

RESEARCH ARTICLE

MOTHERS KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING ACUTE RESPIRATORY INFECTION IN CHILDREN UNDER FIVE YEARS/ URBAN AND RURAL AREAS - AL MUKALLA CITY-2022Maysa Saeed Al-Noban^{1,*}, Mustafa Khidir Elnimeiri²¹ Dept. of Public Health and Community Medicine, Faculty of Medicine and Health sciences. Aden University, Yemen² Dept. of Community Medicine, Al Neelain University, Khartoum, Republic of Sudan

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Abstract

Management and prevention of acute respiratory tract infections are directly linked to the mother's knowledge and attitude, which can be translated into practice and employed as a disease prevention intervention.

A community-based cross-sectional study was conducted in the urban and rural area locality in Al Mukalla, Hadhramout Governorate/ Yemen. Five hundred eighty-one mothers were selected randomly used Random Walk Method who had a child aged <5 years. Data were collected using a pre-tested interviewer-administered questionnaire. SPSS version 20 was used for data entry and analysis.

In a study of 581 mothers, 52.3 % of urban mothers were knowledgeable of ARI. About a third of mothers were knowledgeable that chest indrawing and rapid breathing are dangerous signs of infection, and this knowledge was high among urban mothers. In relation of mothers' attitudes about antibiotic use, positive attitudes were found to be prevalent among urban mothers (78.4%), while negative attitudes were prevalent among rural mothers (88.7 %). Urban mothers were more likely to use antibiotics without a prescription and to not complete the course (59 % and 57.7%, respectively), whereas rural mothers were more likely to use home remedies (61.3 %).

The study reveals good knowledge and positive attitude among urban mothers towards ARI than rural mothers, but this good knowledge did not translate into good practice towards use of antibiotics by rational way.

Keywords: Acute respiratory tract infections, Attitude, Knowledge, Mothers, Practice, Urban, Rural.**1. Introduction:**

Acute respiratory infections (ARI) are particularly common in preschool children and is one of the major causes of morbidity and mortality among them, and the main reason for children's use of health services and makes a burden on the healthcare system (frequent medical consultations, hospitalizations, and antibiotic prescriptions), as well as make a significant economic burden. Their incidence is often difficult to estimate because ARIs are typically treated in outpatient settings and the majority of available epidemiological data are collected in hospital settings and are referred to as the most severe respiratory illness. Controlling it is a major

public health challenge, particularly in developing countries [1-3].

A systematic review of children with acute respiratory infection and pneumonia found that one third of mothers do not receive ARI care for their children under five years of age. Gelssetzer identified issues such as location, cost of care, understanding of disease seriousness and gender mediated actions seeking care [4]. Other obstacles to childhood pneumonia include poor health care services and unavailability of drugs in public health facilities [5]. Untreated ARI infections often lead to pneumonia, especially in LMICs remain the major leading infectious cause of death among children under five years and responsible on one fifth of all death in the

world. Despite the introduction of case management guidelines and the development of new preventive strategies including effective vaccine, pneumonia accounts for almost 19% of all deaths in children under five years of age with 70% occurring in Sub-Saharan Africa and South-East Asia [6-8].

Signs present in pneumonia are very similar to those of common cold and fever, and lack of maternal understanding of the proper signs and symptoms of ARI in general and pneumonia in particular is the explanation why they do not bring the child to the hospital early for care. Similar findings were recorded in India [9], and Pakistan [10], whereby majority of mothers had poor knowledge about pneumonia signs and symptoms, while in another study [11], most mothers correctly knew signs and symptoms of pneumonia. However, it is very difficult to reach health care facilities in these regions, as these rural and poor children have raised their chances of dying before the age of five relative to their wealthy and urban peers [12]. Abusaad et al (2014), documented among 160 mothers of under five children in Saudi Arabia whereby 64.3% had a fair perception of childhood pneumonia while 20.7% good perception and 15% had a poor perception [13].

