

HEALTH CARE-SEEKING BEHAVIOUR FOR CHILD ILLNESSES AMONG RURAL MOTHERS IN SOUTH AFRICA: A PILOT STUDY

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SUMMARY

The aim of this study was to examine the health care-seeking behaviour of mothers when their children under five years suffer from common childhood illnesses such as diarrhoea, fever, cough and worms. The study was conducted in a rural community in the Limpopo Province of South Africa. The sample consisted of 100 rural mothers attending a clinic. The results indicated that the complaint most commonly reported was fever (95%), followed by diarrhoea (91%); worms were reported by only 25% of the mothers. The most common health care-seeking behaviour was a visit to the clinic: 79% of the mothers took their children to the clinic for coughing, 68% for fever, 50% for diarrhoea and 11% for worms. The second most common form of health care-seeking behaviour was self-care: for diarrhoea (20%) and for fever (13%); a private doctor was consulted for coughing (11%) and drug vendors were used for the treatment of worms (8%). Most mothers (76%) used home remedies for the treatment of diarrhoea and modern drugs for the treatment of fever (91%), for coughing (98%), and for worms (22%). Among mothers in the age group 31 to 49 years, 52.9% had experienced the death of a child, followed by 13.3% in the age group 15 to 19 years, and 9.8% in the age group 20 to 30 years.

OPSOMMING

Die doel van die navorsing was om moeders met siek kinders se gesondheidsgedrag na te vors. Die fokus was op die moeders se pogings om mediese hulp vir hul kinders te bekom. Die kinders in die steekproef was onder die ouderdom van vyf jaar en van 'n plattelandse gemeenskap in die Limpopo Provinsie van Suid Afrika. Die kinders het simptome van algemene kindersiektes soos diarree, koors, hoes en wurms getoon. Die steekproef het bestaan uit 100 moeders wat van die kliniekdienste gebruik maak. Die resultate dui aan dat die simptome wat meestal gerapporteer word diarree (91%), koors (95%) en wurms (25 %) is. Die oorgrote meerderheid van die moeders het hul kinders na die klinieke geneem vir koors (68%), hoes (79%), wurms (11%) en diarree (50%). Die tweede keuse vir gesondheidsorg was selfversorging: vir diarree (20%), en koors (13%). 'n Privaatpraktisyn is geraadpleeg vir hoes (11%), en vir wurms (8%) is medikasie by die apteek verkry. Die meeste moeders (76%) het tuismedisyne gebruik vir die behandeling van diarree en die meeste het moderne medisyne gebruik vir die behandeling van koors (91%), hoes (98%) en wurms (22%). Van die moeders in die ouderdomsgroep van 31-49 jaar het 52.9 % kinders aan die dood afgestaan gevolg deur die groep van 15 -19 jaar (13.3 %) en die groep van 20-30 jaar (9.8 %).

INTRODUCTION

Health care-seeking behaviour is that action taken by an individual in response to a stimulus (such as the perception of a symptom) that he or she decides is indicative of a condition needing evaluation by a health professional. This behaviour is influenced by personal, physical, and psychological characteristics and by sociocultural and environmental factors (Gilliland, Phillips, Raczyński, Smith, Cornell & Bittner, 1999:95). Health care-seeking involves a series of stages or phases, beginning with the patient becoming aware of a need and ending with medical assessment and treatment, if warranted. Delay can occur at any stage, including delay in patient care-seeking and delay in treatment once contact is made with the health care system. While structural-environmental issues may play a role in treatment delay (that is access to care, poor emergency medical service and doctor-instituted delays in diagnosis or treatment), the largest component of delay for acute problems occurs before the patient contacts the health care system (Gilliland *et al.* 1999:96). Several studies have noted that, besides inadequate availability of health care services in many areas, especially the less developing countries, certain disease-specific and non-disease-specific cultural beliefs may influence people's health care-seeking behaviour (Feyisetan, Asa & Ebigbola, 1997:221).

In South Africa, government policies have placed considerable emphasis on improving access to health care (especially primary health care) and reducing racial disparities in access to health care since 1994 (Department of Health, 1999:5). In the Limpopo Province Primary Health Care (PHC) seems underutilised, with an average PHC utilisation of an estimated 2.0 consultations/year (national goal: 3.5) (Limpopo Province Department of Health, 2001:15). Smith, Solanki and Kimmie (1999:12-19) found that factors influencing access to health care of South Africans were cost of care (travel cost, consultation cost), time cost (traveling time, waiting time), availability of health care services (new clinics in areas, days of clinic operation, hours of clinic operations), and health care access when ill.

