Impact of Village based planning - need oriented community initiative to address Malnutrition among children in the age group of 0 to 5 years in rural areas, Vidarbha, Maharashtra.

Dr. Amrapali Gajbhiye

1. Professor cum Principal, Vspm Madhuribai Deshmukh Institute of Nursing Education Nagpur

ABSTRACT

Malnutrition has been a major problem in India for a long time, particularly in rural areas. A number of new comprehensive programmes have been implemented to address this issue from time to time across the nation. Despite the multiple attempts, the problem of malnutrition has not been resolved to the desired level and continues to exist..**Aim of the study :** To assess the prevalence of various nutritional problems among children of 0-5 years, and Facilitate village-based planning strategy to address the issue of malnutrition, **Methodology:** An experimental epidemiological study pre- and post-intervention assessment with a control group, adopted community trial approach. Children aged 0-5 years from selected villages fulfilling the study selection criteria were included. **Results**: At the end of study period, the overall prevalence of malnutrition in study and control groups were45.14% and 70% respectively. In the study group subjects, the prevalence of underweight, stunting and wasting reduced to 26.54%, 46.91% and 16.43%, respectively whereas in the control group the corresponding prevalence remained at 35.95%, 36.68% and 23.55% respectively .The size of the impact of village-based strategy was found to be 26.41% in the study group over the control group subjects, which was more than the pre decided level of success of 15%. **Conclusion:** In order to sustain the benefits over a longer period of time and get the interventions mainstreamed in the community it is necessary to keep up the interest and motivation of village based committees through constant follow up along with grass root level health care workers.

KEY WORDS Impact ,Assess ,Village based planning ,oriented community initiative ,Malnutrition, children under five

INTRODUCTION

The millennium development goals of the United Nations include eradicating malnutrition as one of its primary concern. Malnutrition in early childhood affects all the stages of learning, for example-psychomotor, affective and cognitive skills[1].For more than 10 years, childhood under-nutrition has become an important public health and development challenges in India. Comparatively, malnourished children are at higher risk of diseases that even leads to death than well-nourished ones. It has also lead to an increase in growth retardation and impaired development in children.[2] Out of the multiple factors that contribute towards malnutrition, inadequate quantity and quality of food cause. Malnutrition is also associated with lack of health education, hygiene and feeding practices[3]. According to the National Sample Survey -4 2015-2016, 35% of children are underweight, 38.4% are stunted, and 21% are wasted[4]. The correlation between poverty rates and malnutrition rate was around 0.7 (using either Mixed Reference Period or Uniform Reference Period based estimates).[5] Many countries agree that public health measures like clean drinking water, sanitation, proper sewage, control of communicable diseases, and appropriate health education play a significant role in dropping mortality rates at every age and across gender.[6] In the Indian context, access to water and toilets, breastfeeding (to impart immunity in an unhealthy environment), access to medical facilities, availability of vaccination and vitamin supplements are possible factors that keep a check onmalnutrition.[7] In adequacy of public health measures results in the prevalence of gastrointestinal infections (even if they do not evidently show up as a disease), that prevents the absorption of vital nutrients from the consumed food into the body. Sometimes even if enough food is available, the child may not be able to ingest or absorb it properly which in turn causes under-nutrition.[8]

AIM OF THE STUDY

Aim of the study was to assess the prevalence of various nutritional problems among children of 0-5 years, and Facilitate village-based planning strategy to address the issue of malnutrition,

NEED FOR THE STUD

The nutritional problems in India continue to remain. Taking into account the complexity of the problems and multidimensional issues involved at the root level, these programme and planning have only shown peripheral considerations for community engagement, participation and ownership principals to solve the issue of malnutrition.[32]As a result, it is high time to look into the depths of the problem by understanding the situations inside the house, in the immediate surroundings as well as in the community in general to evaluate factors responsible for various types of nutritional problems. The present research study was therefore undertaken to adopt a village-based planning strategy, with due considerations to community involvement, participation and ownership principles to deliver scientifically-sound and appropriate need-based interventions, and address various nutritional problems like under nutrition.

METHODOLOGY

In view of the nature of the problem selected for the study and the objectives to be accomplished. Present study includes both qualitative and quantitative data.In this study, the design used is an experimental epidemiological study -Pre& post-intervention design - community trial approach with the objective of assessing the impact of village based strategy .The Setting for the present study are the selected rural areas of Nagpur district.

