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PROMOTING BREASTFEEDING THROUGH NUTRITION EDUCATION

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Abstract

Breastfeeding practices have declined worldwide over the years as a result of advertisements, urbanization, socio-economic issues and maternal employment outside the home. This research highlights effective use of nutrition education using one group pre-test, post-test design in promoting breastfeeding awareness amongst young females. Sample of 519 young unmarried females aged 20-25 years was randomly selected and nutrition education was delivered through seminars regarding benefits of breastfeeding, nutrition, concerns and special cases of breastfeeding. Results showed a significant increase of 63.31% (p value < 0.000) in the overall knowledge regarding importance breastfeeding. Woman's knowledge towards nutrition of breastfeeding, special cases in nutrition, concerns of nutrition and benefits of nutrition was tested. Post-test intervention was conducted in controlled environment. Seminar was given through the use of multimedia as well as brochures were distributed for reinforcement of the treatment. The attitude towards BF has changed worldwide, owing to drastic changes in the social lifestyles of women, laying out the basis for the study. Increased emphasis needs to be placed on promotion of BF as an integral part of the child's growth.

Keywords

Seminar, Breastfeeding, Nutrition education, Promotion



1. Introduction

The first two years of a child is of utmost importance for growth as the infant doubles his/her weight in about five months and is expected to triple the birth weight by their first birthday. Thus, good and appropriate feeding practices from birth to 24 months are of prime importance as it meets the evolving nutritional requirements of infants. Feeding practice at birth primarily focuses at Breastfeeding as this

has shown to reduce the risk of childhood diseases and malnutrition. (Bhutta & Salam., 2012)

In recent years, exclusive breastfeeding (BF) practices have declined worldwide, such as Middle East, Europe and United States of America, as a result of advertisements, urbanization, socio-economic issues and maternal employment outside the home. All this is due to a lack of awareness amongst

masses that choose to avert from traditional breastfeeding practices. Women, owing to their social lifestyle and increased ambition regarding career goals, now place more emphasis on day-care centres and consider breastfeeding a secluded human activity (Marianne Kjelsvik, 2018; Thakur, S., & Shukla, 2018). The importance of breastfeeding cannot be over-emphasized due to the fact that breastmilk is the only natural appropriate food for infants, promising them all the essential nutrients they need for their adequate growth and development (Oliveira *et al.*, 2017). The distinctive nutritional composition of breastmilk makes it best suited for consumption by infants as it is easily digested by the child, which also marks it superior to other types of formula milk (Sandra & Meyers., 2011; Su & Ouyang, 2016).¹

The United Nations Children's Fund (UNICEF) has estimated that exclusive breastfeeding under 5 years can reduce the infant mortality rate up to 13%. Malnutrition has been responsible, indirectly or directly, for 60% of the 10.9 million deaths annually amongst children less than five years of age

and over two third of these deaths have occurred during the first year of life due to inappropriate feeding practices. Overall, 43% of children are breastfed within the first hour after birth and 89% are breastfed by the next two to three days of birth (Parry *et al* 2017). The infant mortality rate in Pakistan is up to 75%, marking it very high due to inappropriate breastfeeding practices, which lowers the immunity in children, causing common fatal diseases such as pneumonia, malaria and diarrhoea (World, Adolescence-Age for Opportunity, 2011).²

According to the United Nations Inter-Agency Group of Child Mortality Estimation (IGME) 2012, the mortality rate at the global level declined from 88 deaths per 1000 live births in 1990 to about 57 deaths per 1000 live births in 2007. This is attributed to the success of public health and nutrition intervention regarding breastfeeding. These interventions were conducted on country level in the form of programs providing basic nutrition education in terms of the benefits and importance of breastfeeding for the mother and infant. Many intervention strategies have been used globally for protection and promotion of infant's health and amongst them seminars have been rated as the most effective interventional method in

1. ¹ In comparison, cow's milk only has 1/30 resemblance to human milk. Quantity of Mg, Ca, Fe, P, Cu and Mn are higher in human milk than in cow's milk. Human milk, which contains more of the mineral content is a pointer to the nutritional contribution towards countries like Pakistan or Nigeria where undernourishment and malnourishment are a factor of concern for the health sector of the country. This is a promising factor for vulnerable populations, like pregnant women and lactating women, to feed their infants human breastmilk for optimal nutrition and growth. (M. A. Belewu, 2012)

