the management of this health problem in a South African population. In addition, this study explores the education of curative methods as well as other education programmes. Furthermore, an investigation was conducted to ascertain whether public perceptions of epilepsy and asthma differed among different age groups and between males and females.

METHODS

Design and setting

In this study a cross-sectional design, quota sampling by age and sex of participants and a semi-structured interview in a household survey in the semi-urban area of Mankweng in the Limpopo Province are used.

Participants and procedure

The sample size of 100 participants was selected on the basis of quota sampling according to age and sex. Ten males and ten females were selected from each of the following age groups: children's group (age 5-10 years), teenager group (age 11-19 years), young adult group (age 20-34 years), adult group (age 35-49 years) and elderly group (age 50 years and over). This sample is not typical of the age strata in South Africa, which is

significantly weighted towards children and young adults. However, this sample facilitated a valid consideration of the health beliefs of older residents.

After randomly picking the first house to be visited, participants were identified by approaching every fourth house from the one previously approached. Any available member of a particular age group was interviewed, however, only one person per household.

A trained postgraduate research assistant conducted a semi-structured interview with the participants after permission was obtained from local authorities and participants were asked for an informed consent. In the case of a child, the parent or guardian was asked for permission and consent. Participants were assured of complete confidentiality and anonymity and were informed that they could withdraw from the interview at any time they wanted to. The interview was conducted in Northern Sotho, the first language in the Mankweng area, and it took about 15 to 20 minutes to complete.

Interview

Participants were asked the following three questions concerning each disease, following a procedure adopted from Agar, Carr, MacLachlan and Kaneka-Chilongo (1996:25):

- (1) What do you think causes epilepsy/asthma?
- (2) What do you do to reduce the chance of getting epilepsy/asthma?
- (3) What would you do to treat epilepsy/asthma if you were to (or someone in the family was to) get it?

The researcher prompted the participant, whenever it was necessary, recording such prompts and participants' responses on a pre-prepared interview sheet in Northern Sotho. Questions had been translated from English to Northern Sotho and vice versa according to scientific standard procedures.

Data analysis

Written responses were considered by two independent raters, and grouped according to physiopathology and preferred treatment. The response items were coded into: (1) causes coded to 'standard' and 'others/don't know', (2) suggested means for risk reduction coded to 'suggested standard means for risk re-

duction' and 'others/ don't know', (3) preferred treatment coded to 'medical treatment (e.g. go to doctor, clinic, hospital) together with positive behaviour modification (e.g. avoid source of allergy)' and 'traditional healer and others (e.g. go to church, faith healer)'. In the few instances where two or more distinct responses were given to a single question (e.g. alternative 'treatments' for a problem), responses were grouped together with the initial response. For each question, categories were collapsed until in excess of 80% reliability was achieved between raters. In all instances this led to the definition of two categories as illustrated in Table 3.

Gender and age differences regarding different health beliefs were analysed with Chi-Square statistics using the SPSS version 11.

RESULTS

Table 1 shows response items about the cause, the suggested means for risk reduction and the preferred treatment of epilepsy. The highest frequency of the total sample on the perceived cause of epilepsy was heredity (34%). The other response items were misconceptions about causes of epilepsy. Thirteen percent of respondents perceived the cause of epilepsy as an unspecified illness. One third (32%) of the total sample did not know of any means of risk reduction of epilepsy. The majority of the sample (72%) preferred medical treatment and 18% preferred the traditional healer. On the one hand, more than a third of every age group (ranging from 35% to 45 %) perceived heredity as a cause of epilepsy and that infants are born with the disease. On the other hand, 35% of the children's group did not know what causes epilepsy.

Table 2 shows response items about the cause, the suggested means for risk reduction and the preferred treatment of asthma. About one third (31%) of the total sample perceived heredity as a cause of asthma, followed by exposure to dust and dirty air (29%). The highest frequency for suggested means for risk reduction was avoiding dust/not playing with soil (32%), followed by going for check-ups regularly (24%). Medical treatment was the most preferred treatment for asthma in every age group, ranging from 85% to 95 %. (Table 2 is on page 74.)