Rural hospital Katol (District Nagpur, Maharashtra state) affiliated to NKP Salve Medical College as its field practice area caters to the referral needs of 4 PHCs around i.e. Yenva, Kacherisawangi, Kondali, and Paradshinga. Out of these 4, the Yenva PHC was randomly selected for the purpose of the present study. Under the Yenva PHC, there are5 sub-centers (Zilpa, Mendki, Esapur, Sonuli ,Yenva), of which 2 sub centers – Zilpa & Mendki were chosen randomly as study and control group areas respectively. Most of the villages under them are located more than 8 km, from the PHC headquarter. All the 5 villages under the study group (1.Zilpa, 2.Gondi kappa, 3.Jatamanzari, 4.Gondimohagao, 5. Mazikappa) and control groups (1.Tapoli ,2.Goharikapa 3.,bori,4.sonuli, 5.mendki) were selected for the purpose of the present study.In this study, the research variable is -The nutritional status of under-five children in the selected rural areas of Nagpur district.Null hypothesis: Proposed village based planning strategy for prevention and control of malnutrition will not lead to significant changes in the prevalence of various nutritional problems.Alternative

hypothesis: Village-based planning strategy will lead to a significant reduction in the prevalence of various nutritional problems in a rural set up as assessed with the help of a predetermined set of indicators. Study area is Rural field practice areas under N. P. K. Salve Medical College, District - Nagpur, Maharashtra. Study Population is Children in the age group of 0 to 5 years from the selected villages affiliated to the Medical/Nursing College. Study participants are 1. Mothers of under-five children in the selected villages ,2. All the children in the age group of 0 to 5 years from the selected villages fulfilling inclusion and exclusion criteria . Study type is An experimental epidemiological study-Pre & post- intervention assessment with control group - community trial approach.This is a community based two- arm cluster randomized study conducted in Nagpur District. One block (Katol) was purposively selected considering convenience and feasibility aspect. There are total 4 PHC in Katol Block. One PHC (Yenava) was randomly selected. There are 5 sub centers in Yenva PHC out of which 2 sub centers i.e Zilpa & Mendki were randomly selected. Zilpa sub-center has 5 villages which were selected as study group whereas Mendki with 5 village included in control group. Thus all the eligible under-five children available in cluster were included in our study sample.Overall 310 under -five children were allocated to intervention arm and 320 were allocated to control arm.Current statistics of baseline prevalence of malnutrition in the under-five children in rural Maharashtra.Validity refers to the degree to which an instrument measures what the it suppose to measures[109]. The tool was validated by experts from tool validity committee from MGM University Navi Mumbai. Valuable suggestions were given and the necessary corrections were made after consulting with the guide. Reliability is the degree of consistency and accuracy with which an instrument measures the attribute for which it is designed to measure[110] For the purpose of assessing reliability of the tool **(**questionnaire)preliminary data on 30 families was collected ,Reliability of the tool was assessed using internal consistency measures i.e. cronbach-alpha coefficient indicate moderate to high reliability (Coronach-alpha =0.71).Reliability was also measured between two observer researcher (observer 1)and Expert (observer2) by Karl Parsons correlation coefficient (r=0.93) indicates high reliability.

RESULT-

TABLE NO :1- Assessment of malnutrition in female children under the age group of 0 – 5 years

	Baseline		Second quarter		change	Difference	Z Test
	F	%	F	%			Z=2.6786 P=0.0074 S
Study group	63/178	35.39	41/197	20.81	14.58% P=0.0016)	8.93%	
Control group	51/158	32.28	49/184	26.63	5.65% P=(0.2523)		

The above table describes the prevalence of underweight in female children before and after the intervention package in both study and control groups.Within the group comparison from baseline to Third quarter: In study group prevalence of underweight children was reduced from 35.39% to 20.81% and this change 0f 14.58% was found significant (p= 0.0016) In control group prevalence of underweight was reduced from (32.28% and 26.63%, p=0.2523, NS) at baseline and Third Quarter.Between the group comparison of the change in two groups: There was a highly significant difference (8.93% P= 0.00074) found between study and control group when a change in both groups was compared (14.58% Vs 5.65%).

