RESEARCH ARTICLE

Role of sociocultural perceptions in malnutrition of children under the age of 5 years in a semi-urban community of Pakistan

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Abstract

Objective: To assess the impact of sociocultural perception on the nutritional status of children under five years of age.

Methods: This cross-sectional study using a self-constructed questionnaire was conducted at the Shifa Rotary Clinic, Nurpur Shahan, Pakistan, from February to October 2016, and comprised mothers and children. Mothers age 18-45years having a child less than 5 years old were included. SPSS 21 was used for data analysis.

Results: Of the 564 participants, 526(93.3%) were housewives and 38(6.5%) were working mothers. The overall mean age was 27.49±5.197 years. Mother was the decision-maker for child nutrition in 344(61.0%) cases while the father was the decision-maker for child nutrition in 106(18.8%) cases. About 64(11.3%) wasted colostrums, of which 18(28.1%) acted on their own accord 46(71.9%) on others' advice. Mother as the decision-maker for child nutrition was found to be significantly associated with normal child nutritional status ($p<0.05$).In our study male child was 2.29 times likely to have a normal nutritional status as compared to a female child ($p<0.05$).

Conclusion: Sociocultural perceptions were found to have a significant impact on nutritional status of children under the age of 5 years.

Keywords: Perceptions, Malnutrition, Nutritional status, Child, Pakistan. (JPMA 67: 1213; 2017)

Introduction

According to a recent survey by the United Nations Food and Agriculture Organisation (FAO), almost 40% of the children under five years of age are underweight.[1] In South Asia, approximately 50% of the children under five years of age suffer from stunted growth.[2] Malnutrition is estimated to contribute to more than one-third of all child deaths.[3]

Poor feeding practice is one of the major risk factors of malnutrition in children less than 5 years of age. In Pakistan, one of the main causative risk factors is low consumption of food and foods with low nutritional value. Traditional practice and sociocultural beliefs that impede early treatment of malnutrition are dangerous and significantly contribute to under 5-year child mortality rate.[4] According to a study done in Turkey, it was concluded that due to sociocultural influence, the duration of exclusive breastfeeding is relatively short as compared to the standard 6 months exclusive breastfeeding period.[5] According to another study, boys are breastfed more than the girls because of the sociocultural perception that boys need to be stronger than the girls.[6] Socially constructed gender hierarchy, the status of woman and sociocultural perception has a significant impact on the nutritional status of the child under the age of 5 years.[7]

The current study was planned to assess the impact of sociocultural perception on the nutritional status of children under five years of age.

Subjects and Methods

This cross-sectional study was conducted at the Shifa Rotary Clinic, Nurpur Shahan, Pakistan, from February to October 2016, and comprised mothers and children. Nurpur Shahan is a peri-urban community of Islamabad. The reason the study was conducted in this area was that this study sample represented various ethnic groups from different parts of Pakistan who have migrated here. Nurpur Shahan was a small area with a population of a few thousand people a decade back. Its population grew and the area became highly dense after the influx of migrants from all over the country, including the 2005 earthquake and 2010 floods because of the free land available to live on and also because of the availability of free food at the shrine of Bari Imam. The participants were selected by using convenience sampling. We used a self-constructed questionnaire comprising of 20 demographic variables and 29 variables regarding child's nutritional health (Annexure). Cronbach's alpha was measured to assess the internal consistency of the different domains of the questionnaire. Cronbach's alpha value for the questionnaire was found to be 0.87. McNemar's test was

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ANNEXURE: QUESTIONNAIRE

Mother's Name: _____ Child's Name: _____
Mother's Age: _____ Child's Age: _____
Address: _____ Gender of the child: A) Male. B) Female
Marital Status: _____
Mother's occupation: _____ Mother's educational status: _____
Father's occupation: _____ Father's educational status: _____
Family Type: a) Nuclear b) Joint
Monthly income: a) Less than 5000 b) 5000-10,000 c) 10,001 to 15,000 d) 15001 to 20,000 e) 20,001 to 25,000 f) Greater than 25000
Total Number of Family Members: _____
Number of Earning Family member: _____
Total Number of children born: _____
Mothers age at first child birth: _____
Duration of Index Child pregnancy: _____
Did you get regular antenatal checkups during pregnancy of index child pregnancy? A) Yes B) No
Place of delivery of index child? A) Hospital B) Private Clinic C) Home

