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CURATIVE HEALTH SEEKING BEHAVIOUR;

SOCIO-ECONOMIC INEQUALITIES IN CURATIVE HEALTH SEEKING BEHAVIOUR FOR UNDER-FIVE YEAR CHILDREN IN PAKISTAN.

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ABSTRACT... Introduction: Health seeking behavior (HSB) is a sequence of complicated decisions that is based on socio-cultural and economic determinants. 17% of under 5 mortality in the Pakistan is due to diarrhea and around 11% of them die from pneumonia every year. Care givers are mostly parents whose HSB needs extensive study in-order to reduce childhood mortality from preventable diseases such as diarrhea and acute respiratory infection (ARI). **Objectives:** The following article reviews Pakistan Demographic and Household Survey (PDHS) 2012-2013 data to study the prevalence of diarrhea and ARI among under-5 children in Pakistan, to determine the HSB among under-five during their illness and to study the association of socio-economic profile with parents' HSB. **Study Design:** Cross sectional descriptive study. **Setting and Period:** Children under-five years living with their parents as sampled by the 2012-13 PDHS were used to estimate the prevalence of diarrhea and ARI in preceding two-weeks. **Material and Methods:** After reviewing, the primary data of PDHS survey 2012-2013, dimensions of HSB, namely illness, medical care sought and provider (type and place), were examined in adjusted analysis for diarrhea or ARI when reported. Variables like socio-cultural capital including wealth index (for socio-economic profile) of parents were computed. **Results:** Out of 7064 children, 56% were less than 25 months, 25 % reported for diarrhea and 90.8% of them soughed treatment. Out of 35 % of those who had ARI, in the two-week period, 93.2% soughed treatment, 33.7% of it was informal, while for diarrhea it was 20.2%. In both illness' treatment sought formally, was more from private health care provider. **Conclusion:** Wealth index was found to play an important role in HSB. Along with parental occupation, education and place of residence, it influences inequities in HSB. Child sex had no role in HSB for diarrhea and ARI.

Key words: Health Seeking Behaviour, Socio-economic Inequalities, Curative, Under Five Children, PDHS.

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INTRODUCTION

According to World Health Organization, 5.6 million children under 5 died in 2016 with 15,000 under 5 death /day with pneumonia and diarrhea being two of five reasons.[1] According to UNICEF state of the world`s children statistics report of 2017, under-five mortality rate in Pakistan lowered from 139 to 79 deaths per 1000 live births from 1990 to 2013, whereas in a developed country like Japan, it reduced from 6 to 3 deaths per 1000 live births, in the same time.[2] Despite promising reductions from mortality, the devastating impact from these diseases can't be overlooked. Mortality with ARI and diarrhea in Pakistan, as depicted by UNICEF in 2016 was 15% and 9% respectively.[3,4] Timely treatment of causes, including early diagnosis and prompt treatment with antibiotics, is crucial in reducing childhood mortality from these two illnesses. Many deaths are only the result of inability to take the child to a health center on time or of misdiagnosis by a health care worker. Although the integrated management of newborn and childhood illness (IMNCI) addresses the management of diseases such as pneumonia and diarrhea, high burden of diseases indicates the need to find the missing links.[5]

A strong significant association between health seeking behaviour (HSB) and rapid decline in under 5 mortality in Africa from 2000 till 2013

was calculated by Kipp et al.[6] Households-level and diversity of individual, reflective of socio-economic position (SEP), including poverty level, occupation, education, and access to productive and financial resources including inequalities in health based on social hierarchy, are the main determinants of HSB.[7,8]

In developed countries, under-five mortality has been reduced by improving families' HSB.[9] In Western Nepal it was reported that 26.4% care was sought by medical allopathic practitioners and the predictors of HSB were family income, severity of illness, mothers' education and number of symptoms. According to their results, 40% parents sought village level care for children, 15% took care of their child with diarrhea at home and approximately 8.75% children never sought treatment. In developing countries, 20% of deaths in under-five are due to a result of not seeking health services and care immediately.[10]

Socio-economic gradients are well-established determinants of HSB in low- and middle-income countries and large gaps exist in understanding its extent in curative health-seeking behaviors for children. Benova et al argued that health-seeking behaviors for curative care and its association to socio-economic position related to child illnesses have been left unaddressed even for a nationally-representative samples in such countries. Situation in Pakistan is no different. Socio economic inequalities have documented role at least in establishing the selection of provider type.[11,12]

Effective prevention and treatment of childhood illnesses, such as diarrhea and pneumonia, can lead to further reductions in morbidity and mortality among children under-five years but, their uptake and coverage rely on households' perception of need, HSB, and on the quality of care received by the provider.

