

Common Diseases Presenting In Primary Health Care in Yemen: Investigation of Three Data Sources in PHC Setting

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Abstract

Background: What are the common diseases in any community? And who will decide this concept? The community the health facility registers? Or family members (parents for example) health workers from their daily observation? These questions were not yet addressed by academia or health professionals in Yemen.

Aim: to assess the common diseases in PHC urban settings in Mukalla city in Hadramout at Eastern Yemen.

Methodology: A cross sectional study was conducted in Mukalla city in Yemen in 8 PHC centers. Three data sources were investigated in this study. A questionnaire and checklist were prepared to collected data by trained medical students. All health workers in the PHC centers were interviewed and 240 family members were interviewed as well as author's review the patient registers of the selected centers for one month before the study.

Results: A total of 17 diseases were identified as common diseases in PHC out of them six diseases were identified from all the three sources, they are: Fever, respiratory tract infection, diarrhea, hypertension, DM and Tonsillitis & Pharyngitis, in group two only GIT problems identified in two data sources while another 10 diseases identified in at least one source. Diarrhea, respiratory tract infections and fever are the most common diseases among children under 5 years of age that were reported both by community members and health workers. Both family members and health workers reported hypertension as the first common disease in male adults while family members reported fever (31%) as a second common diseases followed by DM (21%). Health workers reported that the second common diseases in male adults is DM (50%) followed by fever (47%).

Conclusion: A total of 17 diseases were identified as the common diseases presented in primary health care settings in Mukalla city.

Keywords: Common diseases; PHC; Mukalla

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Introduction

World Health Organization (WHO) in 1948 defined health as a state of complete physical, mental and social wellbeing and not merely absence of disease or infirmity [1,2] Primary health care may be defined as:

Essential Health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the country and community can afford [2,3]. PHC is for all especially the needy. Regardless of social and economic status every individual in the nation must have access to good health care. That means PHC is the first level of contact of individual, family and community with health system. It is most effective and close to the people. PHC addresses the main health problems of the community,

providing pro motive, preventive, curative, supportive and rehabilitative services accordingly one of the main elements of PHC is Treatment of common diseases and injuries.

What are the common diseases in any community? And who will decide this concept? The community the health facility registers? Or family members (parents for example) health workers from their daily observation? These questions were not yet addressed by academia or health professionals in Yemen. In 1995 Adib et al try to assess the common diseases at primary health care level in Lebanon; Data were drawn from 23 PHC centers in various regions of Lebanon, in addition to an 8-year review of the experience of the Department of Family Medicine at the American University Hospital. In general, 46% of all visits to PHC centers did not include any kind of diagnosis. Most centers provided data on large categories of diseases without breakdown into specific entities [4]. This is part of challenges to address the

common diseases at community level. In Yemen the situation may more badly than in Lebanon. The health system including PHC in Yemen is weak especially the health information system. In 2010; A collaborative team from Hadramout University College Of medicine and office of the ministry of public health and population in Hadramout developed a research team with the aim to assess the common diseases in PHC urban settings in Mukalla city in Hadramout at Eastern Yemen within the context of the local efforts of evaluation the PHC services in Mukalla city. This paper describes a part of the study that focused on the common diseases in PHC setting in Mukalla city.

Methodology

A cross sectional study was conducted in Mukalla city (The capital of Hadramout province at eastern of Yemen). The total population of the city in 2010 was 235,866 which constituted 33% of the total population of the 13 districts at coastal area of Hadramout. In Mukalla there are two tertiary hospitals and one University hospital and 22 PHC centers. Eight PHC centers were selected randomly for the purpose of this study. Three data sources were identified to collect valid data about the common diseases presented at PHC level. A questionnaire and checklist were prepared to collected data by trained medical students. All health workers in the PHC centers were interviewed (first data source) and 240 family members were interviewed as a second data source (random selection of 30 houses from the catchment area of the selected 8 PHC centers). Patient registers in PHC centers is the third source used.

Results

In this study the research team investigated three sources to identify the common diseases at PHC setting in urban areas of Mukalla city; these sources are: PHC registers, health workers in PHC facilities and the family members at their houses. (Table 1) presented the top 10 common diseases reported in PHC registers. The top of these diseases are: Respiratory tract infection (20.5%) followed by diarrhea (12.5%) and fever (9%). This analysis reflects the proportion of diseases reported regardless of age group or gender.