According to a 1993 WHO report, the major causes of mortality in children under five years of age in developing countries, either as a single cause or

associated with other causes, are acute respiratory infections (34%), malnutrition (29%), diarrhoea (25%), measles (9%), and malaria (8%). The mean under-five mortality rate of sub-Saharan Africa was 256/1000 live births in 1960. It dropped to 204 in 1980 and to 177 in 1994 (Martin, 1998:103). In 1998 in the Limpopo Province, South Africa, the under-five mortality rate was 51.3/1000 (Department of Health, 1998:7) indicating a steady decline in childhood mortality. However, there may not be a direct relationship between the decline in childhood mortality and PHC services since the utilisation of PHC services is low in the Limpopo Province. This raises the question about the influence of health care-seeking behaviour and drug use in child survival. In recent years, epidemiologists and social scientists have devoted increasing attention to studying health care-seeking behaviour associated with the two leading causes of child mortality, namely diarrhoeal illness and acute respiratory infection (ARI). Yet, the knowledge about how and when families in developing countries seek treatment for these prevalent illnesses remains seriously incomplete (Goldman & Heuveline, 2000:145). No study was found investigating health care-seeking for common child illnesses among mothers in South Africa.

To investigate how mothers take care of their ailing children (and thus may contribute to the under-five mortality rate), a pilot-study was undertaken to examine mothers' health care-seeking behaviour when their children under five years of age present with common childhood illnesses. The illnesses covered in the study included diarrhoea, fever, cough and worms in a rural community in the Limpopo Province, South Africa. The goal of this pilot-study was to identify possible problems in health care-seeking behaviours for common childhood illnesses and whether or not the health interview survey would be a good method for analysing health care-seeking behaviour in South Africa.

METHOD

Design and setting

A cross-sectional survey was carried out among mothers of children aged five years and younger in the village of Eisleben (Botlokwa area) in the Limpopo Province, South Africa. The biomedical health care

services in the village, Eisleben, were one clinic and one private doctor. The services at the clinic were provided free for every user. The nearest hospital was about 30 km from the village under study.

Sample and procedure

This study was conducted among a sample of 100 rural mothers. A non-probability convenience sampling method was used to select mothers consecutively attending the clinic (taking their child for check up or because their child was sick) until a sample of 100 was reached. Inclusion criteria were: 1) mothers had to have at least one under-five year old child (of any age below five) who had suffered from either diarrhoea, fever, coughing or worms during the previous year, 2) they have to have lived in Eisleben for at least five years, and 3) they should not currently be suffering from a psychiatric illness.

Interviews were conducted in private after permission and informed informal consent had been obtained. Anonymity and confidentiality were assured. A trained research assistant conducted interviews in Northern Sotho and answers were entered into the questionnaire.

Measure

For the interview, the study used semi-structured and open-ended questions that were based on a study done among Guatemalan mothers (Van der Stuyft, Sorensen, Delgado & Bocaletti, 1996:163).

The interview schedule consisted of six major parts.

The first part sought personal data and household characteristics: age, number of children alive, ethnicity, number of years of formal education, cohabitation and living with in-laws, mother's occupation, father's occupation, and mother's income.

The second part of the interview schedule dealt with the mother's health care-seeking behaviours for their children (under five years) for the last illness episode (of diarrhoea, fever, coughing, or worms). These behaviours were 1) self-care, 2) drug vendor, 3) health services (divided into private doctor, clinic and hospital), 4) traditional healer, and 5) faith healer.

The third part was about the type of treatment used for their child's last illness episode (of diarrhoea, fever, coughing or worms). The treatment mode was categorised into four items: 1) modern drugs, 2) herbal treatment, 3) home remedies, and 4) faith healer.

In the fourth part, a question was asked about who chose the remedy for the child's illness. The response options included the self, husband/partner, parent and neighbours/friends.

In the fifth part, mothers were asked to indicate the name of the remedy and explain the effect of it, rated from 1= not very effective to 5 = very effective.