With the high prevalence of killer illnesses and lack of estimation of socio-economic inequality in the crude measures of illness points potentially to unexplored aspects of HSB and quality of care which can be important determinants of child health outcomes and survival in Pakistan.[11,12,13] This study used the 2012-13 PDHS to address three objectives. Firstly: to study the prevalence of diarrhea and ARI among under 60 months old children in Pakistan. Second, to determine the health-seeking behavior among under-five during their illness and lastly, to study the association of socio-economic profile with HSB. The process of health-seeking for children with these illnesses was assessed using following dimensions: Whether medical care was sought and whether it was sought from public or from private providers. The socio-cultural profile was assessed using the variables such as parental education and occupation (both mother and father) whereas, wealth index was used as a proxy for economic status. It is worth mentioning that it was already calculated in the DHS data.

METHODOLOGY

Study Sample

The analysis was based on the 2012-13 PDHS, gathered information on prevalence and treatment of childhood illnesses like diarrhea and ARI. Children aged less than 60 months, living with their parents were included in the analysis.

Health Care Seeking Behavior

The reporting of diarrhea and ARI is the first measure to be analyzed for the assessment of HSB for curative care among children under 60 months. Therefore, the sample comprises children for whom either diarrhea or ARI was reported. The respondents were asked if their child had diarrhea in the two weeks prior to the survey. If the answer was affirmative, they were inquired about treatment sought (yes/no), place (public/ private) and provider of advice (if sought). Sequential questions related to care-seeking behavior (as detailed above for diarrhea) were also repeated for ARI. ARI, taken as a predictive of pneumonia, is defined as cough accompanied by short or rapid breathing which was chest-related in two weeks period.[12]

Fever was taken as an additional symptom for both ARI and diarrhea, during the same two-week recall period, although it could not be assessed

from the data timeliness.[12]

Provider Type

The respondents were inquired about the places of from where care was sought, from the options listed in the questionnaire. The responses were grouped, to describe the types of providers into two categories namely government (hospital/ facility) and private clinic. Similarly health care provider variable was computed into two categories; formal (doctor, nurse, lady health visitor) or informal (Hakeem, Homeopath, Lady Health Worker or dispenser).

Measures of SE

Socio-economic compromised of socio-cultural and economic components. The latent variables capturing socio-cultural capital and economic capital is described previously. Briefly, socio-cultural capital is reflective of knowledge, access to information, cognitive skills and exposure to authority.[12] This latent variable was based on parental education and parental occupation (both mother and father). Economic capital captures the material and the index constructed by using data on household ownership of assets based, was provided in the data. Once the index was computed, wealth quintiles (from lowest to highest) were obtained by assigning household scores to each of the household member, ranking each person in the population by this score, and then dividing the ranking into five equal categories, each comprising 20 percent of the population. The occupation was taken as indicative of the employment status as being employed and unemployed.[13]

Confounders

A priori confounders of the association between socio-cultural capital, economic capital and child HSB were identified from the existing literature. Child sex, age group (in one-year intervals), mother's age group (five-year intervals), preceding birth interval, and mothers' education were identified as confounders. Availability of health services were captured in the residence variable (urban or rural).[12] Confounders such as month of interview were omitted as the information was inconclusive in the date and therefore, omitted.

Data Analysis

Cleaned and entered data was made available. It was run on SPSS version 20.0.Latent independent variables such parental education; parental occupation, health care facility and health care providers were computed according to the operational definition. Economic capital was captured through wealth Index. Binary and logistic regression was applied for adjusted analysis for HSB as independent variable. The stratification of data was done for confounding variables such as maternal age. Adjusted effects of socio-cultural capital and Wealth Index on child's HSB for diarrhea and ARI were calculated taking wealth index, parental education and parental occupations proxy variables. Odds Ratio >1 and p value <0.05 were taken as statistically significant.

RESULTS

Socio-demographic Profile (Table-I)

Out of 7064 children, 55.6% were living in urban areas; whereas 44.4% were residing in rural areas. Half of them aged <25 months and almost half were girls. 54.6% mothers and had no education and only 19.1% parents belonged to the middle wealth index. The prevalence of children with illness was more in urban areas and mothers of children with ARI were comparatively younger than mothers of the children who had diarrhea. As far the region is concerned, a large number of children who had ARI were from Punjab & KPK. 41.1% of parents were poor (poorest or poorer wealth quintile).Regarding mother's education, 54.6% of mothers had no education.