2. ² There are large discrepancies in pregnant women's health outcomes owing to the access to sanitation, health facilities and postnatal health services such as nutrition education. A single intervention is not enough to achieve low mortality rate and this is the case in Japan, where they attained very low mortality rate; 10/1000 people, owing a to multi-faceted health and sanitation approach (Robert L. Goldenberg, 2018).

terms of global, regional, local and community program. Breastfeeding, although a natural phenomenon, is still a learned behaviour, as reported by World Health Organization (WHO) and would require active support for establishing and sustaining this practice (UNICEF/AED, 2011).

Breastfeeding though an activity solely performed by the mother, has its roots in the cultural social, economic, religious and ethical concerns of a society (Gu *et al.*, 2016). A cross country research covering Bangladesh, Benin, Uganda, Philippines, Uzbekistan and Sri Lanka over a period of 10 to 15 years (1883 to 2007), related to the promotion of BF exhibited that all country level programs aimed to protect, promote and support breastfeeding practices were successful, as all were developed by tackling and altering the beliefs of individuals within the community regarding BF practices, so as to increase the implementation of BF (Jones *et al.*, 2003).

Breastfeeding is an important phenomenon carrying a number of benefits for the mother, infant and the community (Jessica & Burnhill., 2016). Lactating mothers are recommended to begin BF from the very first hour of the baby's birth until the next six months, given that no weaning food is introduced during this particular duration; a concept called exclusive breastfeeding. However, there seems to be an indecisive and undefinable decrease in the practice of exclusive breastfeeding among the young women, as a result, there is an increase in illnesses, allergies, diseases and morbidity rates in children as well as in adults who are

not breastfed (Heidari *et al.*, 2016; Black, 2018).³

The current study aimed to analyse the effectiveness of seminar as a tool for nutrition education in order to create awareness about breastfeeding practices and issues in young females. The objectives of the study were to assess the pre-existing knowledge of young women in relation to breastfeeding practices, to educate young women about the importance of breastfeeding and to evaluate the effectiveness of seminar as a nutrition education tool to promote breastfeeding. Thus, the ever-increasing and dire need for promotion of breastfeeding laid out the groundwork for the study.

2. Materials and Method

2.1. Research Design and Sample

The research design for this study was quantitative, one group pre-test, post-test design, without a control group. Lahore was selected as the representation of data. The universe of the study comprised young, unmarried women aged 20-25 years, studying in three different universities of Lahore. Probable, random sampling was used using a fish bowl method with all practical considerations as identified by (Alvi, 2016). Total population of unmarried woman in Pakistan in 2018 was 22,825,317 (Pakistan

3. ³ The attitude towards breastfeeding among young woman has changed over the last decade and greater emphasis is placed on formula-prepared milk. This is partly due to the convenience it provides. The cost incurred due to this is often neglected whereas, human milk is free of cost and an optimal solution for the child's growth.

Bureau of Statistics, 2018). Sample was calculated with 95% confidence level and 4.3 confidence interval, giving a 519-sample size. 10 individuals were non-responsive, hence 510 respondents participated in the study. Tool used for data collection was self-administered pre and post questionnaire. The ethical approval was taken by the Ethical Review Committee ORIC of Kinnaird College for Women, Lahore, Pakistan.

2.2. Data Extraction & Analysis

Respondents were given an equal chance of participation and contribution towards data collection. Ethical approval was taken through a written consent, from the Ethics Committee of each university before conducting the seminar. The committee complied fully with the research team and facilitated in every formal and informal manner. During the seminar, the respondents were briefed about the purpose of the study before filling out the pre- questionnaires. The seminar included a PowerPoint presentation about; 1) Benefits of breastfeeding, 2) Nutrition in breastfeeding, 3) Special cases in breastfeeding and 4) Concerns in regard to breastfeeding. The presentation was 25 to 30 minutes long. After the seminar, the post test was conducted to assess the change in nutrition knowledge using seminar as an effective nutrition education tool.