Child's Nutritional Status

1)Decision Maker at home a) Mother b) Father c) In-laws d) Others If other state who _____
2)Decision Maker for child's nutrition: a) Mother b) Father c) In-laws d) Others If other state who _____
3)Did you wasted Colostrum? A) Yes B) No If yes then why did you waste it _____
4)Did anyone advice you to waste colostrum? A) Yes B) No If yes then by whom: _____
5)Were you or any elder against breastfeeding? A) Yes B) No If yes then by whom: _____
6)Were you or any elder in favour of bottle feeding? A) Yes B) No If yes then by whom: _____
7)Have you or any elder ever restricted food due to seasonal variations? A) Yes B) No If yes then by whom: _____
If restricted food, why and which food items: _____
8)Have you ever restricted food due to poverty although knowing it's good for health? A) Yes B) No
9)Do you take the child to private hospital/clinic for a checkup? A) Yes B) No
10)Do you take the child to government hospital for a checkup? A) Yes B) No
11) Do you take the child to spiritual healers? A) Yes B) No
12)Had neonate admitted to hospital or suffered any illness: A) Yes B) No
13)Was "Ghutti" given after birth? A) Yes B) No If "Ghutti" was given, what was given? _____
14)Did you exclusive breastfeed? A) Yes B) No If yes then for how long: _____
15)Total time period the child was breastfed: _____
16)Mixed feeding (Breast + Bottle): _____
17) Only bottle fed the child: A) Yes B) No
18)If child is bottle fed, which milk was given in bottle A) Buffalo B) Cow C) Goat D) Dry Milk E) Others
19)Age of child at which weaning was started: _____
20 A) Weaning started with banana: A) Yes B) No
B) Weaning started with rice: A) Yes B) No
C) Weaning started with porridge: A) Yes B) No
D) Weaning started with other foods: A) Yes B) No If yes then by which: _____
21) How many times the child was given food per:
22) Has the child been vaccinated: A) Complete B) Incomplete C) No vaccination
23) Does anyone stop you from child's vaccination: A) Yes B) No If yes then by whom: _____
If anyone stopped you from child's vaccination, then why _____
24) Child's Developmental mile stones: 1) Normal 2) Delayed
25) Child's Anthropometric measurements: _____
26) Child's Anthropometric weight:_____
27) Child's Height: _____
28) Child's Mid Arm circumference: _____
29) Childs nutritional status: A) Normal B) 1st Degree Malnutrition C) 2nd Degree Malnutrition D) 3rd Degree Malnutrition

applied to assess for test-retest reliability (p>0.05). Mothers between the age of 18 and 45 years having a child less than 5 years old were included in the study. Mothers who were temporarily a resident of the community or had moved into the community during the last 6 months were not included.

The key variables of interest included the role of in-laws in decision-making, living conditions, feeding pattern, vaccination status, and associated sociocultural perceptions. Informed consent was taken from all the participants and they were assured that their identity will be kept confidential. The sample size was calculated at 551 by using World Health Organisation's (WHO) sample size calculator, keeping 6.1% as prevalence of severe malnutrition in Pakistan, confidence interval at 95% and absolute precision at 2%.[8]

SPSS 21 was used for data analysis. Chi-square test was applied to assess the association between gender of the child and the nutrition status of the child. Chi-square test was also applied to assess the association between type of milk given in formula fed and child developmental milestones. P<0.05 was considered significant. Mann-Whitney U test was applied to determine the association between who made the decision related to child nutrition and nutritional status of the child, whether "ghutti" was given at birth or not and exclusive breastfeeding of the child. P<0.05 was considered significant. Ethical approval of the study was taken from Shifa International Hospital's institutional review board and ethics committee.

Result

Of the 600 mothers approached, 564(94%) agreed to participate. The overall mean age of participants' was 27.49±5.197 years. Most of the participants were housewives 526(93.3%), while only 38(6.5%) were working mothers. About 252(44.7%) mothers were educated. Most of the participants 358(63.5%) had a

Table-1: Sociocultural Factors.

