A Review on Incidence of Protein Energy Malnutrition and Its Associated Risk Factors Among Pre – School Children.

Abstract:

Children are typically most inclined and least successful to assist themselves. Malnutrition in its many types of undernutrition has been coined as “silent emergency” by way of capability of United Nations Children's Fund (UNICEF). Rural region indicates inequalities in distribution of beneficiaries in form of structure, overall performance and patterns of economic growth. To estimate occurrence of Protein Energy Malnutrition (PEM), to discover out association between a variety of elements and incidence of malnutrition and to look at a range of elements of feeding of child with incidence of malnutrition in pre – school children of 3-6 years of age. Data collection done basedon survey methods once performed on 3-6 years old children and found that 27.96% pre-school children had been underweight and 6.71% pre-school children were severely underweight according to research studies conducted in 20 article papers. Malnutrition used to be regarded in 42.78% pre-school children amongst those who did not eat energy dense food as per Recommended Dietary Allowance (RDA). Protein energy malnutrition in form of underweight was existing in extra than one 1/3 children. Higher occurrence of malnutrition used to be once decided in young children who had delivery weight of much less than 2.5 kilograms, having interpregnancy interval of a whole lot less than 24 months, of delivery order of 4 or more, who have been breastfed for a duration of 6 to 12 months, to whom complementary feeding was once started before the age of 6 months or who had been partly immunized.

Key words: Children of 3-6 years of age, Protein energy malnutrition, Underweight, Recommended Dietary Allowance (RDA), United Nations Children's Fund (UNICEF).

Comment [MOU1]: 1.The abstract is not direclty visible in the provided content. An Abstract should succinctly summarize the background, objectives, methods, results and concluions. For comprehensive evaluation, the abstract should include details such as the study design, population/samples, significant results and implications for practice. There is no specific details about the methods used for data collection, the sample or the location of the study.
The abstract mentions rural regions and inequalities but does not provide a clear background information about the study area.

1.Introduction

The health of the humans is the wealth of a nation and good nutrition is one of the most essential pre-requisites for precise health. Child malnutrition is a broad spread public health trouble having international consequences because quality nutrition is an indispensable determinant for their well-being (Nair, 2017). The good nutrition of babies and young children are causing tremendous difficulty among social scientist’s thing of view, every in absolute phrases as proper as in relation to the whole population, is relatively large aid allocation to meet accelerated infanthealth status (David, 2013). To the health economist, the areas of young children health and good nutrition are equally challenging. The three of the eight Millennium Development

Goals (MDGs) emphasize on health which consists decrease in young child mortality, improved maternal health conditions (Sehgal, 2019).

Fig 1. Health condition

An individual's nutritional degrees is determined by using potential of a number of factors indirectly or directly such as, levels of employment, meals availability, meals consumption pattern, buying power of the people, distribution of income, intra-household ingredients distribution, level of dietary knowledge, literacy, availability of government schemes and awareness, etc. There is true evidence that good nutrition and economic enchantment have a two-way relationship. Improved economic status in turn contributes to improvementin nutritional status, but higher importantly, improved nutrition drives prolonged socio-economic growth (Kumar, 2014).

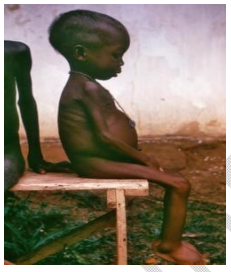

Fig 2. Malnutrition

The immunological defects in young childrenwith extreme protein-energy malnutrition have been well described, as has the interaction between malnutrition and infection. Several research have been carried out to determine the microorganisms associated with infections in such children. Most of this research have been concerned generally with bacterial infections. As there may additionally be geographical differences in the predominant infectiousaffecting severely malnourished children, the existing find out about used to be undertaken to determine those agents, viral, bacterial, fungal and parasitic, related with infections in such children admitted to this hospital (Sumit, 2019).

Comment [MOU2]: Not clearly mention the interval of ages

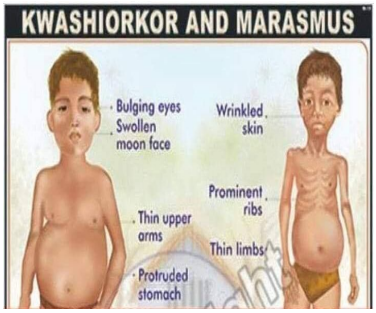

Fig 3.Immunological defects

worldwidefifty-two million young children underneath 5 years of age are wasted, 17 million are severely wasted and one hundred fifty 5 million are stunted. Around 45% of deaths amongst children under-5 years of age are linked to undernutrition. According to National Family Health Survey (NFHS) – 4, under-5 mortality in India is 50 per one thousand proceed to be births, 38.4% youthful adults below 5 years of age are stunted, 21% are wasted, 7.5% are severely wasted and 35.7% are underweight (Mittal, 2017).