Burden of Disease (Figure-1a & Figure-1b) & Health Seeking Behavior (Figure-2)

Among all children, 25 % reported for diarrhea and 35 % had ARI (Figure-1). Figure-2 shows the results of various health-seeking behaviors for ARI & Diarrhea and levels of health-seeking outcomes. Among children, who sought treatment for diarrhea, 63.4% contacted a private health facility, 16.4% sought care from public health facility and almost 20.2% went to informal services for treatment.

53.2% of children who sought treatment for ARI, had contacted a formal private health facility, 13.1% sought care from formal public health facility and almost 33.7% went to informal treatment services for their cure.

Unadjusted Analysis of Diarrhea and ARI Health-Seeking Behavior (Table-II&III)

Female child had slightly lower odds than male child for formal treatment of diarrhea from both public & private facility but the association was not significant. The odds of female child (OR = 1.5, p = 0.381) of diarrhea for seeking informal treatment was higher but again the association was not significant. The odds of sought treatment of diarrhea were more among 13–24 month old children. There was no association between different treatment options (formal from public, private and informal) and child age groups. For ARI, female child had more odds of sought treatment, there were higher odds for using formal care facilities, illiterate people had higher odds of informal treatment and had significant association with taking advice from public facility.

Uneducated parents were more likely (OR = 1.09, p = 0.402) to sought treatment for diarrhea. Parents with no education opted for more informal treatment options as compared to formal public & private treatments but the association was not significant for any group. Compared to children of teen age mothers (15-19 years old), mothers with age group 20 – 29 years were more likely to sought treatment for diarrhea but no treatment option was significantly associated with any age group of mothers.

Children from rural areas had double the odds (OR = 2.00, p = 0.000) of sought treatment for diarrhea and ARI care as compared to children living in urban areas. Receiving formal treatment from public facility was associated with rural place of residence; similar was the case with informal treatment choice, which was significantly associated with rural place of residence (Diarrhea OR: 0.4, CI: 0.3 – 0.5, p 0.000) (ARI:OR:0.3, 0.2 – 0.4, p 0.000).

Adjusted Analysis of Diarrhea Health-Seeking

Table-IV shows the results of adjusted models for health-seeking for diarrhea. Neither wealth Index, Parent's occupation, parent's education, nor child sex & age was associated with sought treatment for diarrhea.

Wealth Index had higher odds but was insignificantly associated with seeking formal treatment from a public facility. There was a strong association between formal treatment for private health facility with wealth Index (OR: 0.7, CI: 0.5 – 0.9, p <0.001), similarly with parental occupation (OR: 2.0, CI: 1.1 – 3.5, p 0.012) for seeking formal treatment from private facility. Wealth Index (OR: 0.6, CI: 0.4 – 0.8, p 0.006) and age of the child (OR: 0.7, CI: 0.3 – 0.8, p 0.578) was associated with informal treatment choices.

Adjusted Analysis of ARI Health-Seeking

Table-V shows the results of adjusted models for health-seeking for ARI. There was significant association between wealth Index and parent's occupation with sought treatment for diarrhea while parent's education, child's age, and child's sex was not associated with this outcome.

Parent's education (OR: 0.7, CI: 0.5 – 0.9, p 0.044) and parent's occupation (OR: 0.4, CI :0.2 – 0.6, p 0.000) was significantly associated with seeking formal treatment from public health facility.

Wealth Index had higher odds and was significantly (OR: 2.0, CI: 1.6 – 2.6, p 0.000) associated with seeking formal treatment from private health facility. Neither wealth index, parent's occupation, parent's education nor the child sex was associated with informal treatment choices for ARI. Only age of the child was significantly associated with this outcome with higher odds (OR: 2.4, CI: 1.5 – 4.1, p 0.001).

DISCUSSION

High prevalence of diarrheal and ARI illness is alarming (35% and 25% respectively). Almost ninety percent (93.2%) sought treatment for ARI while 90.2% sought treatment for diarrhea.