Sociocultural Factors		Frequency
Overall Decision Maker	Mother	48(8.5%)
	Husband	302(53.5%)
	In-laws	190(33.7%)
	Others	24(4.3%)
Child's Nutrition Decision Maker	Father	106(18.8%)
	Mother	344(61.0%)
	Both parents	30(5.3%)
	In law	84 (14.9%)
Wasted Colostrum	Yes	64 (11.3%)
	No	500(88.7%)
Reason behind wasting colostrum	Advice by Elders of Family	6
	Advice by mother in law	26
	Advice by quack	2
	Advice by relatives	8
	On own accord	18
	Advice by sister in law	4
Restricted child's food due to seasonal variation and Cultural Variation	Yes	118(20.9%)
	No	446(79.1%)
If the food was restricted who recommended it?	Mother	38
	Father	20
	Father in law	2
	Mother in law	52
	Community Doctor	4
	Others	2
Restriction of food to the child due to poverty	Yes	218(38.7%)
	No	346(61.3%)
Do you take your child to a government hospital for a check-up?	Yes	564(100%)
	No	0(0%)
Do you also take your child to a private hospital/clinic for a check-up?	Yes	230(40.8%)
	No	334(59.2%)
Do you take your child to spiritual healers?	Yes	70(12.4%)
	No	494(87.6%)

Table-2: Birth and Child feeding practices.

Birth and Child feeding practices		Frequency
Pregnancy of the index child	Full Term	554(98.2%)
	Pre-Term	10(1.8%)
Antenatal checkups during pregnancy of the index child	Yes	468(86.2%)
	No	78(13.8%)
Place of Delivery	Hospital	282(50.0%)
	Private Clinic	76(13.5%)
	Home	206(36.5%)
Was the neonate admitted in hospital	Yes	62(11.0%)
	No	502(89.0%)
Was "Ghutti" given after birth	Yes	312(55.3%)
	No	252(44.7%)
Feeding pattern of the index child	Breastfed only	294(52.1%)
	Bottle-fed only	26(4.6%)
	Both Breastfeed and bottlefeed	244(43.3%)
If the child was bottle-fed what was the source of the milk	Buffalo Milk	132
	Cow Milk	32
	Goat Milk	12
	Dry Milk	94

joint family system while the remaining 206(36.5%) participants had a nuclear family system. Most of the participants 200(35.5%) had a family income in the range Rs5,000-10,000 while only 36(6.4%) participants had a family income greater than Rs25,000. The median number of children born per family was 3 while the mean age of the mother at the first childbirth was 20.31±4.28 years.

Moreover, the decision-maker for the family was husband in 302(53.5%) cases, while in-laws and the mother herself were the decision-makers in 190(33.7%) and 48(8.5%) cases, respectively. Mother was the decision-maker for child nutrition in most case 344(61.0%), while the father was the decision-maker for child nutrition in 106(18.8%) cases. About 64(11.3%) wasted colostrum, of whom 18(28.1%) acted on their own accord and 46(71.9%) on someone else's advice. The most common reasons that were given to support wasting colostrum were that it was harmful to the child, it was dirty milk, it was hot in nature, it had no benefit for the child, it was not good for child health, mother had diabetes or it was a traditional norm. About 114(20.2%) mothers or their elders were in favour of bottle feeding while 450(79.8%) mothers or their elders did not favour it. Of those in favour, 48(42.1%) were mothers themselves while 42(36.8%) were mothers-in-law. Also, 54(47.36%) favoured bottle feeding due to insufficient breast milk production. Other reasons for favouring bottle feeding were that it was easy to give, due to working mother, due to caesarean section, to fulfil water requirement of a child, child was not taking mother feed, for the health of mother and child and having twin babies. About 118(20.9%) mothers or their elders restricted and 446(79.1%) did not restrict food of the child due to seasonal and cultural variations. In most cases, the restriction was recommended by the mother herself 38(32.5%) or by the mother-in-law 52(44.07%). The reason of food restrictions included banana had cold effects and resulted in sputum formation, eggs had hot effects, oranges had cold effects and caused a sore throat and chest infection so should not be given in winter, rice caused chest infection, mangoes and curry had hot effects so not given in summer, yogurt due to cold effects and tea added in milk because milk resulted in sputum formation. About 218(38.7%) mothers had restricted food to the child due to poverty despite knowing it was not good for the child health. All of the mothers took their child for check-up to a government hospital, whereas 230(40.8%) also took their child to a private hospital/clinic for check-up. Moreover, 70(12.4%) mothers took their child to spiritual healers (Table-1).