2. Literature review

Comment [MOU3]: It does not provie proper citations or references

Based on the research aim, an online search was conducted relevant for the topics of Nutritional status assessment of under-five children and impact of PEM and is associated risk factors, the databases considered were The Journal of Family Welfare, Australian Medical Journal, Indian Journal of Community Medicine, Indian Journal of Medical Sciences, Bulletin of the World Health Organization,Journal of Youth and Adolescence, Indian Journal Maternal and Child Health, American Journal of Clinical Nutrition,andUnited Nations Children's Fund (UNICEF) and World Health Organization (WHO). Basic search criteria restricted results to articles published from 2013onwards, exclusively in English. More specifically, keyword searches in 'abstracts, titles and keywords or 'topic' were conducted for the following terms: 'Children of 3-6 years of age with PEM', 'protein energy malnutrition survey', 'underweightand its associated risk factors','severe protein energy malnutrition in pre-school children','recommended dietary allowance (RDA) for pre-school children', and 'risk factors associated with PEM in children.'

3. Results

By comparing all 20 articles and found thati.e., 363 (40.6%) were in the age group of 4-5 years, followed by 309 (34.56%) in the age group of 3-4 years and 222 (24.83%) in the age group of 5-

6 years. Observation also shows that out of 894 children 463 (51.79%) were males and 431 (48.21%) were females (Bishnoi, 2018).It reveals children, 310 (34.68%) children were malnourished of whom 250 (27.96%) were underweight while 60 (6.71%) were severely underweight. Sex wise distribution of malnutrition was found to be somewhat higher in females (35.27%) than males (34.13%) (Onis, 2019).

Comment [MOU4]: Not clear definitions or reference to established criteria for malnutrition assessment.

According to 20 articles the incidence of malnutrition was higher (42.78%) in young children who don't eat energy dense food as per Recommended Daily Allowance (RDA) in comparison with same age group who eat energy dense food as per RDA (22.71%). Observed difference was statistically highly significant (Sen, 2018).

It shows that affiliation between various demographic variables and malnutrition in children. The occurrence of malnutrition used to be greater i.e., 39.78% in teens belonging to limit social classification in distinction to children belonging to top social class (26.97%). Observed distinction used to be statistically exceptionally significant. Prevalence of malnutrition used to be higher i.e., 37.07% in kids belonging to nuclear families, followed by means of 35.82% and 28.91% in adolescents belonging joint families and three science households respectively (Bellamy, 2018). Observed big difference used to be statistically no longer significant. Distribution of young children in accordance to kind of residence published that occurrence of malnutrition used to be higher (38.22%) in youngsters who dwelled in overcrowded houses, while it used to be minimized (28.35%) in children who dwelled in homes where there was once no overcrowding. Observed difference was once statistically significant. Literacy status of moms established that prevalence of malnutrition used to be excessive in children of mothers who had been illiterate i.e., 41.71%, while prevalence of malnutrition was as soon as much less (32.5%) in youngsters of moms who had been literate. Observed difference used to be once statistically significant. Prevalence of malnutrition was once higher amongst kids of mothers who had been labourers and worried in agricultural work (52.05% and 44.34% respectively) as compared to this childhood whose mothers had been home maker (32.12%), doing commercial organization (20%) or doing issuer (11.76%). Observed distinction was statistically extraordinarily significant (Kumar, 2014).

Results in addition printed that the prevalence of malnutrition used to be 35% in kids who were breastfed for a dimension of 6 to 12 months as compared to 34.93% and 23.81% early lifestyles

who have been breast fed for higher than 12 months and a terrific deal lots a lot an exceptional deal much less than 6 months respectively. Observed distinction used to be as rapidly as statistically no longer significant. Prevalence of malnutrition used to be a specific deal a lot lots much less in young adults to whom complementary feeding used to be commenced out at or after the age of 6 months (33.49%), whereas it used to be as rapidly as accelerated in children to whom complementary feeding used to be started before than the age of 6 months (50%). Observed difference used to be as quickly as statistically significant. Immunization status of young adults validated that the incidence of malnutrition used to be as all at once as soon as immoderate in in part immunized children i.e., 72.34%, at the same time as it used to be 32.59% in simply immunized children. Observed big difference used to be statistically especially significant (Sumit, 2019).

4. Discussion

Comment [MOU5]: The discussion section could be improve by offering detail the implications of the findings, comparing them more extensively with existing literature and discussing potential limitation of the study.