Each researcher presented and answered queries from the respondents. After the presentation, the respondents took less time to fill the post questionnaires. The data for this research was analysed using the software

SPSS (Statistical Package for Social Sciences) Version 21.0.

3. Results

The pre-test study was intended to assess the impact of seminar-based nutrition education on knowledge of university going unmarried female students. The data was analysed by screening each question and comparing mean values of the answers between both pre-test and post-test questionnaires. The answers were rated through Likert Rating Scale, consisting of a series of statements to which the participants had to rate their agreement or disagreement. It was a 5 point-scale, which included the options of strongly agree, agree, neutral, disagree and strongly disagree. Some of the questions were reverse-scored, so the most correct answer would be rated 5 while least correct would be rated 1. The responses were recorded and analysed prior to and after the seminar was conducted. The data is represented according to each section of the questionnaire.

Table 1: Comparison of Overall Knowledge of Participants; Pre-Test and Post-Test

Test	Mean ± S.D	p-value
Pre-intervention	42.34± 3.64	
Post-- intervention	67.87 ± 5.03	0.000

The table above shows the mean value percentage and standard deviation for the cumulative assessment of all respondents of the research. The p-value indicated is .000 which is less than 0.05, therefore a highly significant value. The mean scores of pre-tests were 42.34 and mean scores for post-tests

were 66.87. It accepts the hypothesis that seminars are an effective tool for imparting