Concerning the antibiotics. The mother's knowledge has a significant impact on its use during their children's disease. A study showed that the mother's knowledge of antibiotics in urban areas compared to rural areas is significantly associated to its side effects. This is due to the fact of incorrect perception about antibiotics being prevalent among rural mothers [14]. Studies in KSA revealed deficiency in knowledge among mothers regarding antibiotics and physician's consultation [15,16]. The contrary of what has been said during the preceding Indian research, where mothers had enough knowledge of consulting a doctor whenever her children have ARI [17].

Maternal negative attitude to use of antibiotics indicates the misconception about its use of antibiotics, the benefits of it for illness, and do not know the efficacy of drugs that could be detrimental to children's health without medical prescription. mothers used antibiotics in Jordan for treating their children with ARI although not prescribed by a doctor [18]. In comparison to this study, Bahm S Q et al recorded low antibiotic use among mothers interviewed in Pakistan, indicating strong maternal understanding of this important issue [19]. In contrast to this study Chan et.al reported 29% of mothers agreed that antibiotics were required whenever URTI occurs [20].

In Asian and African countries studies have shown that home remedies are being used, affected by cultural practices, elderly advice at home, past experiences of illness recovery and weakened mother's decision-making capacity [21-23]. Nearly half of the Multan

mothers did not seek medical assistance to diagnose their children with pneumonia, only less than a third of the them visited a trained physicist because of their beliefs and attitudes. Nevertheless, less than 5% of mothers in India have used home remedies [24].

No exact figures on mortality or morbidity are available in Yemen as well as in Al- Mukalla which has different in its administrative division as an urban and tribe (rural) societies, in addition; inadequate infrastructures, and the health system show some suffering due to shortages of resources and improper planning, which are adversely reflected on the health of children. Thus, the knowledge, attitude and practices of mothers towards acute respiratory tract infection (ARI) needed evaluation so researchers endeavored to get base line data for better understanding of the magnitude of problem, and how the this maternal KAP could be affecting on it.

2. Methods:

A community-based cross-sectional study was conducted in the urban and rural area locality in Al Mukalla, Hadhramout Governorate/ Yemen from August- November 2019. Study population is mothers having at least one child age 0-59 months and live in urban or rural area, while excludes mothers with serious mental problems, have hearing and speaking difficulties or children under the care of anyone other than their mothers (baby sitters, friends, etc.). After taken verbal informed consent from mothers for an interview, the calculated sample size was five hundred eighty-one mothers selected randomly used Random Walk Method the approximate center of the community determined and streets leading out from that point were numbering. The order in which the streets were sampled is determined by randomly drawing numbers from an envelope, all houses on each street are approaches to inquire as to whether mothers within inclusion criteria.

Questionnaire was adapted and modified from multiple indicator cluster survey for children under five years to collect data on the knowledges, attitude and practice of mothers about ARI. Pretest was done on 5% of sample out of non-sampling areas, and necessary correction was made on the clarity of language, the sequence and work ability of questionnaire. Based on findings of the pretest, the questionnaire was modified. Orientation was given for supervisors and data collectors. Use SPSS software package version 20 for data entering and for further analysis after check for its completeness. Data was cleaning by running simple frequency after data entry for its consistency then printing frequencies are using to check for outlier and clean data. The results of this research were analyzed, summarized, univariate, and data distributions explored used frequencies and percentages. Level of knowledge and practice was classified as good, fair, and poor based on the score get

by the responses to the questions (those who answer correctly for all knowledge question considered had good knowledge, those who answered correctly on two third of questions considered had fair knowledge, while those answered correctly on one third of questions considers

had poor knowledge). Regards attitude, those who answered correctly on all questions or $\geq 50\%$ of them considered had positive attitude, while those who answered correctly $<50\%$ of questions considered had negative attitude.

3. Results:

Table (1): Distribution of Socio-demographic Characteristics of Mothers by Area of Residency.