The final part of the interview schedule asked for details of the death of a child under five years, if any: in which year it had happened, how old the child was, information about symptoms and duration of illness, mother's health care-seeking behaviour, and the cause of the child's death.

The variables studied in parts one to five (socio-demographic characteristics of the mothers, treatment decision-making, health care-seeking behaviour and types of treatment used and effects) are summarised in Figure 1. (Figure 1 is on the next page.)

Data analysis

Semi-structured and open-ended answers from the mothers were translated from Northern Sotho to English and back translated using standard scientific procedures. Further analysis of the responses to the semi-structured questions was done statistically. Data gathered from the open-ended interview questions were subjected to content and thematic coding and analysis (Boyatzis, 1998:20-30).

For statistical analyses of the data, the SPSS (version 10.0) was used. Descriptive statistics were used for calculating frequencies of health care-seeking behaviours for child illnesses. Pearson Chi-square and Fisher exact test were used for comparative analysis of the socio-demographic characteristics of the mothers who had or had not had a dead child.

RESULTS

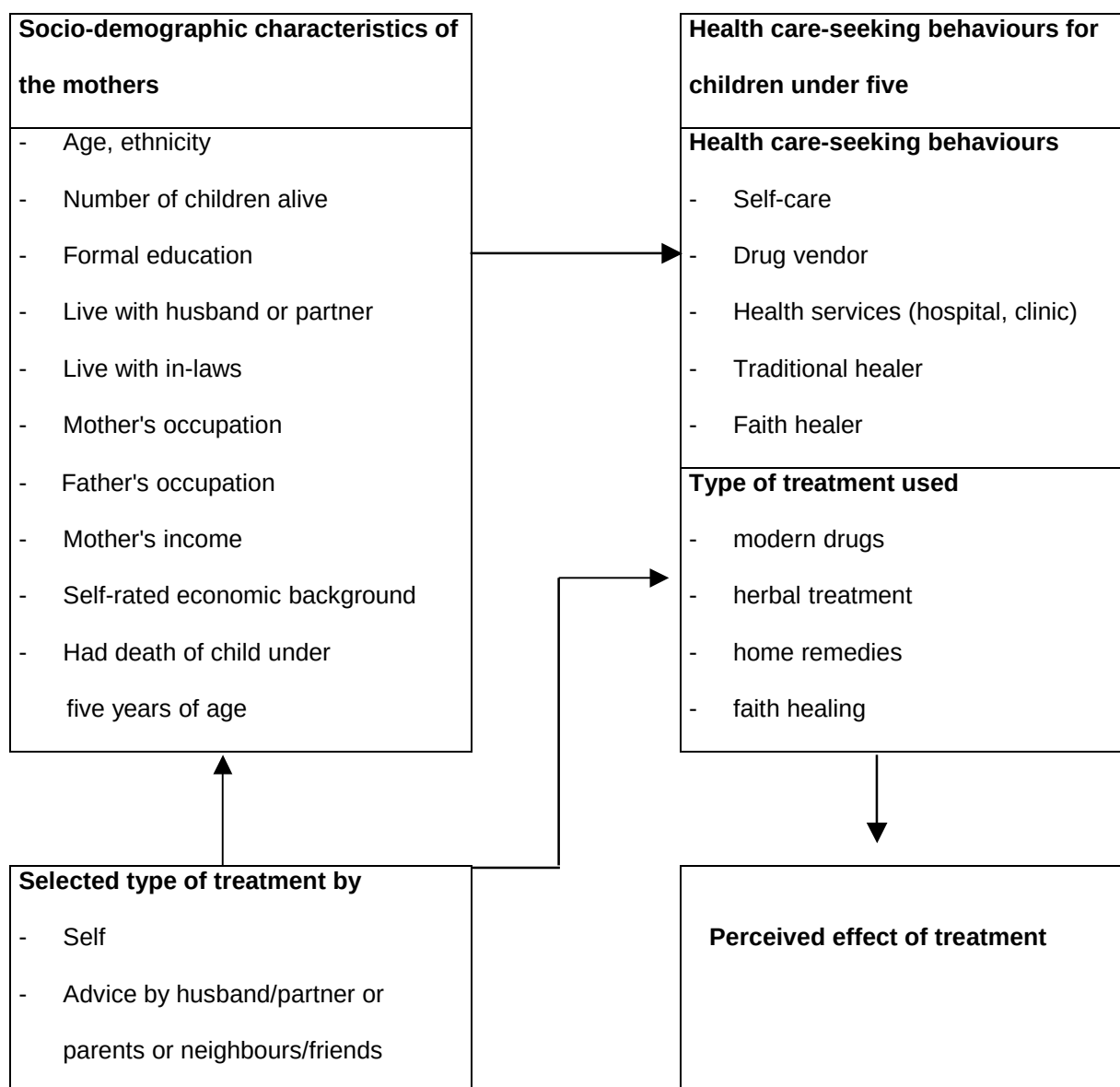


Figure 1: Different variables of the study

Personal data and household characteristics

The sample was drawn from 100 rural mothers with children under five years of age. The age of the mothers ranged from 15 to 49 years according to the following distribution: 15 to 19 years (15%), 20 to 30 (51%), and between 31 to 49 years (34%). Ninety-nine percent of the mothers were Northern Sotho and one was a Tsonga, who could clearly understand Northern Sotho. The educational level of mothers in this study was as follows: primary school 15%, secondary school 66%, and tertiary education 19%. Forty-two mothers were living with husbands or partners and 58 were single mothers. Sixty-eight mothers were unemployed, 11 were students and only 21 were employed [profession-

als (9), domestic worker (6), self-employed (6)]. However, when asked about the income, 28 % responded that they had income. The employment status of the child's father was: 51% employed, 39% unemployed, and 10 % students. The occupation of the employed fathers was: factory worker (17), business (6), teacher (6), taxi driver (6), security guard (5), police/soldier (4), and farmer (2). The mothers were asked to rate their economic family background. More than half (53%) rated themselves as "quite poor", 42% "not very well off", 4% "quite well off" and 1% "wealthy".

The number of live children that the mothers had ranged from one to seven: one child 47%, two children 24%, three children 15% and more than three children 14%.