nutrition education to individuals regarding breastfeeding

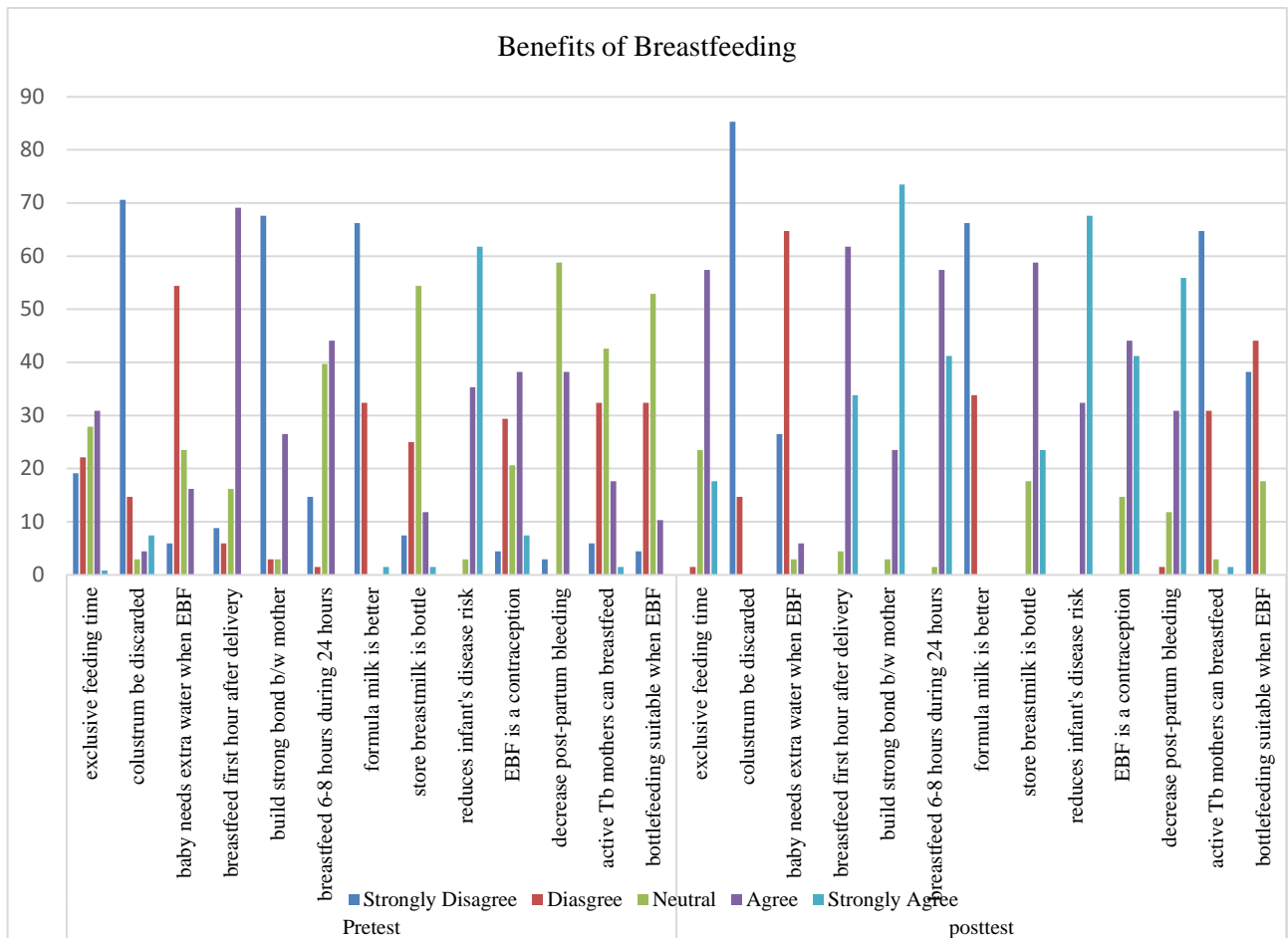


Figure 1: Pre and Post-test Comparison: Knowledge of Participants Regarding Benefits of Breastfeeding

Figure 1, shows the increase in the knowledge of the respondents about facts related to benefits of breastfeeding their children. This graphical presentation depicts varied answers in pre-test, hinting that respondents were unsure and confused about the kinds of benefits that breastfeeding

provides. However, after attending the informative seminar, the number of ‘strongly agree’ and ‘strongly disagree’ responses were almost unanimous among the audience, showing that an effective seminar can clear easily such concepts in the minds of individuals.

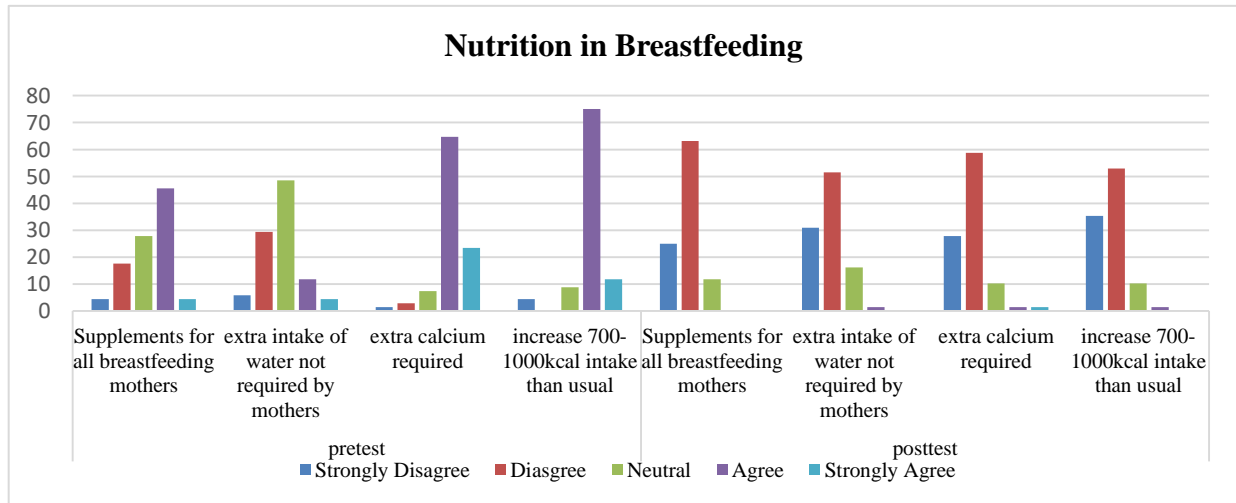


Figure 2: Pre and Post-test Comparison: Knowledge of Participants Regarding Nutrition in Breastfeeding

Here in Figure 2, the pre-test responses of the audience show some variation perhaps due to confusion in the minds of participants regarding these concepts, with most responses leaning towards ‘agree’ or ‘neutral’. However, in the post-

test, the answers were more commonly categorized as ‘strongly disagree’ or ‘disagree’, which indicates that seminars can significantly increase the knowledge of participants as well as the level of confidence in their responses.