Characteristics		Urban No (%)	Rural No (%)	*Total No (%)
Age of mothers/ years (mean age 39.26± 23.252)	<20	1 (6.7)	14 (93.3)	15 (2.6)
	20-29	122 (56.7)	93 (43.3)	215 (37)
	30-39	132 (46.5)	152 (53.5)	284 (48.9)
	≥ 40	35 (52.2)	32 (47.8)	67 (11.5)
Educational level	Illiterate	41 (39.4)	63 (60.6)	104 (18)
	Primary education	138 (53.7)	119 (46.3)	257 (44.2)
	Secondary school	87 (50.9)	84 (49.1)	171 (29.4)
	University education	24 (49)	25 (51)	49 (8.4)
Mother's Occupation	Work	58 (62.4)	35 (37.6)	93 (16)
	Not work	232 (47.5)	88 (52.5)	488 (84)
Marital status	Married	277 (48.9)	282 (51.1)	566 (96.2)
	Divorced	5 (55.6)	4 (44.4)	9 (1.5)
	Separated but not divorced	3 (60)	2 (40)	5 (0.9)
	Widowed	5 (62.5)	3 (37.5)	8 (1.4)

Note: * percentage taken from total number of mothers (581)

In table (1), the mean age of 581 studied mothers was 39.26 ± 23.252 . The majority of mothers (48.9%) were in age group of 30-39 years old. Regarding the education,

44.2% had primary education. A high proportion of mothers did not work (84%) and vast majority (96.25) of them were married.

Table (2): Mother's knowledge about Acute Respiratory Infection

Knowledge		Urban No (%)	Rural No (%)	*Total No (%)
Knowledge about ARI	Yes	267(52.3)	244 (47.7)	511(87.9)
	No	23 (32.8)	47 (67.2)	70 (12.1)
The cause of ARI (511 mothers)	Cold	143 (59.8)	96 (40.2)	239 (46.8)
	Spread from others	9 (42.9)	12 (57.1)	21 (4.1)
	Germes	43 (75.4)	14 (24.6)	57 (11.2)
	Change in the climate	10 (20)	40 (80)	50 (9.8)
	Passive smoking	20 (71.4)	8 (28.6)	28 (5.5)
	Dust	37 (48.1)	40 (51.9)	77 (15)
	I don't know	5 (12.8)	34 (87.2)	39 (7.6)
Prevents of AR (511mothers)	EBF	5 (71.4)	2 (28.6)	7 (1.4)
	Avoidance of cold	204 (48.7)	215 (51.3)	419 (81.9)
	Avoidance of passive smoking	19 (70.4)	8 (29.6)	27 (5.3)
	Good ventilation	29 (74.4)	10 (25.6)	39 (7.6)
	vaccination	5 (71.4)	2 (28.6)	7 (1.4)
	I don't know	5 (41.7)	7 (58.3)	12 (2.4)

Note: Percentage taken from total of mothers (581)

Regarding mother's knowledge of ARI, 52.3% of urban mothers knew ARI, knew germs were the main cause (75.4%), and good ventilation can prevent from it

(74.4%). 47.7% of Rural mothers knew about ARI, 87.2% did not know the cause, and 58.3% did not know have any idea on its prevention. (Table 2)

Table (3): Mother's knowledge about to Pneumonia and Preventive Measures.

Mother's Knowledge about Pneumonia		Urban No (%)	Rural No (%)	Total No (%)
Knowledge about pneumonia	Yes	134 (74.9)	45 (25.1)	179 (30.8)
	No	156 (38.8)	246 (61.2)	402 (69.2)
Pneumonia is one of the leading cause of deaths among children (179 mothers)	Yes	56 (86.2)	9 (13.8)	65 (36.3)
	No	78 (68.4)	36 (31.6)	114 (63.7)

