ABSTRACT

Introduction

Nutrition is very essential for the children below five years of age. Insufficient nutrients intake during early phases of development, predisposes them to develop nutritional deficiencies and altered growth and development. In order to overcome the problem of malnutrition it is necessary to have an intervention which is not only effective but also it is reachable, feasible, culturally acceptable and can also be combined with local health services. The present study focuses on developing and testing a nutritional intervention specific to the needs of children in the hilly areas of North India. The objectives of the study were to assess the nutritional status of children, explore the risk factors of malnutrition and evaluate the effectiveness of Family-Based Intervention Program (FBIP) on nutritional knowledge and nutrition related practices of mothers.

Materials & Methods

The present study was conducted in two phases. In phase I, exploratory approach with cross-sectional survey design was adopted to identify the nutritional status of children and to explore the risk factors related to malnutrition. Muti-stage cluster random sampling technique was adopted to select a sample of 703 children, aged 1-3 years, from four sub-centers selected as clusters. Door-to-door survey was done for assessment of nutritional status of children and to explore the risk factors.

All the children identified as malnourished in the Phase I were recruited for the Phase II of the study. The research approach used for phase II was experimental approach with cluster randomized control trial design. The four selected sub-centers were randomly allocated to intervention (two sub-centers with 75 children) and control group (two sub-centers with 74 children). Nutritional status was estimated from anthropometric measurements, and semi-structured questionnaires were used to assess the risk factors of malnutrition, nutritional knowledge and nutrition related practices. The intervention group received Family Based Intervention Program. Post-tests were conducted at 1^{st}, 3^{rd} month, 6^{th} and 9^{th} month.

Results

The result of the study shows that, 76 (11%) children were underweight, 74 (10.8%) children in mild to moderate category and 2 (0.2%) in severe category. About 39 (5.5) children were found to have wasting, 28 (4%) with mild wasting and 11(1.5%) with moderate wasting. Stunting was found in 88 (12.6%) children, 87 (12%) in mild to moderate category and 1 (0.14%) in severe category. The overall prevalence of malnutrition was 152 (21.6%).

The common risk factors of malnutrition identified in the study were anemia during pregnancy, birth weight of child below 2.5 kg, non-initiation of breast feeding within one hour of birth, weaning before six months, bottle feeding, recurrent illness during childhood, skipping of meals, not enjoying meals while eating, open drainage, not having pucca house, not having toilet and not sowing own vegetables were significant factors related of nutritional status of children.

A significant difference was observed in the nutritional status between groups in terms of weight gain. The mean weight of intervention group was significantly higher than the control group at 6^{th} (10.79 ± 0.81, 10.32 ± 1.01, $t = 3.08$, $p < 0.05$) and 9^{th} month (11.32 ± 1.51, 10.68 ± 2.26, $t = 3.08$, $p < 0.05$). No significant difference was observed in height. The post-test nutritional knowledge and nutrition related practices were also significantly higher among the experimental groups ($p < 0.05$).

Conclusion

Malnutrition in under five children is very significant problem affecting their health. The present study shows that Family Based Intervention is effective in improving the weight of children. So, interventions like screening of children at regular intervals, exploring the risk factors of malnutrition and providing need-based intervention involving the active participation of parents can be adopted as a measure to reduce malnutrition prevalence in children.

Keywords:

Nutritional status, Malnutrition, Risk factors, Family Based Intervention Program, Nutritional Knowledge, Nutrition related practice, Underweight, Wasting, Stunting