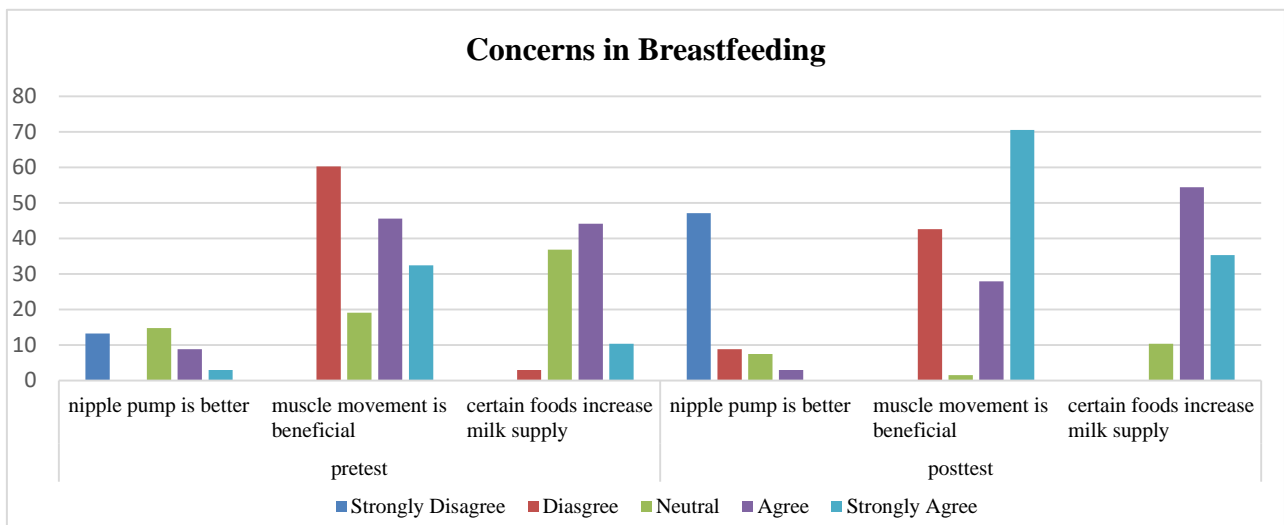


Figure 3: Pre and Post-test Comparison: Participants Regarding Special Cases for Breastfeeding

The above figure reflects much dispersion in the pre-test answers of respondents, with more responses centring around ‘neutral’ and ‘disagree’, and several more distributed among the remaining options. After the intervention, however, there is an immense and noticeable shift in the responses

towards the stronger opinions. A majority of the individuals changed their answers to ‘strongly agree’ or ‘strongly disagree’, depending upon the nature of the question, indicating that seminars can effectively define and guide the responses of participants

