ORIGINAL ARTICLE

Psychosocial Determinants of Nutritional Neglect in a Developing Country

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Abstract

Objective: To determine the demographic features and psycho-social and economic determinants of nutritional neglect in order to suggest interventional strategies.

Study Design: Cross-sectional, observational study.

Place and Duration of Study: Department of Paediatrics, Dow University of Health Sciences (DUHS) and Civil Hospital Karachi (CHK), from January 2009 to December 2010.

Methodology: All children suffering from nutritional neglect suggested by weight and height less than the third centile for age, and their mothers were recruited in the study through non-probability consecutive sampling. A team comprising of paediatrician, psychologist, medical social worker and social motivator interviewed the mothers and children suffering from nutritional neglect. Information about demographic, social, economic and psychological factors was obtained. The results were analyzed and described as frequency distribution and percentage.

Results: A total of 658 children suffering from nutritional neglect were inducted. Around 75% of children were below 5 years of age, 51% were females. Other determinants of nutritional neglect were, large family size (family of > 5 members (84%), young mother (60%), uneducated parents (67% father and 77% mothers being illiterate), low income (77% earning less than Rs. 7000/month), addiction (23%), tobacco smoking (50%) and non-nutritive substance use (51%). Psychological indicators identified in mothers were depression (70%), anxiety (73%), helplessness (70%), displaced aggression (50%) and insecurity (36%). Psychological factors identified in children as a secondary outcome were aggression (80%), rebellious behaviour (75%), lack of confidence (70%), lack of social interaction (70%) and paranoid tendencies (60%).

Conclusion: Psycho-social and economic factors are important determinants of neglect. A holistic approach and intervention at multiple levels is required to address these issues.

Key Words: *Psycho-social determinants. Nutritional neglect. Child neglect.*

INTRODUCTION

Neglect is a major cause of inadequate childcare all over the world. It implies failure to provide for the development of child in all spheres: health, education, nutrition, emotional development, shelter and safe living conditions.[1] It is thus the failure to supply the essential needs of the child including emotional needs. However, it does not include the deliberate withholding of needs, which is a form of abuse. Malnutrition is a classic example of neglect.[2] Neglect can be of various types including care neglect, environmental neglect, medical neglect, educational neglect, supervisory neglect and nutritional neglect. Except for medical neglect, all other types of neglect are correlated with each other. In addition, neglect does not occur in isolation and children who are neglected are likely to experience other forms of maltreatment.[3] Child neglect can present as a failure to thrive, which is a common problem, usually multifactorial but can also be due to nutritional neglect.[4] Unlike abuse which is deliberate and malicious, neglect is usually associated with parent's ignorance due to poverty, illiteracy and other psycho-social determinants.[3]

Nutritional neglect can lead to malnutrition which is one of the leading causes of mortality and morbidity in children below 5 years of age. The socioeconomic risk factors associated with malnutrition are ignorance, family size, mother and father's education, poverty, residence and chronic infections.[5]

Nutritional neglect among children continues to be an enormous problem for most developing countries. It is estimated that 29% of under-5 children are stunted (less than two standard deviations for height for age) or suffer chronic under-nutrition in developing countries.[6] The prevalence of stunting is extremely high for South Central Asia which accounts for almost half of the global problem.[6] Data from 53 countries have shown that over half of 133 millions deaths in children are due to malnutrition.[7]

Pakistan is the sixth most populous country in the world with a population of about 178 million and has some of

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the worst health indicators in the world. Almost 50% of the population comprises of children. Ninety four out of 1000 children do not reach their 5th birthday and 78 out of 1000 do not reach even the first year of life.[9] Pakistan has one of the highest levels of undernutrition and malnutrition in the world, where around 31.3% children under 5 years are underweight, 40.9% are stunted, 16.8% are severely wasted and 62% are anaemic.[8-10]

Local nutritional programmes have failed to address the problem because the root causes like poverty, illiteracy and socioeconomic deprivation have been largely ignored.[11]

This study was conducted to determine the demographic features, psychosocial and economic determinants of nutritional neglect and to suggest intervention strategies to manage and rehabilitate children suffering from severe nutritional neglect.