Characteristics	Sample	All children < 5 = (7064) Missing data (4057)	Children with Diarrhea = (1774) Missing data (1136)	Children with ARI = (2485) Missing data (1577)
Child Age (in months)	0-12 13-24 25-36 37-48 49-60	840 (32.8 %) 592 (23.2%) 527(20.6%) 364 (14.2%) 235 (9.2%)	221 (34.6%) 188 (29.5%) 132 (20.7%) 61 (9.6%) 36 (5.6 %)	286 (31.5%) 227 (25%) 195 (21.5%) 115 (12.7%) 85 (9.4%)
Child Sex	Male Female	3654 (52%) 3610 (51%)	969 (54.6%) 805 (45.4%)	1340 (53.9%) 1145 (46.1%)
Type of Residence	Rural Urban	3139 (44.4%) 3925 (55.6%)	729 (41.1%) 1045 (58.9%)	1092 (43.9%) 1393 (56.1%)
Mother's Education	No education Primary Secondary Higher	3857 (54.6%) 1014 (14.4%) 1315 (18.6%) 878 (12.4%)	990 (55.8%) 270 (15.2%) 340 (19.2%) 174 (9.8 %)	1260 (50.7%) 417 (16.8%) 480 (19.3%) 328 (13.2%)
Age of Mother	15 – 19 20 – 24 25 – 29 30 – 34 35 – 39 40 – 44 45 - 49	238 (3.4%) 1399 (19.8%) 2064 (29.2%) 1701 (24.1%) 1099 (15.6%) 425(6%) 137 (1.9%)	75 (4.2 %) 436 (24.6%) 536 (30.2 %) 389 (21.9 %) 237 (13.4 %) 81 (4.6 %) 20 (1.1 %)	104 (4.2%) 512 (20.6%) 100 (28.2%) 591 (23.8%) 388 (15.6%) 149 (6.0%) 41 (1.6%)
Wealth Index	Poorest Poorer Middle Richer Richest	1504 (21.3%) 1398 (19.8%) 1346 (19.1%) 1365 (19.3%) 1451 (20.5%)	396 (22.3%) 394 (22.2%) 361 (20.3%) 338 (19.1 %) 285 (16.1 %)	470 (18.9%) 509 (20.5%) 462 (18.6%) 522 (21%) 522 (21%)
Region	Punjab Sindh KPK Baluchistan Gilgit (Bal) ICT	1900 (27%) 1499 (21.2%) 1474 (21%) 1054 (14.8%) 680 (9.5%) 456 (6.5 %)	505 (28.5%) 425(24%) 440 (24.8%) 153 (8.6%) 136 (7.7 %) 115 (6.5%)	723 (29.1%) 543 (21.9%) 624 (25.1%) 213 (8.6%) 213 (8.6%) 169 (6.8%)
Parents Occupation	Employed Not Employed	1754 (24.9%) 5310 (75.1%)	428 (24.1%) 1346 (75.9%)	645 (26%) 1840(74%)

Table-I. Frequency distribution of children and their parents according to Socio-Demographic Characteristics

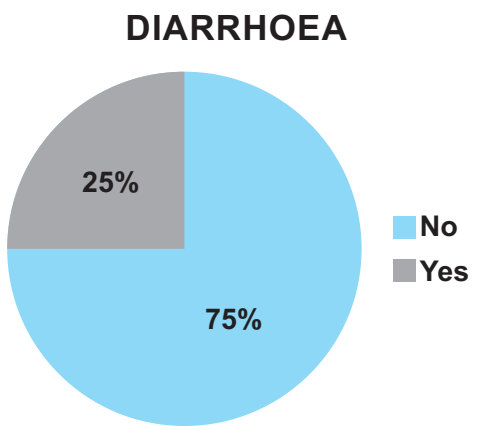

Figure-1 (a)

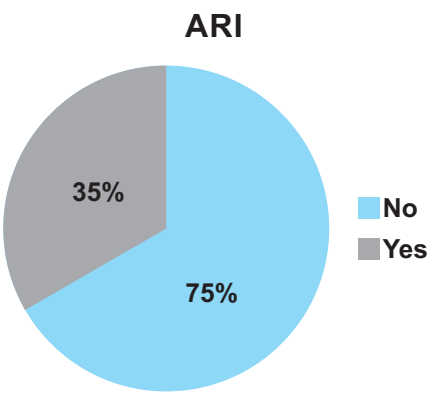

Figure-1. (b) Frequency distribution of children according to diarrhea and ARI episodes in under-five year children