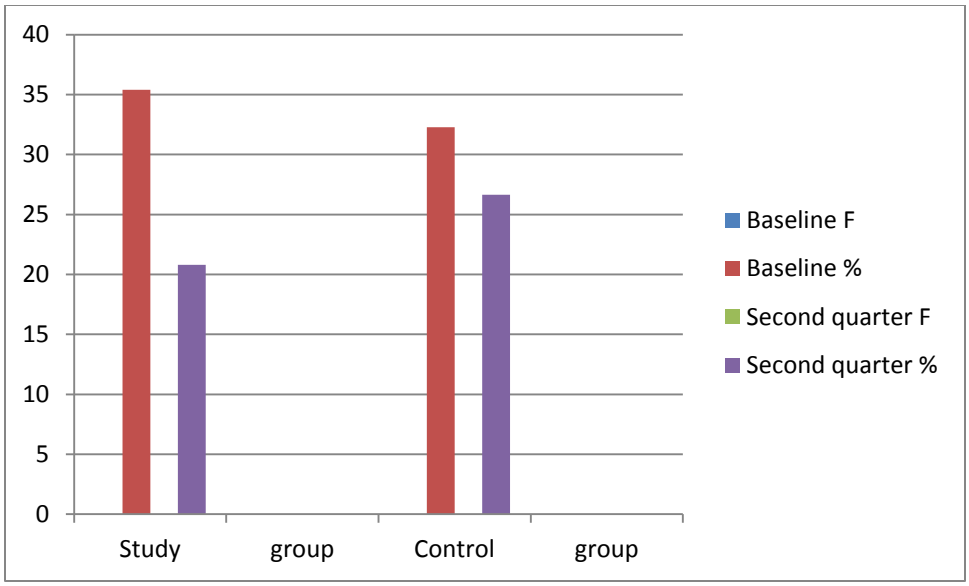

Fig No :1- Assessment of malnutrition in female children under the age group of 0 – 5 years

TABLE NO-2-Assessment of malnutrition in female children under the age group of 0 – 5 years

	First quarter		Second quarter		Change	Difference	Z Test
	F	%	F	%			
Study group	52/132	39.39	35/157	22.29	17.10 P=(0.0016)	15.43%	Z=4.6942 P=0.0001 S
Control group	48/162	29.63	52/186	27.96	1.67% P=(0.7309)		

The above table describes the prevalence of underweight in female children before and after the intervention package in both study and control groups. **Within the group comparison from baseline to Third quarter:** In study group prevalence of underweight children was reduced from 39.39 % to 22.29% and this change 0f 17.10 % was found significant (P= 0.0016) In control group prevalence of underweight was found almost similar (29.63% and 27.96%, P=0.7309, NS) at baseline and Third Quarter.

Between the group comparison of the change in two groups: There was a highly significant difference (15.43% P= 0.0001) found between study and control group when a change in both groups was compared (17.10% Vs 1.67%).

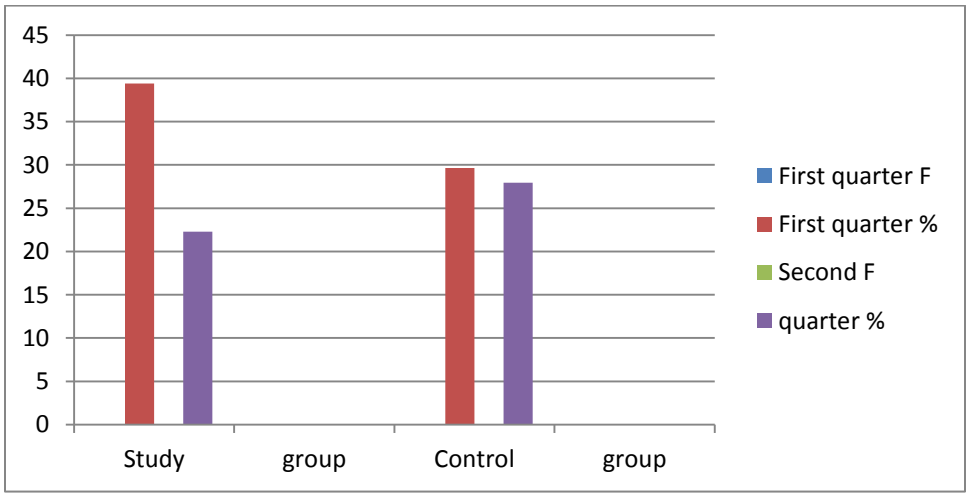

FIG NO-2-Assessment of malnutrition in female children under the age group of 0 – 5 years

DISCUSSION

In present study, among conditions that influenced under-five childreninour study group, 18.06% were acute respiratory tract infection (RTI), 16% diarrhea, and 9.03% fever. While in the control group, acute RTI was noted in 13.12% children, diarrhea in 5% children and fever in 5.61% children. In thes study by TiwariS et al, in 2015, 64% children suffered from acute RTI and 82.7% from diarrhea in Mumbai.[33] Majority of the children in our study (40.97%, study group; 30.63% control group) belonged to the lower and middle socioeconomic class. Various studies have identified that a number of demographic and socioeconomic factors are associated with malnutrition.[119]Tiwari S et al, in 2015, reported socioeconomic development as an important factor to combat malnutrition in Mumbai.[33]ChoudhariD et al, in 2008, found a significantly higher rate of malnutrition among female children compared to the males among the higher birth order and those belonging to families with lower per capita incomein Bengal.[118] A study by Biradar MK et al found that children with low economic status in Raichur were severely malnourished in 2010.[21]Nearly 75% of thes malnourished population in the study by Dhatrak Pet al belonged to socioeconomic class IV & V in Nagpur.[22] To achieve our first study objective, the nutritional status of all children was categorized according to the WHO criteria for