The distance from the households of the mothers in this study to the clinic was between 1 and 5 km: about 1 km 48%, 2 km 47%, and 3 to 5 km 5%. Among the mothers in this study only 12% were members of a medical aid scheme; 88% were not.

Health care-seeking behaviours for previous illness episodes in children

All of the mothers (100%) reported that their children had experienced coughing, 89% had experienced their child having diarrhoea, 95% reported fever, and only 25% had experienced their children having worms. The majority of the mothers took their child to a clinic: for

diarrhoea (50%), fever (68%), coughing (79%), and worms (11%). The second priority of health care-seeking behaviour was self-care: for diarrhoea (20%) and for fever (13%). A private doctor was consulted for coughing (11%) and the drug vendor was used for the treatment of worms (8%). These results are summarised in Table 1.

Most mothers used modern drugs for the treatment of fever (91%), for coughing (98%), and for worms (22%). Home remedies were used by 76% for the treatment of diarrhoea. Details of the causes and the treatment for each illness are described below.

Table 1: Health care-seeking behaviours for child illnesses under 5 years of age; n = 100

Health care-seeking behaviours	Diarrhoea (%)	Fever (%)	Coughing (%)	Worms (%)
Self-care	20	2	1	1
Drug vendor	2	3	2	8
Private doctor	8	13	11	2
Clinic	50	68	79	11
Hospital	8	7	5	3
Faith healer	1	2	2	0
Total	89	95	100	25
Type of treatment used				
Modern drugs	22	91	98	22
Herbs	-	1	0	0
Home remedies	76	2	0	3
Faith healer	2	2	2	0

Diarrhoea

Causes of diarrhoea were believed to be: teething (51%), exposure to too much sun (14%), learning to talk/sit/walk (6%), germs (4%), overconsumption of milk (3%), laxative (3%), and pulsating fontanelle (2%). The types of treatment used for diarrhoea were modern

drugs (22%), home remedies (76%) and faith healer (2%). Most mothers (86%) choose the type of treatment for diarrhoea by themselves, followed by advice from a parent (10%), neighbours/friends (3%), and husband/partner (1%). The actual remedy was: Oral Rehydration Salts (ORS) "Motswako" (83%), *Phillips Milk of*

Magnesia (2%), and tea from Zion Christian Church (ZCC)/Tummy Doctor (brand name of medicine)/Panado syrup, and multivitamins (4%). The perceived effects of the treatment for diarrhoea were "very effective" (47%), "effective" (30%), "neutral" (3%), and "not effective" or "not very effective" (9%). Details of the effects of the treatments as described by the mothers are as follows: The mothers who used ORS "Motswako" for the treatment of diarrhoea most (67%) described the treatment as effective and a few (13%) as not effective as indicated hereunder.