Table 1: Health beliefs about epilepsy by age group (responses included more than one item per response category)

Responses	5 - 10	11 - 19	20 - 34	35 - 49	50&*	Total
CAUSE Heredity, born with it	10	40	40	35	45	34
Exposure to sun, thunder storm, wind	20	5	-	-	-	5
Too much exercise, running, walking, etc.	15	-	-	5	-	4
Hunger for long time, abdominal pain	15	5	-	-	-	4
Eat/drink dirty food/water, drink alcohol	-	5	30	-	10	9
Illness	5	10	5	-	25	13
Too much blood	-	5	15	30	30	16
Bewitched	-	10	-	30	-	8
Don't know	35	30	15	10	5	19
RISK REDUCTION Go for check up regularly	30	25	15	45	30	29
Avoid too much exercise	15	5	-	-	-	4
Avoid exposure to wind, sun, thunder storm	20	5				5
Have clean food and water, no sugar	25	15	20	-	10	10
Avoid stress and mental problems	-	5	-	-	25	6
Donate blood	-	5	-	5	-	2
Always have <i>muti</i> (medicine) to prevent	-	3	5	20	10	10
Don't know	30	35	40	30	25	32
TREATMENT Go to hospital, doctor, clinic	85	85	85	55	50	72
Go to church	10	10	-	20	-	8
Go to traditional healer and others	5	10	-	30	45	18
Positive behaviour modification, e.g. eating healthy food, regular exercise	0	0	20	-	10	6

* age 50 and over

Of the total sample, 34% attributed epilepsy and 67% asthma to the standard cause. The suggested standard means for risk reduction was only 29% for epilepsy and 78% for asthma. The majority of the sample preferred medical treatment and positive behaviour modification for both epilepsy (75%) and asthma (91%). Gender differences were analysed by using Chi-Square tests (see Table 3). Significant differences of preferred treatment for asthma between men and women (p -value = .03) were found. More men (12%) than women (2%) preferred traditional treatment for asthma, while more women (98%) than men (76%) preferred medical treatment and behaviour modification. (Table 3 is on page 75.)

Table 4 shows the summary of health beliefs by age group. (Table 4 is on page 75.)

The responses regarding health beliefs differed between the age groups as shown by Pearson Chi-Square tests. Results showed significantly different responses between age groups regarding the perceived cause, the suggested means for risk reduction and the preferred treatment of epilepsy. The elderly group had the highest perceived standard cause of epilepsy (45%). The adult group had the highest suggested standard means for risk reduction (45%). Of the elderly group 60% preferred the traditional healer and others for the treatment of epilepsy.

Table 2: Health beliefs about asthma by age group (responses included more than one item per response category)

Responses	5 - 10	11 - 19	20 – 34	35 – 49	50& *	Total
CAUSE Smoking	-	30	10	25	25	18
Dust and dirty air	30	25	30	35	25	29
Heredity	15	30	50	30	30	31
Illness (e.g. flu, pneumonia)	10	10	15	10	15	12
Allergic to pets, flowers, chemicals	25	25	15	5	-	6
Eat hot food	-	5	-	15	30	10
Alcohol	-	-	15	5	10	7
Exercise too much	5	10	10	-	-	5
Don't know	30	15	-	-	10	11
RISK REDUCTION Go for check up regularly	20	10	25	25	15	24
Avoid smoking	-	30	25	20	30	21
Avoid dust, playing with soil	25	30	35	40	30	32
Always keep body warm	10	-	10	5	-	5
Avoid source of allergy	5	5	5	-	5	4
Regular exercise	-	10	-	5	-	3
Avoid alcohol	-	-	5	10	10	5
Relax, stress reduction	-	-	-	-	10	2
Avoid hot food	-	5	10	10	30	11
Always clean body and nose	10	5	-	-	5	4
TREATMENT Go to hospital, doctor, clinic	90	90	95	85	95	91
Go to church/ traditional healer and others	10	-	-	15	10	7
Positive behaviour modification, e.g. eat healthy food, regular exercise	-	10	25	15	-	10

* age 50 and over

The other age groups preferred medical and behaviour modification as treatment for epilepsy. For asthma, no significant differences regarding health beliefs between age groups were found.