According to National Family Health Survey (NFHS) – 4, 35.7% pre-schoolars below 5 years of age had been underweight and 11% young children were severely underweight. The results had been similar to the current study. National Family Health Survey – four (2015- 2016) pronounced that negative wealthy ratio used to be almost 2.5 for underweight class that means lowest quintile group has 2.5 times more incidence of underweight (48.6%) in contrast to highest wealth quintile team (20.1%). The outcomes of the existing study were slightly one of a kind from NFHS – 4 The motive in the back of higher quantity of youth being malnourished belonging to nuclear households was lack of know-how regarding suitable feeding habits or working parents. Mahendraker et al (2015) found similar effects in their study that morbidity in young people was once extra common in overcrowded homes than in non-overcrowded house. A. Mittal and S. K. Ahluwalia (2017) in their learn about additionally found similar consequences of high incidence of malnutrition in youngsters of illiterate moms (60.9%) as compared to teens of mother's education above high faculty stage (21.2%). A. Mittal and J. Singh (2017) also determined similar results of high occurrence among young people of working mothers (46.15%) as compared with housewives (37.8%).

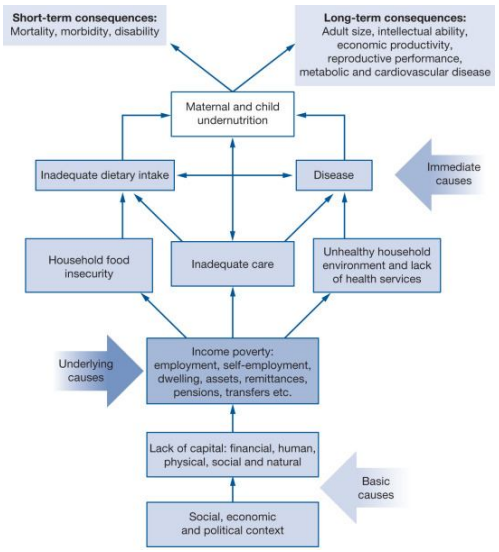

Fig 4. Maternal and child undernutrition

M. Shafiqur Rahman et al. (2016) located similar results that the incidence of malnutrition was excessive (56.2%) in teenagers with low delivery weight as compared to teenagers (38.1%) having normal start weight. J. Lakshmi A and K. Begum (2018) in their study additionally located comparable effects of greater incidence of malnutrition with higher start order, it was observed 34% in delivery order 1, 39% in birth order 2-3 and 56% in delivery order more than four or more. Victora CG et al. (2016) in their find out about found that prevalence of malnutrition was smallest in these youth breastfed for three to 6 months, however after this age dietary status seemed to be worse in those breast-fed for longer. The effects have been comparable to the current study. The cause behind a greater number of young people determined being malnourished who were breastfed for the period of 6 to 12 months and for extra than 12 months was that suited complementary feeding used to be not initiated after the age of 6 months. Anita Khokhar and S. Singh (2018) in their learn about additionally found similar effects that the prevalence of malnutrition was high in adolescents weaning early (64.8%) as in contrast to young children breast feed completely up to six months (35.2%). S. N. Dwivedi et al (2017) in their study located that immunized young children trip much less malnutrition (57.0%) in comparison to unimmunized children (66.40%).

5. Conclusion

Protein energy malnutrition (PEM) in the form of underweight was present in more than one third children, while some children suffered from severe underweight. Incidence of malnutrition was somewhat higher in female children than in male children. Incidence of malnutrition was highest in the age group of 5 to 6 years and lowest in the age group of 4 to 5 years. Children who did not consume calories as per Recommended Daily Allowance (RDA) for their age showed higher prevalence ofmalnutrition in comparison to those children who were consuming calories as per RDA. Incidence of malnutrition was more in children belonging to social class I, belonging to nuclear families, who dwelled in overcrowded houses, whose mother were illiterate or of mothers who were labourers and engaged in agricultural work. Higher prevalence of malnutrition was found in children who had birth weight of less than 2.5 kilograms, having interpregnancy interval of less than 24 months, of birth order of 4 or more, who were breastfed for a period of 6 to 12 months, to whom complementary feeding was started before the age of 6 months or who were partially immunized.These factors lead to development of micro and macro nutrients deficiency in turn lead to development of PEM.

Recommendations

Maternal literacy is positively associated with child rearing practices and utilization of child health services. So, girl literacy needs to be extended for promotion of toddler health, prevention of malnutrition and related morbidities and greater utilization of services. Mother's ought to be counselled involving young infant feeding practices like value of colostrum's, initiation of breast feeding, splendid breast feeding all through antenatal period. Nutritional education and time to time counselling of mothers should be completed regarding initiation of complementary feeding and moreover the exceptional and quantity of meals that can be given after six months of age. Health care companies like anganwadi workers, ASHA and Female Health Workers prefer to be sensitized time to time about infant and younger infant feeding. Immunization protects in the direction of frequent vaccine preventable diseases and additionally has shielding effects over stunting. Routine immunization coverage has to be maintained at excessive level and services prefer to be strengthened. Regular boom monitoring of each and every toddler by means of capacity of skilled and qualified health care carriers is very quintessential for early detection in

amplify faltering. Monitoring activities for country of affairs of malnutrition and factors responsible for it at regional stages ought to be strengthened and supervised.

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