The serious signs of pneumonia (179 mothers)	Running nose and cough	10 (62.5)	6 (37.5)	16 (8.9)
	Chest indrawing and fast breathing	48 (81.4)	11 (18.6)	59 (33)
	Cough only	17 (81)	4 (19)	21 (11.7)
	I don't know	59 (71.1)	24 (28.9)	83 (46.4)
Providing fresh air regularly to the house prevent children from get pneumonia (179 mothers)	Yes	97 (71.3)	39 (28.7)	136 (76)
	No	35 (97.2)	1 (2.8)	36 (20.1)
	I don't know	2 (28.6)	5 (71.4)	7 (3.9)
Complete immunization is protecting child from pneumonia (179 mothers)	Yes	44 (88)	6 (12)	50 (27.9)
	No	83 (74.1)	29 (25.9)	112 (62.6)
	I don't know	7 (41.2)	10 (58.8)	17 (9.5)
Knowledge score	Good	116 (79.5)	30 (20.5)	146 (25.1)
	Fair	18 (36)	32 (64)	50 (8.6)
	Poor	156 (40.5)	229 (59.5)	385 (66.3)

In table (13), 30.8% of mothers knew about pneumonia, is one of leading cause of death (36.3%), 33% knew that chest indrawing and fast breathing are the serious signs, 76% knew providing fresh air prevents pneumonia, and only 27.9% of mothers knew that complete immunization as a protection way. All knowledge

percentages appeared high among mothers from urban areas. Presence of good knowledge was high among urban mothers (79.5%), while presence of fair and poor knowledge was high among rural mothers (64%, 59.5% respectively).

Table (4): Mother's Attitude about Used of Antibiotics for Acute Respiratory Infection.

Attitude		Urban No (%)	Rural No (%)	Total No (%)
Antibiotics required every time the child falls sick with ARI	Yes	89(45.9)	105(54.1)	194 (33.4)
	No	186(57.4)	138(42.6)	324(55.8)
	I don't know	15(23.8)	48(76.2)	63(10.8)
Using antibiotics without doctor consultation	Yes	83 (30.2)	192 (69.8)	275 (47.3)
	No	204 (69.6)	89 (30.4)	293 (50.4)
	I don't know	3 (23.1)	10 (76.9)	13 (2.3)
Antibiotics do not have any side effects	Yes	53 (47.3)	59 (52.7)	112 (19.3)
	No	217 (54.8)	179 (45.2)	396 (68.2)
	I don't know	20 (27.4)	53 (72.6)	73 (12.5)
Completing the course of antibiotics is necessary	Yes	147 (54.3)	124 (45.7)	271(46.7)
	No	129 (52.2)	118 (47.8)	247 (42.5)
	I don't know	14 (22.2)	49 (77.8)	63 (10.8)
Antibiotics use can prevent complications from respiratory infection	Yes	32 (65.3)	17 (34.7)	49 (8.4)
	No	68 (46.3)	79(53.7)	147 (25.3)
	I don't know	190 (49.4)	195(50.6)	385(66.3)
Over usage of antibiotics causes antibiotic resistance	Yes	17(74)	6(26)	23 (4)
	No	106(67.5)	51(32.5)	157 (27)
	I don't know	167(41.6)	234(58.4)	401 (69)
Attitude Score	Positive	262 (78.4)	72 (21.6)	334 (57.5)
	Negative	28 (11.3)	219 (88.7)	247 (42.5)

In table (4). Only 8.4% and 4% of mothers agreed that use of antibiotics prevent complication from ARI and its overdose cause resistance (this attitude was high among urban mothers). The presence of the positive attitude was

noticed to be high among urban mothers (78.4%), in contrast, presence of the negative attitude was high among rural mothers (88.7%).