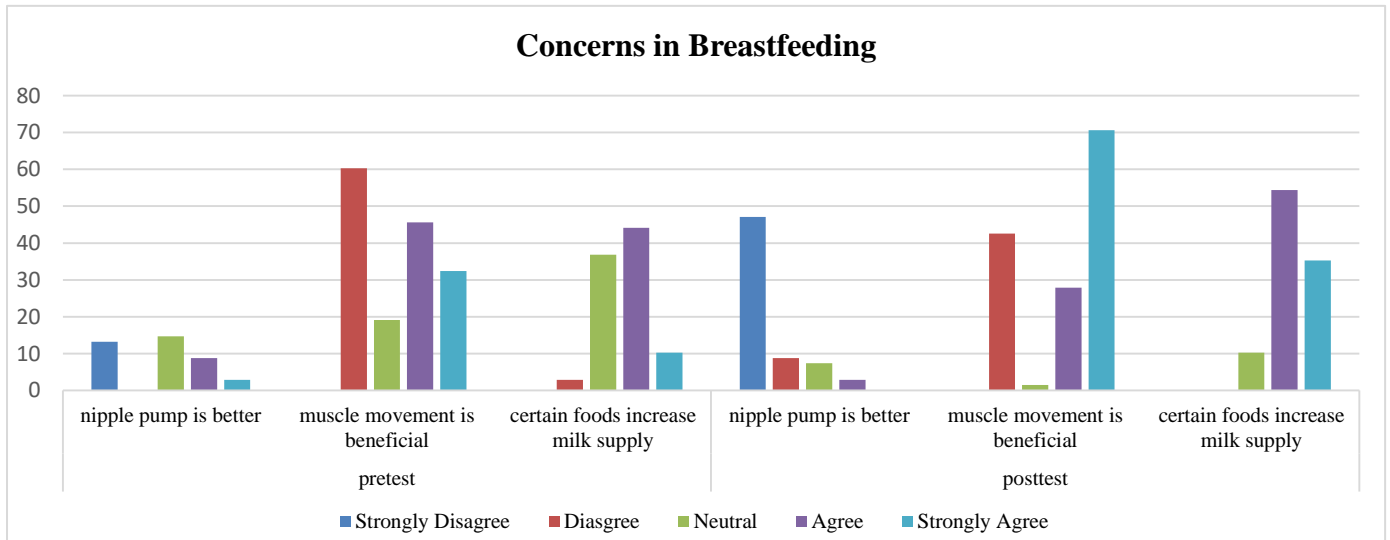


Figure 4: Pre and Post-test Comparison: Participants Regarding Concerns in Breastfeeding

In this figure, it can be observed that respondents were not clear about the correct answers to the questions in pre-test questionnaire, hence the scattering of responses in some of the questions. After application of the seminar for nutrition education of the respondents, more uniform responses can be seen, indicating greater clarity of concepts along with confidence in answers. More people checked the ‘strongly agree’ or ‘strongly disagree’ responses.

4. Discussion and Implication

This study was conducted to assess the effectiveness of seminar as a nutrition education tool to promote breastfeeding. a program to be conducted in terms of understanding the situation before the nutrition education program is implemented and to analyse the situation after the intervention has been conducted. The research centres around the study of seminar as an effective tool to intervene in terms of delivering nutrition education pertaining to maternal health in under-developed countries. (Sandra & Meyers., 2011). Effectiveness of breastfeeding practices can only be established when one is able to understand what

breastfeeding actually is, what are the benefits of implementing it with respect to maternal and infant health, and what are the various hurdles that may stand in the way of effective BF practices?⁴

The main findings of the research reflect conclusive effects of seminar as an effective interventional tool to provide nutrition education to individuals regarding breastfeeding. The study was conducted on young unmarried women who had little to no knowledge about breastfeeding, which significantly enhanced the scope for research and experimentation. The respondents were students belonging to three different universities, who were invited to an open seminar. A total of 510 students participated in the seminar. All of the participants belonged to the age group of 20-25 years. The main objective of the study was

4. ⁴ Because breastfeeding is a contextual and embodied experience, health professionals play an integral part in women’s attitudes towards breastfeeding. A relational inquiry approach by health professionals provides a practical way to support women to achieve their breastfeeding goals, regardless of the complexities of their lives. This way, women feel greater support for breastfeeding by health professionals (Betty Ann Robinson, 2017).

to evaluate the general knowledge of female students on breastfeeding after an informative and interactive seminar. The study showed positive results; there was a prominent increase in knowledge, about 63.31% after the seminar was conducted with a p-value of 0.000.

The seminar included verbal lectures and pictorial demonstrations during the presentation about breastfeeding and its benefits for both the mother and child. Before the session, participants were asked to relate their concepts about breastfeeding by filling a questionnaire. It included several topics, for example whether colostrum should be discarded, whether breastfeeding protects the baby from illness, if it prevents the mother from getting pregnant, if formula milk is better than breastmilk etc. They were also asked to communicate any knowledge that they had regarding nutrient intake and nutrition level of mother during breastfeeding. After this, the intervention was executed, in which the participants were given a brief lecture through multimedia, pertaining to the benefits, facts, myths and concerns about breastfeeding. At the conclusion of the session, the participants were again asked to express their knowledge about the same topics, and the results of both the assessments, prior to and after the intervention, were analysed and compared.

On careful observation, it was found that there is a positive change in the nutritional knowledge of the participants, indicate that they did, in fact, benefit from the seminar. This can help us format the subjective evaluation of seminar as being an effective tool for nutrition education. The research design of the study followed dual testation on a single group, before and after an intervention was

executed, after which the changing responses and, therefore, knowledge of the respondents was analysed. This provides a base to test and compare the effectiveness of seminars as an educational tool, and to note any differences made during the research study.