Variables	Sample	Sought Treatment OR (95 % CI) p	Formal Treatment From Public Facility OR (95 % CI) p	Formal Treatment from Private facility OR (95 % CI) p	Informal Treatment OR (95 % CI) p
Child Sex	Female Male	1.3 (1.0 – 1.9) 0.045 Ref (1)	0.8 (0.6 – 1.0) 0.146 Ref (1)	0.8 (0.7 – 1.0) 0.130 Ref (1)	0.9 (0.7 – 1..2) 0.742 Ref (1)
Child Age in Months	0-12 13-24 25-36 37-48 49-60	1.4 (0.5 – 4.1) 0.483 3.2 (1.0 – 10.2) 0.048 1.9 (0.5 – 6.1) 0.246 1.8 (0.4 – 6.7) 0.378 Ref (1)	1.2(0.4 – 3.3) 0.717 1.2(0.4 – 3.2) 0.783 1.0 (0.3 – 2.9) 0.969 1.8(0.4 – 5.2) 0.545 Ref (1)	1.2(0.4 – 3.3) 0.717 1.2(0.4 – 3.2) 0.783 1.0 (0.3 – 2.9) 0.969 1.85(0.4 – 5.2) 0.545 Ref (1)	2.4 (0.7 -8.1) 0.172 2.0 (0.6 – 6.9) 0.274 1.7 (0.5 – 6.3) 0.399 1.4 (0.3 – 5.9) 0.624 Ref (1)
Parents Education	No Education Primary Secondary Higher	1.9 (0.4 – 9.9) 0.402 0.9 (0.1 – 4.7) 0.946 1.4 (0.5 – 6.1) 0.656 Ref (1)	1.1 (0.7 – 1.8) 0.505 1.4 (0.8 – 2.5) 0.220 0.8 (0.5 – 1.2) 0.380 Ref (1)	1.4 (1.0 – 2.0) 0.018 1.0 (0.7 – 1.5) 0.967 1.3 (0.9 – 1.8) 0.120 Ref (1)	3.5 (1.8 – 6.5) 0.000 2.1 (1.0 – 4.2) 0.046 1.9 (0.9 – 3.7) 0.080 Ref (1)
Mother's Age group	15 – 19 20 – 24 25 – 29 30 – 34 35 – 39 40 – 45 45 - 49	0.9 (0.1 – 5.0) 0.986 1.3 (0.2 – 5.6) 0.759 1.3 (0.2 – 5.7) 0.767 1.1 (0.2 – 4.8) 0.917 1.3 (0.3 – 5.9) 0.755 0.7(0.1 – 3.3) 0.630 Ref (1)	0.4 (0 – 3.3) 0.409 0.4 (0.4 – 3.4) 0.426 0.4(0.4 – 2.7) 0.319 0.3(0.4 – 2.3) 0.260 0.3 (0.3 – 2.2) 0.236 0.4(0.5 – 3.7) 0.455 Ref (1)	1.0 (0.1 – 5.0) 0.986 1.2 (0.2 – 5.6) 0.759 1.2(0..3– 5.6) 0.767 1.0 (0.2 – 4.8) 0.917 1.3 (0.3 – 5.9) 0.755 0.6(0.1 – 3.3) 0.630 Ref (1)	0.7 (0.1 – 3.1) 0.720 0.9 (0.3 -3.4) 0.945 1.2 (0.4 - 4.2) 0.769 0.9 (0.3 – 3.2) 0.888 1.0 (0.3 – 3.6) 0.982 0.8 (0.2 – 3.5) 0.869
Place of residence	Rural Urban	2.0 (1.4 – 2.9) 0.000 Ref (1)	0.8(0.5 – 0.9) 0.042 Ref (1)	0.9 (0.8 – 1.1) 0.889 Ref (1)	0.4 (0.3 – 0.5) 0.000 Ref (1)

Table-II. Unadjusted analysis of health seeking behavior for diarrhea among children < 5 years