Table 1: The top common diseases reported in PHC centers in Mukalla one month before the survey. 2010.

Common diseases	No	%
Respiratory tract infection	119	20.5%
Diarrhea	73	12.5%
Fever	51	9%
Injuries & accidents	41	7%
Tonsillitis & Pharyngitis	37	6.5%
Hypertension	30	5%
Skin diseases	13	2%
DM	9	1.5%
Eye diseases	5	1%
Typhoid	4	1%
Others	201	35%
Total	583	100%

Diarrhea, respiratory tract infections and fever are the most common diseases among children under 5 years of age that were reported both by community members and health workers of PHC institutions, the variations is only on the prioritization of these problems, community members consider fever is the most common (62%) while health workers consider diarrhea is the first problem (93%). The variations are clear in the other diseases as community members reported influenza (15.4%) and parasitic infections (5.4%) followed by anemia (4.6%) and tonsillitis (4.6%) while health workers reported anemia (13%) and tonsillitis (10%) followed by bronchial asthma (7%) (Table 2).

Table 2: Common diseases among children under 5 years in Mukalla from community and health workers opinions.

Common diseases	Community members (n =240)		Health workers (n = 30)	
	No	%	No	%
Respiratory tract infection	104	43%	24	80%
Diarrhea	139	58%	28	93%
Fever	148	62%	17	57%
Anemia	11	4.6%	4	13%
Tonsillitis & Pharyngitis	11	4.6%	3	10%
Influenza	37	15.4%	1	3%
Parasitic infection	13	5.4%	1	3%
Skin diseases	8	3.3%	0	0%
GIT disturbances	7	3%	0	0%
Chickenpox	6	2.5%	0	0%
Jaundice	6	2.5%	0	0%
Measles	3	1.3%	0	0%
Ear infection	2	1%	0	0%
Eye diseases	2	1%	0	0%
Others	4	1.6%	0	0%
Bronchial asthma	0	0%	2	7%
Malnutrition	0	0%	1	3%
Injuries & accidents	0	0%	1	3%

Regarding the age group (5-15 years); there are consistency in reporting the most common diseases by community members and health workers as fever, tonsillitis, respiratory tract infection and diarrhea (Table 3). Both family members and health workers reported hypertension as the first common disease in male adults while family, members reported fever (31%) as a second common diseases followed by DM (21%). Health workers reported that the second common diseases in male adults is DM (50%) followed by fever (47%) (Table 4). Unfortunately family members identified renal stones and infections is the most common diseases in female adults (21.6%) followed by hypertension and fever (21.3%) while health workers reported hypertension (57%) as the first common disease in female adults followed by DM (37%) and pregnancy related problems (33%) (Table 5).

Table 3: Common diseases among children 5 -15 years old in Mukalla form community and health workers opinions.

Common diseases	Community members (n =240)		Health workers (n = 30)	
	No	%	No	%
Fever	137	57%	23	77%
Tonsillitis & Pharyngitis	73	30%	16	53%
Respiratory tract infection	69	29%	19	63%
Diarrhea	54	22.5%	13	43%
Influenza	53	22%	3	10%
GIT disturbances	16	6.7%	0	0%
Parasitic infection	14	5.8%	0	0%
Bronchial asthma	7	3%	0	0%
Skin diseases	5	2%	4	13%
Eye diseases	5	2%	0	0%
Anemia	4	1.7%	4	13%
Others	20	8.3%	4	13%

Table 4: Common diseases among male adults at age >15 years in Mukalla reported by community and health workers opinions.