As the seminars were completely focused on providing education to the participants, therefore it was reasonable to judge any pre-existing knowledge and concepts in the minds of the participants. Choosing the least conclusive target audience in the field of BF provided an opportunity to perform randomization in selection of candidates for the research study. Moreover, it gave a wider scope for the purpose of field-testing and quantification of nutritional knowledge; most especially relating to concepts and concerns regarding optimal and effective breastfeeding practices. The interventional seminar demonstrated a distinct effect in participants' knowledge about BF, showing how it changed and enhanced during the pre-test and post-test intervals, as the results were reflected through statistical analysis criteria. These key findings serve as principle methods for determining the effectiveness of seminars as a nutrition education tool for spreading awareness about breastfeeding.

Breastfeeding is a natural and beneficial source of nutrition and provides the healthiest possible start for the infant. In addition to its numerous nutritional benefits, BF promotes a unique way of emotional bonding between the mother and child. This is a learned behaviour and is crucial in playing positive cognitive performances. The attitude towards BF has changed worldwide, owing to drastic changes in the social lifestyles of

women, laying out the basis for the study. Increased emphasis needs to be placed on promotion of BF as an integral part of the child's growth. (Kjelsvik *et al.*, 2018)

This research study has further potential such as by the conduction of extensive comparison between different types of seminars, interactive sessions, flyers and brochures to assess the most effective tool for promoting health issues and educating the masses about nutrition. Health issues need to be addressed throughout the world, depending upon the geographical disposition and their related health issues. The question regarding which medium for promotion of nutrition concepts is most suitable for the audience depends upon their literacy levels as well as the logistic concerns of the researcher. This requires more in-depth research analyses and holds great potential to be explored further. Various techniques and policies can play an important role in promotion of maternal health issues, especially compromised compliance to breastfeeding.⁵

In contrast to the research conducted, The American Academy of Paediatrics (AAP) reaffirms its recommendations of exclusive breast feeding for about six months, in combination with the introduction of complimentary foods until at least 12 months of age, and continuation of breast feeding for as long as mutually desired by mother and baby.

5. Recommendations

In light of the study, the following recommendations are being made:

- Education helps women make wiser choices, guiding them about the physical and psychological benefits of choosing breastfeeding over formula milk
- Health worker/nurse should be trained to guide females to choose breastmilk, highlighting its benefits for both the mother and child. Their constant support and help will boost the confidence levels of young females
- Educate females regarding the importance of colostrum
- Enlighten young females about lactations concerns and make them feel comfortable when discussing this issue
- Programs like Woman, Infant and Children (WIC) should be implemented so that woman how they can exclusively breastfeed their child with the support of a good, healthful diet (Feltner *et al.*, 2018).

6. Conclusion

The research showed that the informants had some basic knowledge about the advantages of breastfeeding, but they were largely unaware of several other important facts about breastfeeding. Many participants agreed that the baby should be exclusively breastfed but were unsure about the duration of exclusive breastfeeding. They were mostly uninformed about the immense importance of colostrum and considered it as "bad milk" that must be wasted. Through this seminar, they learned several important BF-related concepts, such as the fact that a mother who delivered twins

1. ⁵Conversational humanoid robots (Murali, O'Leary, Shamekhi, & Bickmore, 2019)
2. Father-friendly breastfeeding relationship (Johnston, 2018)

or triplets can just as easily breastfeed her babies like a mother of a single baby. Moreover, a diabetic mother can conveniently feed her child without being concerned about transmitting the disease or causing the baby's blood glucose levels to spike. As the respondents were affiliated with educational institutes, they did not lack basic knowledge about breastfeeding, however their concepts were more refined, their confidence in their responses was increased and they were enlightened with more precise, clear information through the conduction of a seminar.

7. Competing Interests

The authors have declared that no competing interests exist.

8. Authors' Contributions

This work was carried out in collaboration among all authors. All authors contributed equally in various roles including formulation research goals, development of methodology, performing the experiments and analysing data and writing the initial draft. The corresponding author coordinated the research activity as agreed by all authors. All authors read and approved the final manuscript.

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