Mothers commented about the effectiveness of the treatment as follows: *"It is very effective because it stops diarrhoea, vomiting and fever since they go hand in hand". "It has no side effects". "It strengthens the bones of the child". "It made my child look cool and energetic within the same day". "It prevents the child from being dehydrated and it works immediately after taking it".*

Comments from mothers about the ineffectiveness of the treatment are: *"It is not very effective because it takes three days to work and it also makes the child lose weight". "It's not very effective because the child continues to have diarrhoea for another three weeks".*

Comments about the mainly positive but some negative effects of various remedies for diarrhoea were as follows: *"ZCC tea is very effective because after an hour, diarrhoea and fever stops". "Tummy Doctor is very effective because after some few hours the child starts playing, and it brings appetite back". "Panado syrup makes the child better immediately". "Phillips Milk of Magnesia is not very effective because it only stops diarrhoea but not dehydration".*

Fever

Causes of fever were believed to be: flu (38%), teething (21%), diarrhoea (6%), exposure to the wind (6%), starting to sit/crawling/walking (4%), rash or sore on the body (3%), "shadow of visitors" (1%), bacterial infection (1%), and feeding porridge before bedtime (1%). The most common treatment used for fever in children was modern drugs (91%), followed by home remedies (2%), faith healer (2%) and herbs (1%). Most of the mothers (84%) chose the type of treatment for fever by themselves, followed by advice from a parent (8%), neighbours/friends (6%), and husband/partner (2%).

The actual remedies used were Panado syrup (85%), ZCC tea (2%), Buscopan, Actifed and Liquid paraffin (3%), and taking a bath (1%). From among those mothers who used modern drugs most (77%) perceived the effects of modern drug treatment as very effective, effective (19%) and neutral (4%).

Most mothers perceived Panado syrup as very effective and effective, and a few (six) mothers perceived it as neutral.

Comments from mothers about the effectiveness of the treatment are: *"It makes fever go down gradually after some few hours". "It normalises temperature and stops body pain". "It makes my baby energetic after taking it". "It makes my child sweat, and then later it becomes better". "It's very effective because it cures almost all diseases such as flu and headache".*

Comments indicating lack of faith in the effectiveness of the treatment are: *"It makes the fever go down but few hours later the fever comes back". "It only works after some days".*

Medicines like Liquid paraffin and Actifed were also accepted by mothers as very effective in rapidly reducing fever. The data also found some misconceptions: Buscopan was believed to be very effective in reducing fever from umbilical cord pain. ZCC tea was also perceived as very effective after an hour. One mother said that taking a shower was effective to stop fever and make the body temperature go down.

Cough

Cough was believed to be caused by: exposure to cold weather and dust (49%), playing with cold water (21%), teething (7%), transmitted from a family member (7%), sore throat (5%), exposure to sun (4%), coughing from birth (2%), and others (2%). Most of the mothers (89%) chose the treatment for coughing by themselves, followed by advice from a parent (8%) and husband/partner (3%).

The actual remedies are presented here in descending order of importance: Resmed children's cough mixture (64%), Junior cough mixture (16%), Panado syrup (8%), ZCC tea (2%), Broncho-dilator cough syrup (2%), Merc-co-trimoxazole pede/Betalix/Neofed/

Alcophylex, and *Cough Cod* (5%). From among the mothers (98%) who used modern drugs for the treatment of cough, 40% perceived the effects as very effective, 26% as effective, 13% as neutral, 5% as not very effective and 16% as ineffective.

The most common drug used for the treatment of cough was *Resmed children's cough mixture*, which mothers perceived as very effective in stopping fever and coughing within one day or two. However, a few mothers said that it was not very effective. Examples are: *"It's very useless because the child can finish the whole bottle without getting any better"*. *"It takes 3-4 days to work, it's not effective"*.

