

# Growing up in Qatif

## Child health profile of Qatif region in Eastern Province, Saudi Arabia

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نمو الأطفال في القطيف : أوضاع صحة الطفل في منطقة القطيف بالمنطقة الشرقية بالمملكة العربية السعودية

محمد الفضل بن علي المحمد صالح، وسليمان العودة السليمان، وياقر حمزة هاشم العوامي، وكنور كشن كول.

إن دراسة أوضاع صحة الأطفال تتيح نظرة متعمقة في الخصائص الديمغرافية ومعدلات المراضة والوفاة، ومواقف الناس وممارساتهم، فضلاً عن مواردهم ومدى اهتمامهم بأن يظلوا أصحاء. ومن شأن مثل هذه الدراسات أن تساعد راسمي السياسات والإداريين الصحيين على تحديد الأولويات، ووضع أهداف تعليم طب الأطفال للأطباء. غير أنه لم ينجز إلا قليل من هذه الدراسات. والبحث المعروض هنا هو جزء من عمل شامل متعدد الاختصاصات قام به فريق من الباحثين بجامعة الملك فيصل. ولقد تم جمع معطياته في سنة ١٩٨٣ من قبل عدد من طلاب الطب والفنيين والاختصاصيين الاجتماعيين المدربين.

The health profiles of children can provide an insight into demographic characteristics, morbidity and mortality, attitudes and practices, people's resources and their motivation to stay healthy. Such studies help policy planners and health administrators in establishing priorities and help in defining objectives for the paediatric education of physicians. However, such studies are scarce. This presentation is part of an integrated multidisciplinary effort by a team of investigators at King Faisal University. The data were collected by trained medical students, technicians and social workers during 1983.

### Grandir à Qatif - Profil de santé de l'enfant dans la région de Qatif (province orientale de l'Arabie saoudite)

Les profils de santé des enfants peuvent fournir des indications sur les caractéristiques démographiques, la morbidité et la mortalité, les attitudes et pratiques, les ressources des gens et leur motivation pour rester en bonne santé. Ces études permettent aux planificateurs des politiques et aux administrateurs sanitaires d'établir les priorités et de définir des objectifs pour la formation pédiatrique des médecins. Toutefois, ces études sont rares. Le présent article s'inscrit dans le cadre d'un effort pluridisciplinaire intégré engagé par une équipe de chercheurs à l'Université King Faisal. Les données ont été recueillies par des étudiants en médecine, des techniciens et des travailleurs sociaux formés à cette fin en 1983.

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## Introduction

The study presents the health profile of children living in the Qatif region of Saudi Arabia based on analysis of a survey carried out by a multidisciplinary team of investigators comprising faculty members of the King Faisal University, Dammam.

The object was to determine the demographic characteristics of the area, morbidity pattern, attitudes and practices of child rearing and the utilization of health services. Also to identify areas needing intervention in the context of the kingdom's sociocultural context and to determine the relevant areas of training needs of graduate physicians.

## Materials and methods

The study included the Qatif region, one of the seven regions of Eastern Province in the kingdom of Saudi Arabia. The town of Qatif and surrounding area of 10–15 km radius include urban, rural, and nomadic populations. The estimated population of Qatif is a little over 200 000 (1983 Census Municipal Office, Qatif), comprising the town and its 17 adjoining villages.

### Sampling and size

For the town of Qatif itself, the market place was used as the focal point from which one direction was selected randomly. In this direction, one street was randomly chosen. All dwellings on the street were included for data collection. One dwelling was selected randomly from each high-rise building on the street. For the villages (Gidah, Al Khowaildia, Al Jarodia and Anak), random samples were taken.

A total of 1 438 men and 1 506 married women were interviewed by male and female workers respectively using a structured interview. No widows or divorced people

were interviewed. The duration of the study was six months. The data included demographic and socioeconomic profiles, morbidity and mortality, and attitudes and practices relating to health of the population.

