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Effectiveness of a Planned Teaching Programme on Knowledge Regarding Foodborne Diseases and Food Safety Among Mothers of Children Below 12 Years in a Selected Hospital at Nellore

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ABS TRAC T

Introduction: Foodborne diseases are a significant public health issue in developing nations due to poor sanitation and food handling practices. Mothers, as primary caregivers, play a vital role in ensuring food safety for their children.

Objective: To assess the effectiveness of a planned teaching programme on knowledge regarding foodborne diseases and food safety among mothers of children under 12 years.

Methodology: A quasi-experimental pre-post test with control group design was employed. A total of 60 mothers attending a selected hospital in Nellore were selected using a convenience sampling method. Data were collected using a structured questionnaire assessing knowledge before and after the intervention.

Result: Post-intervention results showed a significant improvement in knowledge scores in the experimental group (Mean pre-test: 12.71 ± 3.10; Mean post-test: 17.68 ± 3.0; $t = 10.26$, $p < 0.001$).

Conclusion: The planned teaching programme significantly improved the knowledge of mothers regarding foodborne diseases and food safety.

Keywords: Foodborne Diseases, Food Safety, Mothers, Teaching Programme, Knowledge, Children.

INTRODUCTION

Foodborne diseases are a major public health challenge globally, particularly in developing countries like India where poor food handling practices, inadequate hygiene, and weak regulatory frameworks contribute significantly to disease burden. These diseases are primarily caused by bacteria, viruses, parasites, or chemical substances entering the body through contaminated food or water. According to the World Health Organization, unsafe food leads to over 200 diseases, ranging from diarrhea to cancer, affecting millions of people annually-especially children due to their immature immune systems.

In India, the rapid pace of urbanization, changing dietary habits, and increased dependence on processed and street foods have amplified food safety concerns. Mothers, being the primary food handlers at home, play a pivotal role in ensuring proper food storage, preparation, and hygiene. However, many mothers, particularly in rural or semi-urban areas, lack adequate knowledge about foodborne pathogens and safe food practices, leading to a higher risk of infection among children.

Educational interventions such as structured teaching programs have shown positive outcomes in improving knowledge and practices related to food safety. This study aims to evaluate the effectiveness of a planned teaching programme in enhancing the knowledge of mothers of children below 12 years of age about foodborne diseases and food safety in a

selected hospital setting at Nellore.

MATERIALS AND METHODS

Design: Quasi-experimental (Pre-test/Post-test with control group).
Setting: A selected hospital in Nellore, Andhra Pradesh.
Participants: 60 mothers of children under 12 years.
Sampling: Convenience sampling.
Tool: Structured questionnaire on knowledge related to foodborne diseases and food safety.
Intervention: A planned teaching programme using flashcards and charts, conducted over 6 weeks.
Ethical Clearance: Approval was obtained from institutional authorities. Informed consent was taken from all participants.
Statistical Analysis: Descriptive (mean, percentage, SD) and inferential statistics (paired *t*-test, chi-square test) were used.

RESULTS

A total of 60 mothers participated in the study, equally divided into experimental and control groups (30 in each). The demographic data revealed that a majority of the participants were in the age group of 20–25 years (45%), followed by 26–30 years (28%). Most of the mothers (62%) resided in rural areas, and 36% were illiterate. In terms of occupation, 27% were housewives, and 58% of the participants came from joint families. The baseline knowledge regarding foodborne diseases and food safety was inadequate in both groups before the intervention.

Pre-test Knowledge Levels

Before the implementation of the planned teaching programme, 62% of the mothers demonstrated inadequate knowledge, while 38% had moderately adequate knowledge. Notably, none of the mothers exhibited adequate knowledge in the pre-test phase. These findings indicate a substantial knowledge gap among mothers regarding foodborne illnesses and safe food practices.

Post-test Knowledge Levels

Following the educational intervention, there was a significant improvement in the experimental group's knowledge. In the post-test, 65% of mothers achieved moderately adequate knowledge, and 35% demonstrated adequate knowledge. In contrast, the control group showed no notable changes, indicating the effectiveness of the planned teaching programme.

Statistical Analysis

The paired *t*-test was applied to compare the pre-test and post-test knowledge scores within the experimental group. The results revealed a statistically significant improvement in the post-test scores (Mean = 17.68, SD = 3.0) compared to the pre-test scores (Mean = 12.71, SD = 3.10), with a *t*-value of 10.26 ($p < 0.001$). This confirms the efficacy of the planned teaching programme.

An independent *t*-test was conducted between the post-test scores of the experimental and control groups. The experimental group had significantly higher post-test scores than the control group, with a *t*-value of 8.12 ($p < 0.001$), further confirming the intervention's effectiveness.

Association with Demographic Variables

Chi-square analysis was performed to assess the association between demographic variables and knowledge levels (pre-test and post-test). The findings revealed no statistically significant association between knowledge scores and variables such as age, education, occupation, income, or place of residence ($p > 0.05$). This suggests that the improvement in knowledge was primarily due to the educational intervention rather than demographic influences.

Area-wise Knowledge Comparison

In a detailed area-wise analysis, the maximum knowledge gain was observed in the domain of “safe cooking practices,” with a mean score improvement of 14.3%. The least improvement was noted in the “clean kitchen and utensils” domain, possibly due to relatively higher baseline knowledge in this area. Despite this, all knowledge domains showed positive improvement post-intervention.

DISCUSSION

The present study was undertaken to assess the effectiveness of a planned teaching programme on knowledge regarding foodborne diseases and food safety among mothers of children below 12 years of age. The findings revealed a significant improvement in knowledge post-intervention in the experimental group, while the control group showed no such

improvement. This indicates that structured educational programmes are an effective method for improving awareness among mothers, who are primary caregivers and play a key role in household food hygiene.

These results are consistent with previous studies. For instance, a study by Zhou et al. (2014) in China demonstrated significant improvement in maternal knowledge on food safety following a hospital-based education program. Similarly, Norazmir et al. (2012) in Malaysia reported that student knowledge and practice improved significantly after targeted interventions. In the present study, the mean post-test knowledge score increased from 12.71 to 17.68 in the experimental group ($p< 0.001$), supporting the effectiveness of visual and participatory teaching methods like flashcards and charts.

Interestingly, no statistically significant association was found between demographic variables (such as age, education level, occupation, or place of residence) and the knowledge improvement. This suggests that structured health education interventions are effective across diverse socioeconomic backgrounds. It also reinforces the importance of incorporating such teaching programmes into routine maternal and child health services at both hospital and community levels to improve food safety practices and reduce foodborne illness in vulnerable populations.

CONCLUSION

The present study demonstrated that a planned teaching programme significantly improved the knowledge of mothers regarding foodborne diseases and food safety. There was a notable increase in post-test scores in the experimental group compared to the pre-test and control group, confirming the effectiveness of the intervention. The lack of association between knowledge gain and demographic variables suggests that structured education is effective across diverse populations. Educating mothers-key caregivers-can help reduce foodborne illnesses among children. Such programmes should be integrated into routine maternal and child health services to promote safe food practices and improve public health outcomes.

Recommendations

- Similar teaching interventions should be implemented in primary health care settings.
- Further studies can assess long-term retention and changes in practice behavior.

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