Common diseases	Community members (n =240)		Health workers (n = 30)	
	No	%	No	%
Hypertension	74	31%	22	73%
Fever	74	31%	14	47%
DM	51	21%	15	50%
Respiratory tract infection	50	20.8%	5	17%
Influenza	36	15%	0	0%
GIT disturbances	30	12.5%	3	10%
Headache	28	11.6%	0	0%
Tonsillitis & Pharyngitis	13	5.4%	4	13%
Arthritis	8	3.3%	4	13%
Diarrhea	11	4.6%	2	5%
Anemia	0	0%	3	10%
Typhoid	0	0%	3	10%
Bronchial asthma	3	1.3%	0	0%
Renal stones & infection	10	4.2%	0	0%
Parasite infection	12	5%	0	0%
Goiter	6	2.5%	0	0%
Eye diseases	4	1.6%	0	0%
Heart diseases	3	1.3%	0	0%
Prostate problems	3	1.3%	0	0%
Others	7	3%	5	17%

Table 5: Common diseases among female adults at age >15 years in Mukalla from community and health workers opinions.

Common diseases	Community members (n =240)		Health workers (n = 30)	
	No	%	No	%
Hypertension	51	21.3%	17	57%
DM	40	16.7%	11	37%
Fever	51	21.3%	9	30%
Pregnancy related problems	28	11.7%	10	33%
Renal stones & infection	52	21.6%	5	17%
Respiratory tract infection	25	10.4%	7	23%
Tonsillitis & Pharyngitis	19	8%	1	3.3%
GIT disturbances	26	10.8%	3	10%
Influenza	34	14%	0	0%
Arthritis	11	4.6%	2	7%
Headache	25	10.4%	0	0%

Diarrhea	16	6.6%	2	7%
Parasitic infection	8	3.3%	0	0%
Eye diseases	6	2.5%	0	0%
Heart diseases	3	1.3%	0	0%
Bronchial asthma	2	0.8%	0	0%
Anemia	1	0.4%	3	10%
Others	29	12%	7	23%

Table 6: Common diseases in PHC level: comparison of the obtained data from the three sources.

PHC facility register (n=583 patients)	Community (n= 240 family members)	Health workers (n=30 health workers)
Respiratory tract infection (20.5%)	Fever (42.7%)	Fever (52.75%)
Diarrhea (12.5%)	Respiratory tract infection (26%)	Respiratory tract infection (45.75%)
Fever (9%)	Influenza (16.6%)	Diarrhea (52.75%)
Injuries & accidents (7%)	Diarrhea (16.5%)	Hypertension (32.5%)
Tonsillitis & Pharyngitis (6.5%)	Hypertension (13%)	DM (21.75%)
Hypertension (5%)	Tonsillitis & Pharyngitis (12%)	Tonsillitis & Pharyngitis (19.83%)
Skin diseases (2%)	DM	Anemia (11.5%)
DM (1.5%)	GIT disturbances (8.3%)	Pregnancy related problems (8.25%)
Eye diseases (1%)	Renal stones & infection (6.5%)	GIT disturbances (8.3%)
Typhoid (1%)	Headache (5.5%)	Arthritis (5%)

Common diseases in PHC level: comparison of the obtained data from the three sources

(Table 6) presented the top 10 common diseases reported in the three data sources; there is consistency in six diseases that are reported in all the sources: Fever, respiratory tract infection, diarrhea, hypertension, DM and Tonsillitis & Pharyngitis. According to Table 6; the common diseases were re-categorized into three groups: the first group is common diseases identified in all the three sources, second group are common diseases identified by either two sources, and the third group includes the common diseases identified by only one source (Table 7).

Table 7: Prioritization of the common diseases/problems in PHC level in Mukalla/Yemen 2010.

Groups of priority common diseases	Diseases
First group of priority diseases (6 diseases)	Fever
	Respiratory tract infection (20.5%)
	Diarrhea
	Hypertension
	DM
Second group of priority diseases (only one diseases)	Tonsillitis & Pharyngitis
	GIT disturbances
Third group of priority diseases (10 diseases)	Influenza
	Anemia
	Pregnancy related problems

	Injuries & accidents
	Renal stones & infection
	Headache
	Arthritis
	Skin diseases
	Eye diseases
	Typhoid

Discussion

The analysis of data from the PHC registers identified that the top of these diseases are: Respiratory tract infection (20.5%) followed by diarrhea (12.5%) and fever (9%) regardless to age group and gender. The Yemen annual statistical report of 2013 reported that a total of 266386 patients attending the health facilities in Hadramout coastal districts with different diagnosis [5]; half of theses diagnosis was about 16 diseases consistent with what was reported in this study except fever, because fever was reported through more than one specific diagnosis. In recent years dengue fever is identified as an endemic problem reported in Hadramout Coast districts especially in Mukalla where facing several epidemics [6,7].