### Data analysis

Data were entered and processed in Al Khobar using the King Fahd Hospital's IBM 4331 mainframe computer running under the disk generating system/virtual storage extended (DGS/VSE) software control program, using the statistical analysis system (SAS) from the SAS Institute, Cary, North Carolina, through the Interactive Computing and Control Facility (ICCF).

## Results

Data revealed that 96.4% of the men were married. Of these about 90% had one wife and 9% had two wives. More than 52% couples were related to each other (consanguineous; cousins of all degrees). The average number of children per household was 3.7 male and 3.4 female, the overall average being 7.1 children per household.

The total population was 12 251, consisting of 1 438 households, and of this the child population 0–18 years exceeded 76%. The age breakdown of the children in the population surveyed is shown in Table 1. Of the 9 375 children between 0 and 18 years, infants comprised under 4%, preschoolers (aged 1–6 years) 23% and school-age children (up to 15 years) about 32%. About 60% in all were under 15 years. Half the households had a monthly income of under SR5 000 and about 10% had an income of SR11 000 (Saudi riyals) or more (in 1983, US\$1 = SR3.50). The remaining 40% had an income range of between SR5 000 and SR11 000. Most residential houses in Qatif are of concrete

Table 1 Age distribution of sample

Category	Age (years)	%	Total %
Infants	<1	3.9	3.9
Preschool	1-3	10.5	23.2
	4-6	12.7	
School	7-9	11.2	31.9
	10-12	10.8	
	13-15	9.9	
Youth and adult	>15	36.8	36.8
No data		4.2	4.2
<b>Total</b>			<b>100.0</b>

(51.8%), Arab pattern—made out of mud, stone and palm tree trunk (34.8%) and wooden (11.1%). Sixty four percent owned one or more cars, 90% had radios, 95% had televisions, 70% had telephones, 77% had cookers and almost all urban households had refrigerators and air-conditioning. Household accommodation averaged 5.076 rooms per household, with the majority possessing four to nine rooms. Nearly two thirds of the households had tap water and the remainder obtained their water supply by tanker or from wells. Three quarters of the households had regular toilets, about 14% used pit latrines and 1.2% had no facility. Whereas the majority did not possess animals, 5.3% of those who did kept them inside the house.

Health information was obtained by the majority from the television (81%), radio (50%), newspapers and magazines (55%; multiple responses). In about 73% of households, at least one member had visited the doctor during the most recent three months. A majority (about 80%) used services from a government health facility, but 5.7% still sought help from a traditional healer.

### Childbirth

Home deliveries were more popular in the first few pregnancies but with increasing

parity, attitudes changed in favour of hospital delivery. In all, more than 70% of deliveries were carried out in the hospital. Spontaneous vaginal deliveries exceeded 90%, forceps about 3% and operative (caesarean section) about 4%. Around 3% of primiparous women attended antenatal clinics or visited doctors for routine check-ups, and 13.2% did not seek antenatal care at all.

### Breast-feeding and other feeding

The prevalence of breast-feeding was 83% for the first child and 77% for the most recent child. The first child was breast-fed for 24 months by 33.4% of mothers and the most recent by 29.8%. Thus, first children were more often breast-fed and weaned later than subse-

Table 2 Duration of breast-feeding in months

Duration	Child %	
	first	most recent
Not recorded/applicable	18.8	47.3
1-6	14.1	8.8
7-12	15.2	5.7
13-18	15.0	5.9
19-24	36.4	31.5
>24	0.3	0.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

quent children (Table 2). About 10% of mothers did not breast-feed their babies at all. The reasons for stopping breast-feeding were weaning, onset of new pregnancy, absence of breast milk, illness, advice by others, and so on. Around 35% stopped breast-feeding their babies because of weaning. A little under 50% added semi-solids to the infant's diet between 4 and 6 months. The most popular weaning foods were fruits, meat, egg, fish, or cheese in combination with vegetables and/or fruits or cereal and fruit juice.