malnutrition. The prevalence of malnutrition at baseline was similar in both our groups (87.10%, study group; 85%, control group). Majority of male children had a stunted growth (39.62%), which was followed by underweight (29.56%) and wasting (25.16%) in the study group, and was similar to that in the control group (stunted growth, 34.93%; underweight, 29.45%; wasting, 30.82%. While among female children, majority in the study group were stunted (46.85%), followed by underweight (27.03%) and wasting (17.12%), whereas in the control group 38.09% were stunted, 27.78% were underweight, and 18.25% were wasted.

CONCLUSION

The present study find out the prevalence of under-five children, and to assess the impact of village based strategy The present study account in adopting and village based strategy 310 children in study group and 320 children in control group were included. The important component of the interventions package included family level i.e village level strategy i.e and the follow up were undertaken once in quarter in study and control group.At the end of intervention in study group the assessment of prevalence of malnutrition was repeated and it was conformed that intervention has made the impact to the extent 41.96% as against the acceptable level of change of 15% in terms of underweight , stunting and wasting in the village thus the present study compiles to accept alternate hypothesis. And mainly input the component which are familiar to undertaken to at family and community level. Persistent efforts along with health care staff working at village and grass root level is the key factors responsible for bringing out the said impact

REFERENCES

UNIC Canberra WHO Health in 2015:from MDGs to SDG (cited2019 july12) https://issuu.com/uniccanberra/docs/who_health_in_2015from_mdgs_

1. Malnutrition and health in developing countries, Request PDF cited 2019 August 10].https://www.researchgate.net/publication/7682500_Malnutrition_and_ health _in_developing_countries.
2. Nutritional assessment among children (1–5 years of age). [cited 2019 July12]. http://www.ijcfm.org/article.asp?issn=23952113;year=2019;volume=5;iss ue=1;spage=39;epage=43;aulast=Gupta;type=3.

3. International Institute for Population Sciences (IIPS) and ICF .2017…The NFHS-4 Sample is a Stratified two stage.
4. Poverty and childhood under-nutrition in developing [cited 2019 June 9]. https://www.researchgate.net/publication/4553615_Povertyand_childhood _undernutrition_in_developing_countries_A_multinational_cohort_study.
5. Water and Sanitation in Developing Countries: Including [cited 2019 June12]. https://www.researchgate.net/publication/6538440_Water_And_Sanitation _in_Developing_Countries_Including_Health_in_the_Equation.
6. Global forum on food security and nutrition. [Cited 2019 July 13]. http://www.fao.org/fsnforum/sites/default/files/files/132_decade_nutrition/ proceeding_en_decade_Nutrition.docx.
7. Gibney M. Food and Nutrition-Related Diseases: The Global Challenge [Internet]. Introduction to Human Nutrition. [Cited 2019 June 16]. https://www.academia.edu/2611783/Food_and_Nutrition,Related_Disease s_The_Global_Challenge
8. An approach to regional planning in India.[Cited 2019 June 20]. https://www.researchgate.net/publication/264813930_An_approach_to_re gional_planning_in_India
9. URB 200 Final Review Flashcards | Quizlet [Cited 2019 Sept 17]. Available from: https://quizlet.com/64777604/urb-200-final-review-flash- cards/
10. UN-Habitat, Unhabitat. National spatial strategies Saudi Arabia ,Issue. [cited 2019Dec9], https://issuu.com/unhabitat/docs/national_spatial_strategies-
11. Bhandari N, Bahl R,Taneja S, Strand T,Molbak K,Ulvik Rj,et.al.Effect of substantial reduction in sever diarrheal morbidity by daily zinc supplementation
12. Indian children paediatrics 2002;109;86-92
13. sProtein-energy malnourished children: Topics by Science.gov. [cited 2019 May 13]. Available from: https://www.science.gov/topicpages/p/protein- energy malnourished children.html

14. Rathaur K.V. Prevalent Infant Feeding Practices Among The Mother Presenting At A Tertiary Care Hospital In Garhwal Himalayan Region, Uttarakhand, Indian JFMPC 2018:7(1);45-52
15. Dey I, Chaudhuri R N.. Gender inequality in nutritional status among under five children in a village in Hooghly district, West Bengal. Indian Journal of Public Health, 52(4): 218–220.
16. Ramachandran P, Gopalan HS.Assessment of nutritional status in Indian preschool children using WHO 2006 Growth Standards. Indian J Med Res. 2011 Jul;134:47-5