The *Junior cough mixture* was the second most important drug used, and perceived by the mothers as very effective because it was seen to stop both fever and coughing.

Worms

The study found that the mothers believed the causes of worms were: eating meat and chicken (32%), eating soil (16%), eating white bread (8%), not using laxatives (8%), and bile (4%). From among the mothers who treated their child for worms, 22 (88%) used modern drugs and 3 (12%) used home remedies. Most mothers (92%) chose the treatment for worms by themselves, followed by a husband or partner (4%) and a parent (4%). Treatment by modern drugs was rated as very effective by 60%, effective by 16%, not effective by 8%, and not very effective by 4%. The actual remedies for worms were: *Padax* (56%), electrolyte (8%), *White germs medicine* (8%), *Castor oil* (8%), vinegar (4%), and *Muti we nyoni* (4%). The term *muti* derives from the Zulu *umu thi*, which means tree, bush, herb, poisonous concoction or medicine (Doke & Vilakazi, 1972:793). *Muti we nyoni* is a medicine for children. A representative comment on the effectiveness of *Padax* was: *"It works the same day, because immediately after taking it, the worms die. Then the worms will come out automatically when the child goes to the toilet"*.

History of dead child

Twenty-five (25%) of the mothers had had a dead child (including abortion and stillbirth) under the age of 5 years. The duration of the illness before death

(excluding five abortions and five still births) was one week (n=12), and more than one month (n=3). The causes of death were abortion (5), still birth (5), illness (13), and in two (2) cases the mothers did not know because there were no signs or symptoms. Illnesses mentioned seem to be related to four categories (1) the digestive system such as vomiting, diarrhoea, no appetite, and sore in the stomach, (2) congenital diseases such as brain and heart problems, (3) *Lekoni* (red spots on the back of the neck) and eczema and (4) pulsating fontanelle (*Hlogwana*).

Causes of the children's death were described as follows:

Still birth

Five mothers reported stillbirth. Three attributed this to their having diabetes mellitus, abdominal pain during pregnancy, and delivering at home. *"When I was pregnant, the doctor told me that I had high blood sugar, so it was the cause of my child's death"* (32 year old). *"I never had a chance of knowing the cause, I was not sick either"* (20 year old).

Congenital diseases

"My child was born having heart problems, it was not pumping properly as it is required to do" (31 year old). *"My child was born paralyzed"* (27 year old). *"My child had a problem of jaundice. She had a big liver. The symptoms of jaundice I saw were dark yellow urine, yellow eyes and yellow skin"* (32 year old).

Lekoni

"My child was sick for about a week, she was pale on her skin and was very weak. It was Lekoni, because she had rash on the back of her neck" (43 year old).

Pulsating fontanelle

"She was suffering from a baby disease like Hlogwana. Hlogwana was the cause of my child's death. She was ill for about seven days, then she passed away" (35 year old).

Health care-seeking behaviour for the dead child

Excluding the five cases of abortion and five stillbirths, nine of the mothers took their child to hospital. Of those nine, six went to the clinic and/or private doctor first

before going to the hospital and three went straight to hospital. Three took their child to the clinic and/or private doctor. One went with her child to the Zion Christian church and two did not seek treatment as they found their child dead.

The socio-demographic characteristics of the mothers having a dead child

Table 2 shows the socio-demographic characteristics of mothers who had a dead child and those who did not have a dead child.

Table 2: Sociodemographic characteristics of mothers who had a dead child; n = 25

Sociodemographic characteristics		Total	Dead child under 5 years		Chi-square (#) or Fisher's exact test (##)(1 tailed)
		%	No(%)	Yes(%)	
Age of mother	15-19	15	13(68.6)	2(13.3)	$\chi^2 = 21.52$ df. 2 p= .000 (#)
	20-30	51	46(90.2)	5(9.8)	
	31-49	34	16(47.2)	18(52.9)	
Education level	≤ 12 years	81	59(71.8)	22(27.2)	ns (##)
	> 12 years	19	16(84.2)	3(15.8)	
Number of children alive	≤ 3	86	68(71.1)	18(20.9)	.03 (##)
	> 3	14	7(50.0)	7(50.0)	
Living with husband or partner	No	58	49(84.5)	9(15.5)	.01 (##)
	Yes	42	26(61.9)	16(38.1)	
Mother income	No	72	57(79.2)	15(20.8)	ns (##)
	Yes	28	18(64.3)	10(35.7)	
Mother occupation	Unemployed	79	61(77.2)	18(22.8)	ns (##)
	Employed	21	14(66.7)	7(33.3)	
Father occupation	Unemployed	49	40(81.6)	9(18.4)	ns (##)
	Employed	51	35(68.6)	16(31.4)	

Among mothers in the age group 31 to 49 years 52.9% had a dead child, followed by 13.3% in the age group 15 to 19 years, and 9.8% in the age group 20 to 30 years.