Table 3 Vaccination status  $n = 1\ 506$ 

Status	Child %	
	first	most recent
Not recorded/applicable	7.6	14.5
Vaccinated	63.3	76.1
Not vaccinated	29.1	9.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

### Vaccination status

Sixty three percent of first-borns and 76% of those most recently born were vaccinated while 29% first and 9.4% most recent children were not vaccinated (Table 3; the balance represented not known/applicable). All available vaccines (BCG, DPT, OPV, measles, rubella, mumps) were however given to 45.6% first-borns and 41.2% of those most recently born.

### Morbidity: acute illness

To minimize lack of recall, we enquired about illnesses occurring in the family during the two prior weeks (Table 4). During this period 35.7% of the households suffered some illness. Among children in these families, fever was the commonest problem (34%), followed by cough (20%), "pain" (12.5%) and diarrhoea (7.8%). Among the total population, out of 133 episodes of illness during the two weeks preceding the survey, the commonest problems were those of the eyes (19.5%) followed by disease under the category of "internal medicine" (18%), skin diseases (16.5%), upper respiratory illnesses (15.8%), wounds

Table 4 Distribution of episodes of illness

Type	Children		Adult %
	Female %	Male %	
Diarrhoea	2.7	5.1	1.8
Cough	8.0	12.5	7.7
Fever	18.5	15.6	6.1
Pain	8.0	4.5	13.4

(9%), allergy (6%), psychiatric (5.5%) and gynaecological (3.8%).

### Morbidity: chronic illness

Among the chronic diseases in the population (344 respondents; some with multiple complaints) the same inherited blood diseases topped the list (60%) followed by hypertension (37.8%), diabetes (24.1%), heart disease (10.4%), burns (8.8%), schistosomiasis (4.7%), tuberculosis (1.5%), cancer (0.3%). Rheumatism, allergies, asthma and other chronic illnesses totalled 18%.

Of the households surveyed about 18% had at least one member with physical handicap. The ratio of physical disability calculated was 21 per 1 000 population. Among 126 handicapped children, deafness was present in 16.7%, blindness in 39.7%, mutism in 13.5%, paralysis in 19.8%, and "limp" in 10.3%. Mentally retarded children comprised 51% of total retarded subjects.

### Status of women

Most married women ( $n = 1\ 506$ ) were between 16 and 45 years of age (82%) with a majority between 26 and 35 (31%). About 75% were illiterate and less than 2% worked outside the house. Of the 1 506 responding women around 40% were less than 14 years at marriage and about 40% between 15 and 17 years; 16.3% married between 18 and 20 years and less than 4% were over 20 years at marriage. About 50% were grand multiparae.

### Discussion

Saudi Arabia is passing through a period of rapid transition consequent to phenomenal economic growth. Nomadic populations are settling down, new townships are developing and urbanization is so rapid that currently about three quarters of the population live in towns [1]. The 1988 census revealed a popula-

tion of a little over 11 million, and the per capita GNP between 1983 and 1989 was estimated at US\$16 000 (SR58 960) per annum—one of the highest in the world. Expenditure on health per capita between 1984 and 1985 was SR1 090. In just 15 years from 1971 to 1986 the number of hospitals increased by 261%, the number of physicians by 118% and nurses by 948%! [2]. Despite this phenomenal growth, however, progress in certain areas has lagged behind, the most essential among which is the system of registration of vital health statistics. Epidemiological and demographic data are scarce, frequently inaccessible and often uncertain [3,4]. More recently (1991) the Ministry of Health published a report on child health [5] based on the National Child Health Survey (NCHS), initiated in 1986.

### **Socioeconomic background**

The Qatif region including its adjoining villages is inhabited by about 200 000 people (1983). The survey revealed a household income in the range of SR5 000–11 000 per month, about 50% earning less than SR5 000. The average monthly wage in the NCHS has been reported as SR2 978 [5] indicating that Qatif households have an income little different from the national average. By way of amenities, these households had adequate housing (about five rooms per household on average), transport, entertainment, radio and telephone. Almost all households were fitted with air-conditioners, cooking ranges and refrigerators, yet 14% had pit latrines and 1% (nomads) had no toilet facility. A quarter of the population is nomadic [6], and information relating to their present size and health conditions is scarce.