METHODOLOGY

This descriptive cross-sectional study was conducted at Paediatric Unit of DUHS/CHK, from January 2009 to December 2010. Non-probability convenient sampling was done. Included in this study were children whose weight and height were below third centile for their age. These children were admitted primarily for the management of acute severe malnutrition. Mothers of only these children (index case) were included in this study.

Neonates (and their mothers) admitted in the NICU or in step-down nursery were excluded from the study. Children who presented with malnutrition secondary to chronic illnesses like chronic renal failure, congenital heart diseases, malabsorption or chronic lung diseases etc. were also excluded from the study.

All mothers of index cases and the children (who can speak and express their feelings) were interviewed by a team comprising of paediatrician, psychologist, medical social worker and social motivator. The data included information regarding the age, sex of the index case, sibling profile, family income, living standard, economic and educational status of parents, family size, living conditions, addictions in the family, domestic violence etc. Hamilton scale of depression was used to assess the mental status of mother. Human figure drawing (HFD) test was used to assess the mental status of the children suffering from neglect. Only those who could draw or verbalize their feelings were included in the study. Informed consent was obtained from the mother before the interview.

The data was entered on Statistical Package for Social Sciences (SPSS) version 12. The results were analyzed and described as frequency distribution and percentages.

RESULTS

Data of 658 children suffering from nutritional neglect and their mothers were analyzed. Around 75% of children were below 5 years of age and 51% were females. Children below 2 years were 310 (47.2%) an additional 176 (26.7%) were between 2 - 5 years of age (Table I). Twenty five percent siblings (of index cases) were found to be suffering from inherited diseases and chronic illnesses, and 04% of siblings were found to be handicapped. Other determinants of nutritional neglect were a large family size (family of > 5 members in 84%), young mothers (60%), uneducated parents (67% fathers and 77% mothers were illiterate), poor income (77% families were earning less than Rs. 7000/month, Table II).

The non-nutritive substances used by the family members (n=658) were filtered cigarette smoking in 16% (n=105), beetle nut chewing in 09% (n=59), smokeless tobacco in 05% (n=33), tobacco snuff in 06% (n= 40), biri (local unfiltered cigarette) in 13% (n=86) and waterpipe smoking in 02% (n=13).

In 23% (n=151/658) families' more than one type of substance abuse was present. Overall tobacco smoking

Table I: Socio-demographic determinants of nutritional neglect.

Study variables (n=658)	Number	Percentage
Age distribution		
< 2 years	310	47.2%
2 - 5 years	176	26.7%
> 5 years	172	26.1%
Sex distribution		
Male	328	49%
Female	330	51%
Area of residence		
Karachi	416	63.22%
Sindh	96	14.58%
IDP's (flood affectee)	37	05.62%
Information not given	109	16.56%
Residential status		
Own house	308	46.81%
Living on rent	320	48.64%
Information not given	030	04.55%
Rooms in the house		
One	323	49.08%
Two	239	36.32%
> Two	96	14.59%
Total family members		
0 - 5	105	16%
> 5	553	84%
Number of siblings (Index child)		
0 - 2	72	10.94%
3 - 5	301	45.74%
> 5	285	43.03%
Siblings profile (Index child)		
Inherited diseases	165	25%
Chronic illnesses	165	25%
Handicapped children	26	04%
Healthy	302	46%

(all types) were identified in 50% (n=329/658) families. In 81% cases, father was the user of these substances. In 7% the older siblings were using these substances.

Table II: Parents demographic profile.