Table (5): Mother's Practice about Acute Respiratory Infection

Practice of Mother		Urban No (%)	Rural No (%)	Total No (%)
Asking on advice or treatment	Yes	118 (53.4)	103 (46.6)	221 (38)
	No	172 (47.8)	188 (52.2)	360 (62)
Get advice from (221)	Volunteers	3 (18.8)	13 (81.2)	16 (7.2)
	Mobile clinic	0 (0.0)	9 (100)	9 (4)
	Physicians	41 (52.6)	37 (47.4)	78 (35.3)
	Friends	7 (33.3)	14 (66.7)	21 (9.5)
	Grandmothers	28 (28.9)	69 (71.1)	97 (44)

Use antibiotics without prescription	Yes	209 (59)	145 (41)	354 (60.9)
	No	81 (35.7)	146 (64.3)	227 (39.1)
Completing the course of Antibiotics	Yes	118(41.7)	165(58.3)	283 (48.7)
	No	172(57.7)	126(42.3)	298(51.3)
Using home remedies for treat ARI	Yes	117(38.7)	185 (61.3)	302 (52)
	No	173(62)	1 06(38)	279 (48)
Type of home remedies used (302 mothers)	Apply sesame oil in nose and head	21(32.3)	44(67.7)	65 (21.5)
	drink the child honey with lumen juice	38(46.3)	44(53.7)	82 (27.2)
	apply lemon with hair cream on the body	32(40.5)	47(59.5)	79 (26.2)
	Give the baby yogurt with mashed garlic	26(34.2)	50(65.8)	76 (25.1)
Practice score	Good	23 (34.3)	44 (65.7)	67 (11.5)
	Fair	33 (60)	22 (40)	55 (9.5)
	Poor	234 (51)	225 (49)	459 (79)

Around 38% of mothers ask for advice. Urban mothers get advice from physician (52.6%) and rural from the mobile clinics (100%). Regarding use antibiotics without prescription, and not completing the course practiced was noted to be higher among urban mothers (59% and 57.7% respectively). Rural mothers practiced using home remedies (61.3%). Good practice appeared with high percentage among rural mothers (65.7%). While fair and poor practice appeared high among urban mothers (60% and 51% respectively). (Table 5)

4. Discussion:

This current study was conducted on mothers living in urban and rural areas of Al Mukalla/ Hadhramout-Yemen. A higher proportion of the studied mothers were of primary education, married and not employed in any work. The available knowledge on pneumonia being responsible for high morbidity and mortality rates amongst children under five was comparably lower among rural than urban mothers. This could be due to lack of proper health education, specifically of symptoms and danger signs of ARI, and also due to failing to visit health facilities timely.

The result is higher than that from rural areas of Udipi Taluk, Karnataka when 31.5% of mothers had good knowledge about ARI [25], but was consistent with the report from Nepal [26], and Bangalore [27], showing mothers to have insufficient knowledge on ARI, causes, symptoms, and commonly responded that it is caused by cold weather.

The studied mothers showed positive attitude towards ARI that included unnecessary use of antibiotics every time that child falls sick, not using it without doctor consultation. In addition to that, the side effects of antibiotics, using antibiotics to prevent ARI complications, and its overdose can lead to resistance. The level of mothers' attitude was higher among urban areas that was considered reasonable because of awareness targeted mothers and training programs that were concentrated more in urban than rural areas. These findings were in contrast to the study of Mohamed SMM when about 60% of mothers had neutral attitude, believing that taking antibiotics in advance could protect children and shorten the duration of RTI symptoms [28],

and in Bangalore with unfavorable attitude regarding antibiotics requirement, use antibiotic without consultation, side effect, and prevent complications [27]. Zyoud et.al revealed 51.8% agreed that antibiotics have their side effects which was higher than the findings in this study [29].

A higher percentage of mothers in this study did not seek for any medical advice or treatment when their children suffered from ARI, particularly in rural areas; but moved on the side of using home remedies like honey with lemon juice. In contrast, the use of antibiotics without prescription, or not completing the course was common among urban mothers. In urban areas, the availability of public and private pharmacies makes it a process facilitating the ease of getting treatment or antibiotics being more common in cities. But for rural mothers it is quite difficult due to many issues such as location, living in remote area, insufficient use or inactivated health services, care cost effects on care seeking behavior and the irregular attendance for the day work of the mobile clinics due to several economic problems in transport. Besides to the nature of local culture, the rural community depend and build their confidence on the experience of grandmothers or older member of the family. This result is in agreement with that reported by Yu et al [14], and Mahmoud SM [28], who revealed that urban mothers use antibiotics without prescription more than rural mothers [30, 19, 17]. On the other side, this does not fall in agreement with the report from rural mothers in South Vietnam who request for advice or treatment when their children suffer from ARI [31].