### **Literacy**

Half of men and only 26% of women in the survey were literate. Corresponding figures for adult literacy rates (1980–83) for the coun-

try were 35% for males and 12% for females [4]. From the report of the Fourth Development Plan [7] a school drop out rate of 25% at the 6th grade (12 years old) and 50% at the secondary school level has been observed. From the poor female literacy rates and early marriages the drop-out rates among females must indeed be high.

### **Marital status, age at marriage and number of children**

Among male householders, 96.4% were married. Of these 90% had one wife and 9% had two wives, the balance more. Sebai [6] reports a polygamy rate of 5% in nomadic communities compared to 17–19% in the settled and semi-settled. Lipsky's observations [8] with respect to Bedouin Arabs are similar. Among married couples 52% were related to each other before marriage (consanguineous), the spouse in most instances being a cousin. Consanguineous marriages are traditional in Saudi Arabia, and intense inbreeding is perhaps one of the reasons for the persistence of the sickle-cell gene in the population. In nearly 65% of the parents of our index cases, a close blood relationship (almost always first cousins) was observed and as such there was a higher chance of mating between two displaying sickle-cell traits with the possibility of a great number of infants inheriting blood disorders. The traditional practice may be due either to convenience, girls remaining within the family, or perhaps to economic consideration, the wealth remaining within the extended family. Child viability and survival and maternal health and mortality are influenced substantially by age at marriage, age at first birth, number of children born and birth intervals [5]. Girls were married early: less than 4% were over 20 years of age at marriage. About 40% of responding mothers in Qatif were less than 14 years at marriage and in the national survey (NCHS) 49% were reported as under 15 years at marriage [5]. Marriages are there-

fore universal, early and consanguineous with a high rate of fertility. In one Saudi community, Bhatti et al. [9] have reported a 57% prevalence of first pregnancy before the 16th birthday. There has been an upward trend in the age of marriage, by about 3 years in the most recent 15 years [5]. The average number of 7.1 children per household in the Qatif area compares well with 6.5 live births per woman reported in the NCHS [5] and by Sebai [6] in Turaba. Were it not for adequate housing and incomes, sickness and death rates would have been much higher than what they are, given the level of literacy, large family size and some traditional lifestyles.

### Age and sex

The population age structure in Qatif (Table 1) indicates a large population under 15 years old. This was 59% in the Qatif region compared with 43% in 1980 [10], 49% in 1974 in the NCHS [5] and 51% in a rural community [11]. This figure excludes the remaining few years of the adolescent age group (over 15 years), which, when included, would swell the young, growing paediatric population to over 60% of the total. The median age of the total population has been stated as 17.6 years in 1975 [12] yet a glaring deficiency exists in special health care and related welfare services for adolescents in most developing areas of the world. A fifth of the Saudi population is under 5 years [2] compared with 32.2% of the Qatif survey.

The sex ratio of the population in the past appears to have favoured males but from estimates [5] seems to be reversing in favour of females—a pattern that is desirable and observed in more advanced populations. The preference for a male child in the oriental world has put the female child at a disadvantage. The average number of female children per household was 3.4 as against 3.7 males in Qatif.