DISCUSSION

The results show insufficient knowledge about the pathophysiology of epilepsy since only about one third of the sample reported the standard cause and suggested standard means of risk reduction. All the respondents who gave a standard cause of epilepsy, mentioned heredity only and no other cause. This re-

sult was similar to a study in adult Nigerian females (Awaritefe, Long & Awaritefe, 1985:8) and rural secondary school learners in Tanzania (Matuja & Rwiza, 1994:13-18). In both studies, about 45% of the participants mentioned heredity as a cause of epilepsy. However, unlike in this South African sample, in a study of a literate urban population in Ghana (Nyame & Biritwum, 1997:140) and among secondary school learners in Nigeria (Danesi, 1994:26) 8% and 52% respectively of the participants mentioned brain damage as a cause of epilepsy. Also, in a study of attitudes towards epilepsy in a low socio-economic level population in Brazil, about 60% of the sample gave specific

Table 3: Summary of causal attribution, suggested means of risk reduction and preferred treatment of epilepsy and asthma by gender

Items	Responds	Epilepsy(%)			Asthma (%)		
		Total	Male	Female	Total	Male	Female
Cause	Standard cause	34	26	42	67	70	64
	Others/don't know	66	74	58	33	30	36
	$X^2 = 2.38$, df 1, NS				$X^2 = .71$, df 1, NS		
Risk reduction	Standard means of risk reduction	29	30	28	78	76	80
	Others/don't know	71	70	72	22	24	20
	$X^2 = .27$, df 1, NS				$X^2 = 2.57$, df 1, NS		
Treatment	Medical treatment and behaviour modification	75	76	74	93	88	98
	Traditional healer/other	25	24	26	7	12	2
	$X^2 = 3.67$, df 1, NS				$X^2 = 5.98$, df 1, p = .03		

Table 4: Summary of causal attribution, suggested means of risk reduction and preferred treatment of epilepsy and asthma by age group

Items	Epilepsy (%)					Asthma (%)				
	5-10	11-19	20-34	35-49	>50	5-10	11-19	20-34	35-49	>50
										Cause
Standard cause	10	40	40	35	45	65	70	80	60	60
Other/ don't know	90	60	60	65	55	35	30	20	40	40
	$X^2 = 11.36$ df = 4 p-value = .02					$X^2 = 1.51$ df = 4 NS				
Risk reduction										
Standard means of risk reduction	30	25	15	45	30	90	90	85	80	45
Other/ don't know	70	75	85	55	70	10	10	15	50	55
	$X^2 = 3.11$ df = 4 p-value = .04					$X^2 = .56$ df = 4 NS				
Treatment										
Medical treat. and behaviour modification	85	70	85	55	40	90	100	100	85	90
Other/ don't know	15	30	15	45	60	10	0	0	15	10
	$X^2 = 13.84$ df = 4 p-value = .01					$X^2 = 1.7$ df = 4 NS				

causes apart from heredity, such as brain disorder or nervous systems disorder (Santos, Guerreiro, Mata, Guimareas, Fernandes, Filho & Guerreiro, 1998:36). The low level of knowledge of epilepsy in this sample corresponds with findings from Gerrits (1994:S15) about Black Africa. McQueen and Swartz (1995:861-2) also identified a poor understanding of epilepsy among respondents, families and the community in a rural South African village.

For a number of participants in this current study, perceptions were based on cultural beliefs such as bewitchment as a perceived cause of epilepsy. This is similar to the results of a community survey on traditional healers in South Africa (Peltzer, 1998:195), which showed that about one third of traditional healers indicated that epilepsy was attributed to witchcraft and violation of taboos. In samples of studies conducted in Ghana, Nigeria, and Tanzania, witchcraft or evil spirits were mentioned by 4 to 28% of the respondents as a cause of epilepsy (Nyame & Biritwum, 1997:144; Danesi, 1994:26; Matuja & Rwiza, 1994:16).

The children's group in this study had the least knowledge and understanding of epilepsy. Many of them (35%) answered 'I don't know' and most of them had misconceptions such as being hungry for a long time, too much exercise and abdominal pain (50%). Consequences of these symptoms may lead to fainting which may be associated, in the understanding of the children studied, with similar symptoms of epilepsy. No other studies were found that dealt with children's understanding of epilepsy. This observation requires a further investigation.