Variables	Sample	Sought Treatment OR (95 % CI) p	Formal Treatment From Public Facility OR (95 % CI) p	Formal Treatment from Private facility OR (95 % CI) p	Informal Treatment OR (95 % CI) p
Child Sex	Female Male	1.4 (0.8 – 2.5) 0.186 Ref (1)	1.2 (0.96– 1.0) 0.164 Ref (1)	1.2 (1.0 – 1.4) 0.014 Ref (1)	0.8 (0.6 – 0.9) 0.030 Ref (1)
Child Age in Months	0-12 13-24 25-36 37-48 49-60	3.7 (0.7 – 18.1) 0.099 2.7 (0.6 – 11.7) 0.192 2.7 (0.5 – 13.4) 0.215 0.9 (0.1 – 5.3) 0.946 Ref (1)	1.1 (0.5 – 2.3) 0.800 0.9 (0.4 – 1.8) 0.749 0.6 (0.2 – 1.2) 0.200 0.9 (0.3 – 2.1) 0.811 Ref (1)	1.4 (0.8 – 2.2) 0.800 1.3 (0.7 – 2.1) 0.354 1.0 (0.6 – 1.7) 0.868 0.9 (0.5 – 1.5) 0.737 Ref (1)	1.1(0.5 – 2.3) 0.745 1.6 (0.7 – 3.3) 0.187 1.2 (0.6 – 2.6) 0.595 1.4 (0.6 – 3.1) 0.381 Ref (1)
Parent Education	No Education Primary Secondary Higher	4.5 (0.5 – 35.8) 0.159 1.1 (0.1 – 17.4) 0.950 0.8 (0.0 – 12.2) 0.844 Ref (1)	0.6 (0.4 – 0.8) 0.001 0.8 (0.6 – 1.1) 0.273 0.7 (0.5 – 0.9) 0.034 Ref (1)	1.1 (0.7 -1.6) 0.514 1.3 (0.8 – 2.0) 0. 321 0.9 (0.6 – 1.3) 0.723 Ref (1)	6.3(3.6 – 10.9)0000 4.4 (2.4 – 7.9) 0.000 0.9 (1.4 – 4.8) 0.002 Ref (1)
Mother's Age	15 – 19 20 – 24 25 – 29 30 – 34 35 – 39 40 – 45 45 - 49	1.3 (0.1 – 13.5) 0.841 1.5 (0.2 – 12.3) 0.699 1.4(0.2 – 11.5) 0.758 0.8 (0.1 – 6.6) 0.842 2.0 (0.2– 19.0) 0.533 0.7(0.1 – 7.0) 0.765 Ref (1)	0.7 (0.3 – 2.1) 0.602 1.3 (0.5 – 3.1) 0.615 1.0(0.4 – 2.6) 0.898 1.2 (0.5 – 3.0) 0.657 1.1 (0.4 – 2.8) 0.804 1.3(0.5 – 3.5) 0.597 Ref (1)	1.5 (0.7 – 3.2) 0.602 1.9 (1.0 – 3.8) 0.615 2.3(1.2 – 4.4) 0.898 1..8(0.9 – 3.5) 0.657 2.0 (1.1 – 4.1) 0.804 1.6(0.8– 3.3) 0.597 Ref (1)	0.6 (0.2 – 1.4) 0.212 0.7 (0.3 – 1.6) 0.462 0.7 (0.3 – 1.5) 0.332 0.7 (0.3 – 1.5) 0.361 0.6 (0.2 – 1.3) 0.188 1.0 (0.2 – 1.4) 0.873 Ref (1)
Place of Residence	Rural Urban	2.0 (1.4 – 2.9) 0.000 Ref (1)	0.7(0.6 – 0.9) 0.005 Ref (1)	1.5 (1.3 – 1.7) 0.000 Ref (1)	0.3(0.2 – 0.4) 0.000 Ref (1)

Table-III. Unadjusted analysis of health seeking behavior for ARI among children < 5 years

Variables	Sought Treatment	Formal- From Public Health Facility	Formal- From private Health Facility	Informal Treatment
Wealth index OR (95% CI) p	1.3 (0.8 – 2.0) 0.230	2.1 (1.4 – 3.1) 0.038	0.7 (0.5 – 0.9) 0.002	0.6 (0.4 – 0.8) 0.006
Parents` education OR (95% CI) p	1.1 (0.7 – 1.7) 0.625	1.4 (0.9 – 2.1) 0.117	1.0 (0.7 – 1.3) 0.846	0.9 (0.6 – 1.2) 0.439
Parent`s occupation OR (95% CI) p	0.9 (0.4 – 1.9) 0.807	0.5 (0.3 – 1.1) 0.105	2.0 (1.1 – 3.5) 0.012	0.6 (0.3 – 1.2) 0.169
Child sex OR (95% CI) p	0.7 (0.5 – 1.1) 0.204	1.1 (0.7 – 1.6) 0.660	1.1 (0.9 – 1.5) 0.340	1.0 (0.7 – 1.3) 0.978
Age of child OR (95% CI) p	0.9 (0.4-2.5) 0.957	0.9(0.4-1.9) 0.737	1.1(0.6-2.0) 0.756	0.7(0.3-0.8) 0.578