### Morbidity

In the present survey, morbidity data relate to four major symptoms recalled by parents within two weeks prior to the survey, to minimize lack of recall. These included fever, cough, "pain" and diarrhoea in that order. Among others were symptoms relating to the eyes, skin, ear, nose, and throat, etc. These reflect common infections of the upper and lower respiratory tract, gastrointestinal tract, eyes, skin and to sickle-cell trait and disease, which have a high rate of prevalence in the region [13]. These observations are in general agreement with those reported by others [14–17] based largely on hospital data in the kingdom. The National Child Health Survey [5] of the Saudi Ministry of Health reports diarrhoea as a leading cause of morbidity and mortality in children, with higher rates in the south than in the east of the country. The peak age was observed to be 6–17 months with mean duration 4.3 days; morbidity and mortality are directly related to living conditions, particularly the presence or lack of cement floors, piped water supply and flush toilets. Household size, crowding and educational differences were least related. The proportion of diarrhoea among recent illnesses (within two weeks of survey recalled by parents) in the Qatif survey was 5.1% male and 2.7% female (Table 4). As observed earlier, three quarters of Qatif households possessed flush latrines, 14% pit latrines and 1% none. Concrete houses with cement floors comprised nearly 52% of all. The lower incidence of diarrhoea in Qatif compared with other regions is therefore understandable in a general survey of this nature based on questionnaires and not accompanied by clinical examination of children.

### Handicaps

Handicaps were observed in the Qatif community largely in the form of blindness, paralysis, limp, deafness, mutism and mental retardation. The rate of physical disability was

approximately 21 per 1 000 population. Although this rate is higher than that observed in some communities in India [18], this cannot be considered representative of the whole country. Hospital statistics give a very different picture and are also not representative of the situation in the community [19]. The essential cause of blindness appeared to be trachoma rather than vitamin A deficiency, which is the leading cause in most developing countries.

### **Breast-feeding**

Breast-feeding was happily a common practice; only 10% mothers did not nurse their babies. A third of mothers prolonged breast-feeding to 24 months, and the first child was breast-fed more frequently and longer than the most recent. Malnutrition, at least in the first year of life, is therefore likely to be less frequent. This practice must be preserved at all costs.

### **Vaccination status**

The vaccination status of the infants in the Qatif community, as surveyed here in 1983, appeared to be satisfactory although there was scope for improvement. Three quarters of the most recently born infants had been vaccinated. In 1985, 76% were vaccinated [2], and two thirds of the first-born. Vaccination outreach is rapidly picking up in the kingdom and is now said to be comparable to that of industrialized countries [20].

### **Health service utilization**

A large majority of the population placed their faith in government health centres and dispensaries (about 80%). Only about 5% sought help from a traditional healer. While these facts are encouraging, the proximity to a health centre and excellence of services provided will remain major reasons for preventing the more gullible to seek advice from quacks and traditional healers.

About 20% of pregnant women preferred delivery at home during the first three pregnancies and over 11% during subsequent pregnancies. Antenatal care was sought mostly during sickness (7.8%) yet about 30% primiparous women were seen in the antenatal clinics for routine check-ups. Awareness of need-based services seemed reasonably satisfactory despite the current low level of literacy. Radio and television, among others, appeared to be responsible for this state of awareness.

With increasing literacy, particularly among women, the health status of the population is likely to improve rapidly, given its present satisfactory economic status. Age at marriage is then likely to rise more sharply and hopefully the practice of marriage between close relatives will also decline. Together, these will reduce overall perinatal and infant mortality and incidence of congenital and hereditary disorders.

In conclusion, based on the results of the present study and a review of related literature, the emerging scenario in the Saudi Arabia calls for a new look at: a) health services for infants, children and adolescents; b) the training of physicians and development of manpower in the context of the required services; and c) the direction future research should take.

The accumulated backlog of physical and mental handicap because of teenage and consanguineous marriage will demand rehabilitative, vocational and other related services. For their future prevention, marriage and genetic counselling services will be required particularly in the case of haemoglobinopathies widely prevalent in the region. Training of students, particularly interns should be at all three levels of care: primary health centres, secondary (provincial hospitals) and tertiary (large and teaching hospitals). Students will need to be exposed

during their training to ambulatory care of children and adolescents in their families and to various rehabilitative and vocational centres serving the handicapped. This will provide a full spectrum of child care, preventive, promotive, curative and rehabilitative, to the

student. Any research must begin with the collection of reliable data with respect to the epidemiological perspective, the knowledge of which at present is woefully poor. The road future research should take will be determined by the data such studies will generate.

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