Study variables (n=658)	Number	Percentage
Age of father		
18 - 30 years	191	29%
31 - 40 years	297	45%
41 - 50 years	138	21%
> 50 years	32	05%
Age of mother		
18 - 30 years	395	60%
31 - 40 years	224	34%
41 - 50 years	33	05%
> 50 years	06	01%
Education of father		
Uneducated	441	67%
Primary	39	06%
Middle	53	08%
Matric	92	14%
Inter	26	04%
Graduate	07	01%
Education of mother		
Uneducated	506	77%
Primary	66	10%
Middle	46	07%
Metric	26	04%
Inter	07	01%
Graduate	07	01%
Father's income (Rs/month)		
< 3000	186	28.26%
3000 - 5000	180	27.35%
6000 - 7000	141	21.44%
> 7000	56	08.51%
Not working	95	14.43%
Mother's income (Rs/month) (n=165)		
< 3000	60	36%
3000 - 5000	100	61%
6000 - 7000	05	03%
> 7000	00	00%
Not working	493	75%

Table III: Psychological problems in mothers and children.

Psychological problems	Number	Percentage
In mothers (n=658)		
Depression	460	70%
Anxiety	477	73%
Feeling of helplessness	460	70%
Displaced aggression	332	50%
Feeling of insecurity	234	36%
Postpartum depression	46	7%
Symptoms of panic attacks	99	15%
In children (n=77)		
Agression	62	80.50%
Lack of confidence	54	70%
Rebellious behaviour	58	75%
Lack of social interaction	54	70%
Paranoid tendencies	46	59.70%

Addiction was identified in 23% (n=152/658) families. Of these, father was the user in 75% (n=114), mother 14% (n=22) and other family members 11% (n=16).

Domestic violence was reported by 43% (n=283) of mother (of the index child) interviewed; 15% (n=43) reported daily incident of violence. Among those who reported violence, verbal abuse by husband was reported by 63% (n=178), in addition, mother in law and father in law was reported to verbally abuse the mother in 30% (n=85) and 7% (n=20) cases respectively. Seventy seven percent (n=85) husbands also physically abused (beat) their wives. In 30% (n=85) cases mother and father in laws provoked their son (husband) to physically abuse the wife (mother of index child). Brother and sister in law were the provocateurs in 11% (n=31) cases.

Psychological indicators identified in all mothers (n=658) were depression (70%), anxiety (73%), helplessness (70%), displaced aggression (50%) and insecurity (36%, Table III).

In 189 out of 658 mothers, there were profound psychological problems, the underlying factors identified in these mothers (n=189) were unemployment in family (50%), conflict with husband (70%), financial problems (100%), domestic violence (60%) and addiction (40%).

Psychological assessment was done in 77 children only. The psychological problems identified in these children were aggression (80%), rebellious behaviour (75%), lack of confidence (70%), lack of social interaction (70%) and paranoid tendencies (60%). More than one psychological problem was identified in the same child.

DISCUSSION

Large family size, poor socioeconomic status of families, domestic violence, illiteracy and addiction in parents, maternal depression and anxiety disorders emerged as the most consistent factors resulting in child neglect in this study. A number of studies have shown that poverty and large family size are the most detrimental factors behind child neglect especially nutritional neglect globally. In USA, it was found that children whose family income per year is below US$ 15,000 are more than 25 times more likely to suffer from neglect and abuse than those families whose income is above US $30,000.[19] However, there are others who argue that neglect is seen across all socioeconomic classes.[1]

Studies done in Pakistan have also reported the association of malnutrition with socioeconomic factors.[12,13] Sethi *et al*. also found a close relationship of malnutrition with unemployment or underemployment of fathers in 98% of cases studied, and in addition 12% of these fathers were found to be addicted.[13] Similar observations made in this study where addiction (heroin mainly) and use of non-nutritive substances like

cigarette smoking, beetle nut chewing or intake of smokless tobacco were identified in 23% and 50% families respectively. In 75% cases, the users were mainly fathers (of the index child). The use of non-nutritive substances like beetle nuts, and various form of tobacco etc. is quite rife in the subcontinent. On an average, it costs a minimum Rs. 100 - 150 per day per household which poses a great economic constraint on the families with poor resources. More often, these substances are purchased by compromising the purchase of food items particularly those essential for children. A number of studies have a direct correlation of child nutritional neglect with the substance abuse and addiction. This has been observed in the study too; the misplaced priorities in resource constraint communities are affecting the nutritional status of the children badly.