Older mothers had significantly more dead children than younger women. Mothers with more than three children had also significantly more dead children than mothers with three and fewer children. Mothers living with husband or partner also had more dead children

than mothers living without a husband or partner. Education, occupation and income were not found to be associated with having a dead child.

DISCUSSION

The study found that most mothers used modern treatment (clinic, private doctor, and hospital) for their children's illnesses (cough, fever, diarrhoea, and

worms) and only a few of them used a drug vendor or faith healer. The clinic was found in this study to be the major health-care provider. Two major reasons for this were that clinic services are free of charge (only 12% were members of a medical aid scheme) and are accessible, being only between one and five kilometres from the homes of the mothers. The result that only a few consulted alternative practitioners is similar to the study of health-seeking behaviour and self-treatment for common childhood symptoms in rural Guatemala (Delgado, Sorensen & Van der Stuyft, 1994:161), which found that traditional healers were hardly consulted (range: 0%-3%). In a study in rural Zimbabwe on the perceptions of childhood diarrhoea and its treatment, it was also found that utilisation rates of the formal health services were unexpectedly high with a low demand for indigenous herbalists (Zoysa, Carson, Feachem, Kirkwood, Lindsay-Smith & Loewenson, 1984:727).

The majority of the mothers in this study took their child to a clinic: for coughing (79%), fever (68%), diarrhoea (50%), and worms (11%). This finding is contrary to what Goldman and Heuveline (2000:145) found among Guatemalan mothers who were much more likely to seek out a health-care provider when a child experienced fever and gastrointestinal symptoms than when suffering from respiratory and other symptoms.

For the mothers in this study, the second priority of health care-seeking behaviour was self-care for diarrhoea and for fever. For fever, most of the mothers in this study sought care from a clinic, private doctors and hospital (88 %). This result is different to what was found in a the study of the treatment of childhood fevers and other illnesses in three rural Nigerian communities where the most common form of first-line treatment was drugs from a patent medicine vendor or drug hawker (49.6%) (Salako, Brieger, Afolabi, Umeh, Agomo, Asa, Adeneye, Nwankwo & Akinlade, 2001:230).

For cough, 95% of the mothers sought treatment from modern medical services, namely clinics, private doctors and hospitals. The economic background of the mothers was not related to health care-seeking behaviours for cough. However, in a study in the Phillipines the caretakers' financial situation and social contacts were important in their decision to seek

biomedical assistance for acute respiratory infection (McNee, Khan, Dawson, Gunsalam, Tallo, Manderson & Riley, 1995:1279)

Most mothers (76%) used home remedies for the treatment for diarrhoea and most used modern drugs for the treatment of fever (91%), coughing (98%), and worms (22%). The finding relating to the treatment of diarrhoea is similar to the study of urban-based child caretakers in Thailand. There too, the most important treatment was home care. Only 4.9% sought help from the local health centre when their children had diarrhoea (Varavithya, Vathanophas, Punyaratabandha, Sangchai, Athipanyakom, Wasi & Echeverria, 1990:307). In this study, 83% of the mothers used Oral Rehydration Salts (ORS) as treatment for diarrhoea in children, which is much higher than in a representative sample in the Limpopo Province (41.3%) (Department of Health, 1998:11). Among Nigerian mothers, only one-third reported home-treatment for diarrhoea with ORS (Omokhodion, Oyemade, Sridhar, Olaseha & Olawuyi, 1998:194). Among Guatemalan mothers, none of them reported ORS as home treatment (Delgado *et al.* 1994:161). However, from this study, about one-third of the mothers seem to lack an understanding of the role of ORS since various misconceptions about the results of ORS treatment existed such as ORS reduces fever, strengthens the bones and cures diarrhoea. This might probably come from a lack of information from the health care provider about the causes of diarrhoea, ORS, and diarrhoea treatment.