Table-IV. Adjusted effects of wealth index, parent's occupation & education, child's age & sex on child's health-seeking behaviors for diarrhea

Variables	Sought Treatment	Formal- From Public Health Facility	Formal- From Private Health Facility	Informal Treatment
Wealth index OR (95%CI) p	0.9 (0.4 – 2.0) 0.900	1.9 (1.4 – 2.7) 0.000	2.0 (1.6 – 2.6) 0.000	1.1 (0.8 – 1.4) 0.588
Parent`s education OR (95%CI) p	1.7 (0.8 – 3.6) 0.158	0.7 (0.5 – 0.9) 0.044	1.1 (0.9 – 1.4) 0.326	0.8 (0.7 – 1.1) 0.275
Parent`s occupation OR (95%CI) p	0.3 (0.1 – 0.7) 0.009	0.4 (0.2 – 0.6) 0.000	0.8(0.5 – 1.4) 0.604	1.1 (0.6 – 1.7) 0.777
Child sex OR (95%CI) p	0.8 (0.4 – 1.5) 0.438	1.1 (0.8 – 1.5) 0.512	0.8 (0.6 – 1.0) 0.089	1.1 (0.9 – 1.4) 0.381
Age of child OR (95%CI) p	0.4 (0.1-1.6) 0.199	0.8 (0.4-1.5) 0.580	0.7 (0.4-1.0) 0.111	2.4 (1.5-4.1) 0.001

Table-V. Adjusted effects of wealth index, parent's occupation & education, child's age & sex on child's health-seeking behaviors for ARI

Health Seeking Behavior	Sample	ARI (n=2485) Frequency (%)	Diarrhea (n=1774) Frequency (%)
Treatment Sought	No Yes	57 (6.8%) 2428 (93.2%)	163 (9.2 %) 1608 (90.8%)

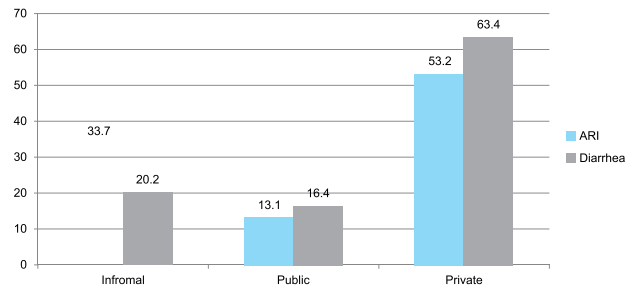

Figure-2. Frequency distribution of under 5 children according to the treatment sought and place of treatment

63.4% of diarrheal sick children sought treatment from private sector, 16.4% from public and 0.2% didn't seek any formal treatment. Benova et al showed that 8.4% and 7.6% of children sampled in DHS Egypt had diarrhea and ARI respectively. Among children who had diarrhea, 62.0 % soughed care out of which 71.9 % were taken to a private sector provider. For ARI illness, it showed that care was seeked for 78.5 % and 72.6 % of them were taken to a private provider.[12] Lower values were found in our study; 53.3% of ARI children received the sought treatment from formal private care facility, while only 13.8% of children were taken to a public health facility. 33.7% sought informal health care for ARI which is quite high. It shows the casual trend of the parents toward ARI. Female child between 13-24 months of age belonging to rural areas seek more for the treatment of diarrhea. Katiyar, however, concluded that about 95% of the male child and 86.4% of the female child sought treatment in Lucknow. 67.3% were taken to a health care provider and 76.4% males that got treatment outside home.[14]