This study is one of the very few studies which tried to evaluate the mental health of the mother and its impact on child neglect. It shows a close association of nutritional neglect with maternal depression, anxiety, feeling of helplessness and insecurity. The present child nutrition programmes do not adequately address the mental health of the mother.[14] Most of the mothers of nutritionally neglected children in this study were found to be suffering from depression. Similar observation was made by Anoop *et al*.[15] who also showed that malnutrition was associated with maternal postpartum depression, current major depression and low maternal intelligence.

This study has identified a very high prevalence of psychological problems in children suffering from nutritional neglect. Nutritional neglect, especially if it occurs early in life has been shown to delay the development of brain, which can be responsible for cognitive and psychological problems, which in turn can be manifested by social and behavioural problems. These psychosocial and behavioural problems can include being quiet, submissive and apathetic; depression, anxiety and low self esteem; self abusive behaviour e.g. suicide attempts or cutting themselves; aggressive and delinquent behaviour or involvement in adult criminal activities.[16]

A majority of parents of nutritionally neglected children, particularly mothers, were found to be illiterate. A study conducted in Malir, Karachi, reported a definite association of malnutrition of children less than 3 years of age, with illiteracy of mothers.[12]

In this study, large family size (> 5) was seen in around 83% of cases. According to the Pakistan Demographic Health Survey (PDHS) 2006-07, Pakistan has a fertility rate of 4.1, contraceptive prevalence rate of 30% and an unmet need for family planning of 25%.[17] Improving the reproductive health and family planning services may help in increasing the interval between pregnancies, thereby leading to improved maternal and child health.

Young age of mothers was found to be an important determinant of nutritional neglect in this study. Pakistan Demographic and Health Survey 2006 - 07 shows that children born to very young mothers have a higher risk of mortality and morbidity. Secondly, the teenage mothers are at a greater risk of developing pregnancy complications and of dying due to them. Finally, an early marriage will cause these young girls to be pulled off from school thus, denying them the opportunity of education, and lowering their socioeconomic status in the society.[17] Increasing the enrollment of girls in schools and retaining them for primary and secondary education will reduce the chances of early marriage. Furthermore, an educated mother's children will have a decreased chance of being stunted and underweight compared to uneducated mothers. Thus, increasing the marriage age of girl child and improving the literacy levels of both males and females may prove to be a beneficial factor in prevention of neglect.

There is enough evidence that nutritional neglect is multi-factorial in nature and, therefore, requires a multidisciplinary approach. There is need for the development of programmes that integrate child development, health and nutrition. The interventions are needed at multiple levels as isolated interventions will not produce the desired results.[1]

Two interventions have been suggested in the literature which if used early (before the birth of the baby), may prevent or reduce the risk of harm to the children due to neglect. One is the 'Olds model' which uses intensive nurse home visiting, starting from antenatal period and continuing till the infant is two years old.[18] This program has been shown to have a positive impact on parenting attitudes and behaviour and in reducing the rates of child neglect. Second is the STEEP project (Steps toward Effective, Enjoyable Parenting) which utilizes home visits and group support and education for expectant mothers, and helps to improve the mother-infant relationship. This program has been associated with: improving the mothers' understanding about child development and management skills, reducing the risk of depression, improving birth spacing and better understanding for child's cues and signals and their nutritional needs.[12]

This study indicates that nutritional neglect has multiple psychosocial and economic determinants and, therefore, prevention strategies will have to target these multiple contributing factors at the individual, family and community levels.

CONCLUSION

This study has identified important psychosocial and economic determinants of nutritional neglect. There is substantial evidence that poor health and nutrition affects children's development. Intervention is needed at

multiple levels as isolated intervention will not produce the desirable results.

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