It is interesting that the mothers in this study did not report the use of antibiotic treatment for diarrhoea. Furthermore, the majority of the mothers had false perceptions about the causes of diarrhoea. It was seen as a normal feature of growth and development, namely 51% perceived teething, and 6% learning to talk/sit/walk as a cause for diarrhoea. These findings are similar to the taxonomy of diarrhoea in Thailand where diarrhoea in children under one year was generally perceived to be "su", a normal developmental stage that requires no treatment. As *su* is not considered to be diarrhoea, health messages concerning diarrhoea were not considered by caregivers. The labeling of a child with diarrhoea as having *su* resulted in a delay in help seeking, a risk factor for dehydration (Shawyer,

Bin Gani, Punufimana & Seuseu, 1996:111). The belief that growth and development in children causes diarrhoea is influenced by cultural beliefs (Feyisetan, Asa & Ebigbola, 1997:223). The findings of this and other studies indicated that informants demonstrated little understanding of the role of infection in diarrhoea, or of the role of personal and domestic hygiene for its prevention. Such awareness could potentially reduce early morbidity and mortality due to childhood diarrhoea. Recommendations: There is a need to continue to encourage mothers to use ORS, increase the knowledge and practice in mothers' management of diarrhoea at home, and cultural beliefs need to be addressed in health education campaigns.

Comparing the perceived causes of the four illnesses studied, fever, cough, and worms were seen as having a standard or biomedical cause. This was not true for diarrhoea. Growth and development in the child was perceived to be the cause of diarrhoea in 57% of the cases, followed by 25% for fever and 8% for cough. Many mothers had the misconception that worms were caused by a diet of meat or chicken. Health education should convey the understanding that undercooked or uncooked meat and chicken are likely to cause worms. Some mothers believed that their children had worms because of eating soil. Sanitation and personal hygiene were not indicated as causes of worms. However, in a study about knowledge, perceptions and behaviour of mothers toward intestinal helminths in Upper Egypt, it was found that lack of personal hygiene was often mentioned as a cause for worms (Curtale, Pezzotti, Sharbini, Al Maadat, Ingrosso, Saad & Babilie, 1998:423). The current study also indicated that mothers often do not understand the cause of the illness of their child, which may lead to improper or delayed treatment.

In this study most mothers (more than 80% for each illness studied) selected the type of treatment themselves. This result is contrary to a study by Delgado *et al.* (1994:161) among Guatemalan mothers, who generally sought help and treatment advice from an older woman in the family; they did so more often for diarrhoea (82%), followed by fever (64%), cough (43%) and worms (28%).

Regarding the cause of under-five child death, 13 mothers mentioned an illness, which could be grouped into four categories (1) the digestive system such as vomiting, diarrhoea, no appetite, and sore in the stomach, (2) congenital diseases such as brain and heart problems, (3) *Lekoni* (red spots on the back of the neck) and eczema and (4) pulsating fontanelle (*Hlogwana*). Only one mentioned that she had consulted a faith healer. The two "traditional" illnesses *Lekoni* and *Hlogwana* mentioned as cause of death are commonly treated by traditional and faith healers in the Limpopo Province (Peltzer, 1998:193, Peltzer, 1999:389).

Older mothers were found to have more dead children than younger women. Mothers with more than three children had also significantly more dead children than mothers with three and fewer children. Mothers who had children at an older age tend to have more risk pregnancies than younger mothers. Possible reasons for the above are that older mothers and mothers with four and more children are more at risk to have an abnormal or dead baby, which should be investigated further. These problems could be easily addressed by giving advice to pregnant women at antenatal clinics.

RECOMMENDATIONS

Preliminary findings suggest that government efforts to further reduce under-five morbidity and mortality in the Limpopo Province of South Africa should focus on health education interventions that address quality of home care, recognition of causes, risk involved, the importance of seeking timely medical care and on improving the quality of care provided at clinics and hospitals. The health interview survey has been found useful for analysing health care-seeking behaviour in this study. Further research should use the health interview survey on a large representative sample of children in geographically different regions in South Africa. The interview schedule should further include detailed information about the nature and timing of illness and treatment behaviour (Goldman & Heuveline, 2000:145).

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