5. Conclusion:

The study reveals good knowledge and positive attitude of urban mothers on ARI symptoms, causes and preventions way, consulting a physician than rural mothers, but did not affect the practice toward use of antibiotics by irrational way. Healthy communication with mothers through mass media will be useful in enhancing and promotion changes in mothers KAP towards ARI and rationale use of antibiotics with their children, especially in urban areas, beside to strict enforcement of over-the-counter sale of antibiotics. Implement practical educational programs to improve their knowledge towards ARI, especially in rural areas

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معارف، مواقف وممارسات الأمهات المتعلقة بالعدوى التنفسية الحادة لدى الأطفال دون سن الخامسة / المناطق الحضرية والريفية - مدينة المكلا - 2022

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المُلخَص

ترتبط إدارة ومنع التهابات الجهاز التنفسي الحادة ارتباطاً مباشراً بمعرفة الأم وموقفها، والذي يمكن ترجمته إلى ممارسة واستخدامه كمدخل للوقاية من الأمراض. كان الهدف من هذه الدراسة هو تقييم معرفة الأمهات، والمواقف، والممارسات فيما يتعلق بالتهابات الجهاز التنفسي الحادة في الأطفال دون سن الخامسة في كل من المناطق الحضرية والريفية من مدينة المكلا.

أجريت دراسة مقطعية مجتمعية في محلية المناطق الحضرية والريفية في المكلا بمحافظة حضرموت / اليمن. تم اختيار خمسمائة وواحد وثمانين من الأمهات بشكل عشوائي باستخدام طريقة المشي العشوائي اللاتي لديهن طفل عمره أقل من 5 سنوات. تم جمع البيانات باستخدام استبيان تم اختياره مسبقاً بواسطة المحاور. تم استخدام الإصدار 20 من SPSS لإدخال البيانات وتحليلها

في دراسة أجريت على 581 أم، كانت 52.3% من الأمهات في المناطق الحضرية مطلعات على التهابات الجهاز التنفسي الحادة. كانت حوالي ثلث الأمهات على دراية بأن سحب الصدر إلى الداخل وسرعة التنفس من العلامات الخطيرة للعدوى، وكانت هذه المعرفة عالية بين الأمهات في المناطق الحضرية. فيما يتعلق بمواقف الأمهات حول استخدام المضادات الحيوية، وجد أن المواقف الإيجابية منتشرة بين الأمهات الحضريات (78.4%)، بينما كانت المواقف السلبية سائدة بين الأمهات الريفيات (88.7%). كانت الأمهات في المناطق الحضرية أكثر عرضة لاستخدام المضادات الحيوية بدون وصفة طبية وعدم إكمال الدورة (59% و 57.7% على التوالي)، بينما كانت الأمهات الريفيات أكثر عرضة لاستخدام العلاجات المنزلية (61.3%).

كشفت الدراسة ان المعرفة الجيدة والموقف الإيجابي بين الأمهات في المناطق الحضرية تجاه التهابات الجهاز التنفسي الحادة كانت أكثر من الأمهات الريفيات، ولكن هذه المعرفة الجيدة لم تترجم إلى ممارسة جيدة تجاه استخدام المضادات الحيوية بطريقة عقلانية. الكلمات المفتاحية: التهابات الجهاز التنفسي الحادة، المواقف، المعرفة، الأمهات، الممارسة، المناطق الحضرية والريفية.

الكلمات المفتاحية: التهابات الجهاز التنفسي الحادة، المواقف، المعرفة، الأمهات، الممارسة، الحضرية، الريفية.

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