In about 316(56.0%) cases the index child was male while in 248(44.0%) cases the index child was female. Also, 554(98.2%) of the pregnancies of the index child were full term. Most of the mothers 468(86.2%) got regular antenatal check-up during the pregnancy of the index child. About 282(50.0%) mothers delivered in a hospital setting while 206(36.5%) delivered at home and 76(13.5%) underwent delivery in a private clinic. About 62(11.0%) mother had a neonate which was admitted to the hospital. About 312(55.3%) of the index children were given 'ghutti' after birth. Honey 126(40.38%) was most commonly given as "ghutti". Other things given as "ghutti"

included readymade ghutti bottle, gurr water, green tea, goat milk, ghee, date, milk and Zamzam water. Moreover, 294(52.1%) children were breastfed only, 26(4.6%) were given bottle feed only, and 244(43.3%) were given both breastfeed and bottle feed. At the time of data collection, 166(29.4%) mothers were still breastfeeding their child. The mean duration of breastfeeding for the children who were given 'ghutti' after birth was found to be 1.50±0.74 years. Buffalo milk 132(48.8%) was the most common source of milk for bottle feed followed by dry milk 94(34.8%). About 6 mothers had not started weaning yet. For the mothers who had started mean age at which weaning was started was 0.66±0.34 years. Weaning was started with banana, rice, porridge and cereals by 292(52.3%), 274(49.1%), 242(43.4%) and 116(20.8%) mothers (Table-2).

About 382(67.7) participants' index children were completed vaccinated according to Expanded Programme on Immunistion (EPI) schedule while 130(23.0%) were partially vaccinated. Anyone with 1 or more than 1 missed vaccine was considered as partially vaccinated. About 52(9.2%) participants' index children were not vaccinated. Vaccination status was confirmed from the vaccination card. Of them, 30(57.7%) were stopped from getting their child vaccinated by someone in the family.

In 428(75.9%) children, the development milestones were normal while in 136(24.1%) they were delayed. Most of the children 310(55.0%) had a normal nutritional status while 142(25.2%), 82(14.5%) and 30(5.3%) had 1st-degree malnutrition, 2nd-degree malnutrition, and 3rd-degree malnutrition, respectively.

In our study, the male child was 2.29 times likely to have a normal nutritional status as compared to a female child ($p<0.05$). Bottle-fed children who were given animal milk were 1.65 times more likely to have delayed child's developmental milestones as compared to children who were given formula milk. Mann-Whitney U test was applied to determine the association between who made the decision related to child nutrition and nutritional status of the child, whether "ghutti" was given at birth or not and exclusive breastfeeding of the child. Mother as the decision-maker for child nutrition was found to be significantly associated with normal child nutritional status ($p<0.05$). Mother as the decision-maker for child nutrition was found to be significantly associated with "ghutti" being given to the child at birth. The child was less likely to be given exclusive breastfeeding in cases where the mother was not the decision-maker of the child ($p<0.05$).

Discussion

Exclusive breastfeeding has been recommended for the first 4 to 6 months of life as it promotes infant and child health and also helps to minimise the damage caused by the malnutrition-infection cycle.[9] In a study done in Nouakchott, it was concluded that the child was less likely to receive appropriate duration of exclusive breastfeeding in cases where the mother was not the sole decision-maker of the child health.[10] In that study, it was also found that 50.5% of the mothers were aware of the optimal duration of exclusive breastfeeding but only 14.2% complied with the recommendation due to interference from their in-laws. Another study done in Myanmar concluded that one of the major barriers to exclusive breastfeeding was that husbands and grandmothers believed that exclusive breastfeeding was not sufficient for the child and that solid food and water were necessary.[11] A study done in India concluded that cultural beliefs played a significant role in determining the duration of breastfeeding.[12] According to study, the child was less likely to be given exclusive breastfeeding in cases where the mother was not the decision-maker of the child ($p<0.05$).