Despite the low level of knowledge of epilepsy in this sample, the majority of the samples (72%) preferred medical treatment and positive behaviour modification. This result was higher than in an urban population in Ghana where only 45% preferred medical treatment (Nyame & Biritwum, 1997:142). Older people in this South African study tended to prefer the traditional healer and others for the treatment of epilepsy, which is similar to a study conducted in Ghana (Nyame & Biritwum, 1997:142).

Regarding asthma, this study found that the perceived standard cause and suggested standard means of risk reduction were about 70%, which was much higher

than that for epilepsy. The most commonly endorsed causes of asthma were heredity and polluted environment. These results are the same as those on perception and treatment beliefs among different ethnic groups in the United Kingdom (Tilford & Smith, 1998:37-38; Cane, Pao & McKenzie, 2001:4; Horne & Weinman, 2002:25). In addition, a study of children and young adults in Germany (Duhme, Weiland & Keil, 1998:312) found environmental pollution as a cause of asthma. In this South African study, household smoking was perceived as a risk factor of asthma in every age group, except for the young children (age five to ten years) who did not mention smoking. However, in a study on maternal and household smoking, the latter was perceived as a risk factor in childhood asthma. In Cape Town, Ehrlich, Jordaan, Du Toit, Volmink, Weinberg and Zwarenstein (1998:988-989) found that children between seven to nine years old mentioned smoking as a cause of asthma. Similarly, in a study on asthma and the home environment of low-income in the USA, 37% of urban children aged between four and twelve years, mentioned smoking as a cause of asthma (Krieger, Song, Takaro & Stout, 2000:56-57). However, in the adolescent group of this South African study 30% mentioned smoking as a cause of asthma, which was similar to findings of other studies on adolescents (in Australia: Gibson, Henry, Vimpani & Halliday, 1995:324; and in Portugal: Leiria, Cordeiro & Pinto, 1999:250).

In this South African study, some misconceptions were observed among the age groups of 5 to 34 years, for example, too much exercise can cause asthma. This may be due to the fact that one suffers from exhaustion after exercising and dyspnea/apnea from asthma. Another misconception found among this South African sample was that 'eating hot food' can cause asthma.

A few participants in this South African study perceived illnesses such as flu and pneumonia as causes of asthma. This result is similar to the study about perceived causes of asthma in Leeds City, United Kingdom, which found that a small number of participants identified pneumonia as a cause of asthma (Tilford & Smith, 1998:37-38).

The suggested means of risk reduction for asthma in this South African study was to avoid the perceived

causes of asthma. Medical treatment was the most common preferred treatment mode in this sample. Only a few preferred traditional treatment and others. More men (12%) than women (2%) preferred treatment for asthma by consulting the traditional healer and others. This may be explained by the more prevalent perception among men that by going to church or consulting a traditional healer smoking can be stopped.

CONCLUSION AND RECOMMENDATIONS

This study found that the knowledge among this South African semi-urban population of the Limpopo Province was largely insufficient with regard to misconceptions about epilepsy and to a lesser extent about asthma. This result suggests that public health education should be given about epilepsy and asthma. A majority of participants preferred medical treatment for both asthma and epilepsy. Consequently, one could enhance health education services in primary care clinics. The misconceptions found among the young population could be addressed by including health education into the formal school curriculum. These efforts could improve the management of both incurable and life-threatening diseases since relatives and friends of patients with epilepsy or asthma could improve their quality of life and ameliorate stigma towards them.

It was also found that public perceptions highlight individuals' capacity to, in particular circumstances, formulate health and disease processes with respect to alternative conceptual systems (for example biomedical or traditional). A considerable group of participants, especially older ones, reported traditional modes of causes, risk reduction and treatment for epilepsy as well as traditional treatment for asthma. This observation necessitates an effective health promotion theory and practice in the settings under study.

Further, it is suggested that a study among persons with epilepsy or asthma about their perceptions on causes, risk reduction and treatment of their conditions should be conducted. This would give an indication on how sufficient their knowledge of the disease is, since such knowledge is needed so that they could manage, control and monitor the disease by themselves.

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