Authors of this study be able to use three data sources to compare the common diseases reported in the PHC facility register, the perception of health workers from their daily observation and the reporting of family members especially mothers or father, a total of 17 common diseases were reported from all these resources, six diseases were identified from all

these three sources, they are: Fever, respiratory tract infection, diarrhea, hypertension, DM and Tonsillitis & Pharyngitis, in group two only GIT problems identified in two data sources while another 10 diseases identified in at least one source. In Lebanon; the most commonly identified health problems were hypertension, diabetes and asthma, in addition to eye and ear diseases, cardiologic conditions, and dermatologic problems [4]. Moreover, either planning for health services or planning an education program in primary health care should take in consideration the priority diseases identified in this study. To be more specific; it should focus on the common diseases by age group and gender.

Respiratory tract infections, fever and diarrhea are the most common diseases in children under 5 years were identified in this study followed by influenza, tonsillitis, anemia and bronchial asthma. The demographic and health survey (DHS 2013) of Yemen reported that 12% of children under age 5 experienced symptoms of an acute respiratory infection (ARI), fever (24%) and diarrhea (31%) in the two weeks preceding the survey [8]. Al-Eissa EI in 2000 reported that upper respiratory tract infection constituted 43% of adolescent complaints in PHC in Saudi Arabia and two hundred and seventy adolescents have a chronic illness i.e. 18% of the study sample, bronchial asthma being the most common at 10% [9]. Even in developed countries respiratory tract infection is a common problem in children under 5 years; respiratory tract infections (RTIs) are the most frequent reason for general practice presentation in Australia and it is a major cause of morbidity, with young children (<5 years) [10]. Fever is frequently reported in PHC; fever is one of the most common reasons why children are brought to the doctor or to the hospital for out-of-hours medical advice [11]. (Globally, more than 10 million children die each year, of which approximately 1.5 million die from diarrhea. In 2003, 390,520 cases of diarrhea were reported to the Central Statistics Office (CSO) of Yemen, with 7395 of these cases from the Hadhramaut governorate [12]. Fever is identified in this study as a common problem in both male and female adults beside Diabetes mellitus (DM) and hypertension. Diabetes mellitus (DM) and hypertension (HTN) have emerged as major medical and public health issues worldwide [13] in 2008 the Burden of Metabolic Risk Factors of Chronic Diseases Study conducted in 199 countries worldwide to assess the national, regional, and global trends in diabetes reported that the age-standardized adult diabetes prevalence was 9.8% in men and 9.2% in women [14]. Hypertension is responsible for approximately 12% of consultations in primary care [15]. Even young adults may in concern of hypertension; In USA among young adults (18–39 years), approximately 20% of men and 15% of women have diagnosed hypertension, with an expected increase in prevalence due to high obesity rates [16] and may physician in primary care do not expect this problem in young adults and ignore to investigate them. Johnson et al (2014) concluded in their study in USA that young adults, even with regular primary care use, have a significantly slower rate of

receiving an initial hypertension diagnosis than middle-aged and older adults, Multiple factors contribute to poor hypertension diagnosis rates among young adults. Primary care interventions, tailored to young adults, are needed to improve hypertension control rates [17]. In Yemen the prevalence of hypertension in one community based study was 12.8% with prevalence of 1.5%–4% in young adults at age 15–34 years to 23%–26.8 in adults (45–69 years) while it is more higher in female than male adults [18].

The other common diseases identified in PHC settings by this study are: GIT disturbances, Influenza, anemia, pregnancy related problems, injuries and accidents, renal stones and infection, headache, arthritis, skin diseases, eye diseases and typhoid. Anemia is reported elsewhere as a common problem identified at PHC level [19], especially among pregnant women [20] and children [21] GIT and headache are common presentation in primary health care in different countries [22,23] while urinary tract infections are the second most common infections, causing considerable anxiety and morbidity in women [24].

Conclusions

In this study 17 diseases were identified as the common diseases presented in primary health care settings. Planning for health services or educational purposes should take in consideration these diseases with concern on age and gender related epidemiology.

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