Adjusted analysis of HSB for diarrhea and ARI showed that wealth index was a significant determinant in seeking treatment, reflecting itself in all aspects of HSB. This synchronizes with Benova et al. who showed that wealth index was the only determinant among the socio-cultural gradients to play an important role in HSB. Use of a public health facility for diarrhea and ARI was found associated with wealth index (OR=2.1,OR=1.9 respectively) but, wealth index had a protected role for use of private facility and informal treatment for diarrhea while its strong association was seen with use of private facility in ARI cases. Parental occupation was the only determinant besides wealth index which was also seen manifesting itself in the HSB. It plays a significant role in seeking treatment for diarrhea at private facility (OR=2.0) while it has a protected role in sought treatment and curative care from public facility (OR=0.4 and OR=0.3 respectively) for ARI case. Parental education played a protected role in selecting public facility for ARI cases. Benova et al also showed that economic capital was associated with private facility usage for ARI treatment while socio-cultural factor played a protected role, while only economic capital played a significant role in seeking treatment for ARI.[12] Similarly, Gwatkin's crude analysis showed that children from lower quintiles were less likely to receive care with symptoms of acute respiratory infection (ARI) and diarrhea as compared to children from higher quintiles. Results of a crude association showed that children from lower quintile households were less likely to receive care from a private provider.[15] In contrast to current analysis, utilization of private care was associated with higher levels of mothers and father's education, as well as parental employment status. Colvin et al showed that perceived illness severity, efficacy of treatment, rural location, gender, household income and cost of treatment were important factors in determining the health seeking behavior.[16]

The study highlights the health care seeking behavior of rural community as compared to the urban setting. Although disease paradigm is shifting from rural to urban areas but the socio-economic gradients were vocal in the rural settings. Sought treatment for diarrhea and treatment from private formal facility in ARI cases were strongly associated to rural place of residence. For other components of HSB for both illnesses, rural place of residence plays an important role. The use of informal methods of treatment were more prevalent in rural settings, which resonates with issues of inaccessibility. In rural settings, parents are more inclined towards informal methods of treatment and using private facility for ARI. Similar results were shown by Benova et al.[12] Barja et al also observed urban rural differences in health seeking behaviors of care givers for children in Equatorial Guinea.[17] However, Barja et al and Hoeven et al. showed that although the rural population was more inclined towards informal methods of treatment, they still used public facility.[17,18] Rozi et al showed that the low economic status, illiteracy, cultural and social barriers create obstacles in health care utilization which add up to problems of inaccessibility in rural settings.[19]

This study showed that seeking care for child illnesses in Pakistan was not strongly socio-economically designed. However, it was observed that children with higher parental socio-cultural capital scores were more likely to receive care and higher household wealth quintile was an important determinant in selection of facility. It tends to provide different options regarding the type and place of treatment for both illness. Similar results were reported by Benova et al.[12] Parental occupation was another identified gradient which exerts its influence on HSB. Parental education played a protected role. Out of socio-cultural components, parental occupation and their education tends to exert it's influence on parental curative choices which indirectly shows the influence particularly on health system and financing. It is challenging to compare these findings from those in other studies, primarily because of different study methodologies.

Several limitations were observed. The survey was based on the interview method. Recall bias cannot be avoided as this study was dependent on reporting of child illnesses by the mother and no documentary evidence was asked for.this could

result in various issues of reliability and validity. However, the two-week recall period for ARI was found to have acceptable specificity in Egypt as concluded by Benova.[12] It has been shown that mothers correctly recognized symptoms of pneumonia and diarrhea.[12]

A secondary analysis was done and various variables were computed latently. This provided difficulty in dealing with the information that was not provided and hence, better projection of the results was difficult. Lack of resources, specifically in the biostatistics, forbade the researchers to calculate the combined gradients for socio-cultural and economic capital.

CONCLUSION

The role of socio-cultural and economic position is variable in HSB of care givers for children under-five. Different patterns were observed for ARI and diarrheal illness during last two weeks of the interview. ARI care givers relied more on the informal treatment choice and the private sector. Wealth index was found to play an important role in HSB. Along with parental occupation, education and place of residence, it influences inequities in HSB. Wealth index was found associated with sought treatment, type of treatment and facility used for diarrhea. Use of formal private facility was significantly associated wealth index for ARI episodes. In both scenarios, parental occupation played an important role in HSB. Parental education had a protected role in seeking treatment from private facilities for ARI cases. Child sex had no role in HSB for diarrhea or ARI. Urban rural difference was also seen in the HSB.

Treatment sought from private caregivers was strongly associated to rural place of residence. It is a dilemma of our health system that rural population being poor still has to opt for private set-ups. Females between 13-24 months had higher odds for sought treatment. This depicts the importance of reforms in health system to provide universal coverage in spite of financial constraints. Collaboration of public-private facility along with awareness and education of parents can play an important role in reducing under-five mortality in Pakistan

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Sometimes we need to lose the small **battles** in order to win the **war**.

"Unknown"

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