In a study done on American Samoa, it was concluded that the convenience of formula, the perception among mothers that they were not producing enough breast milk, and pain while breastfeeding were the main barriers to exclusive breastfeeding.[13] The most common reasons for favouring bottle feeding in our study was insufficient breast milk production 54(47.36%). In our study, 47.9% of the mothers used formula feeding via a bottle with or without breastfeeding. About 65.19% of the children who were bottle-fed were given animal milk instead of the formula milk. Animal milk does not provide enough vitamin E, iron, and essential fatty acids. It is also hard for the baby's system to handle the high level of protein, sodium, and potassium found in cow's milk. It is also hard for the baby to digest the protein and fat in cow's milk. Greater cow's milk intake during the early years of life has been associated with increased risk of islet autoimmunity and type-1 diabetes.[14] A double-blinded study done in Costa Rica concluded that bottle-fed infants who were given animal milk were more likely to be anaemic as compared to infants who were given breast milk.[15] In our study, bottle-fed children who were given animal milk were 1.65 times more likely to have delayed child's developmental milestones as compared to children who were given formula milk.

Gender inequality is an important sociocultural predictor of malnutrition. Gender inequality leads to an inequitable distribution of food at household level.[16] In many

Pakistani families, boys are preferred to girls and, considering this gender bias, the male child is given sufficient food both in quality and quantity as compared to the girl child. This determinant affects the nutritional status of the girl child in two ways: by depriving them of essential nutrients and, secondly, by provoking psychological effects due to ignorance. Malnutrition in women continues across generation as nutritional deficiencies during and after pregnancy has a direct effect on the development of infants. In a study done in Bangladesh, it was concluded that females were 1.44 times more likely to be severely malnourished.[17] A study done in India concluded that girls were 1.05 times more vulnerable to become malnourished as compared to boys.[18] In our study male child was 2.29 times likely to have a normal nutritional status as compared to a female child. The higher rate can be explained by the fact that our study was done in a community with lower socio-economic status. According to existing literature, gender inequality is more prevalent in communities with lower socio-economic status.[19]

Sociocultural perceptions start in our community from the decision-maker in the house. In our study, the decision-maker was the father of the child in 53.5% cases while in laws and mother were the decision-maker of the family in 33.7% and 8.5% cases, respectively. This tells the pattern of life in the families and the hold of in-laws who have the decision power and can decide about the food given to the child. These results are similar to another study which concluded that in-laws, especially the grandmother, play a central role as advisors to younger women and as caregivers of both the mother and the child on nutrition and health-related issues.[20] One of the most important sociocultural perceptions is regarding food taboos, restricting food due to seasonal and cultural variations .This commonly held food belief in the Pakistani communities is the concept of hot and cold foods. Foods like egg, dates, etc. are considered as "hot foods", whereas, foods like rice, banana, oranges, etc. are considered as "cold foods". In some communities of Pakistan, it is believed that hot and cold foods should not be given. In our study, 20.9% families were restricting food as advised by the mothers-in-law and parents of the child. According to another study decreased breastfeeds, initiating bottle feeds, feeding diluted milk and reducing complementary feeds during illness was a widely common practice.[21] An important sociocultural taboo is wasting colostrum (early breast milk). In our study, 11.3% mothers were wasting colostrum which contains immunoglobulinA (IgA) and immunoglobulinG (IgG), important for the immunity of the child. According to different studies, families who decide not to give colostrum to the baby do so because they consider that it's stale milk and will harm their child and give the child cultural food i.e. "ghutti", instead. This can have a significant impact on child's health and plays an important role in contributing to the vicious cycle of under-nutrition.[22] These practices also have an impact on exclusive breastfeeding.[23]

On the basis of our findings, we recommend spreading awareness about malnutrition among parents, especially females about care of women during pregnancy; the importance of antenatal visits; diet during pregnancy; importance of breastfeeding and starting it within the first hour of birth of the baby; the importance of only breastfeeding in initial 6 months; importance of vaccination; the importance of weaning; and importance of personal and environmental hygiene and cleanliness.

Conclusion

Sociocultural perceptions had a significant impact on nutritional status of children under the age of 5 years. There is an urgent need to plan community-based nutrition programmes to create awareness about the negative impact of these dietary practices with a view to uprooting these firmly rooted beliefs.

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