

Research Article**COMPARISON OF WEANING PRACTICES IN MOTHERS OF
DIFFERENT SOCIOECONOMIC CLASSES****Umara Munir¹, Omar Rafique², Rabia Munir³, Muhammad Munir Ahmed⁴**¹ The University of Lahore.² Jinnah Hospital.³ Mansoorah Hospital.⁴ Provincial Health Development Centre, Lahore.**Abstract:****Background:**

Weaning means adding solid food to diet of infant and withdrawing mother's milk gradually. WHO recommends exclusive breastfeeding till 6 months and then adding solid food gradually. This study was designed to compare the weaning practices in mothers of different SES of district Sheikhpura, Pakistan.

Objectives:

To find out frequency of mothers starting weaning of infants at six months of age and to compare weaning practices in mothers of different socioeconomic classes.

Methodology:

A cross-sectional comparative study was done from May 2019- Jan 2020 on mothers of infant aged 3 months-2 years visiting O.P.D. of Kishwar Fazal Hospital, Sheikhpura, Pakistan. The comparison of weaning practices in 3 Socioeconomic groups was done using chi-square analysis and descriptive statistics.

Results:

This study showed that the prevalence of exclusive breastfeeding was 43.3% in mothers of vicinity of Sheikhpura and 51.3% of mothers had started weaning in 6th month. Chi-square analysis showed that there was strong link between SES and prevalence of exclusive breastfeeding till 6th month and mild association between SES and month of start of weaning. The most common weaning food was cerelac (47.5%), second most common being rice (29.3%) and the most common liquid added was water (45.8%), second being cow's milk (21.6%). The most common reason for early start of weaning was custom (41.5%)

Conclusions:

This study showed that almost half mothers breastfed their infants till 6 months exclusively This study suggested that mothers of all SES were not feeding according to WHO guidelines and proper measures should be taken to improve these practices.

Key words: Socioeconomic status, weaning practices, breastfeeding practices

Introduction:

Weaning means introduction solid foods to infant's diet while withdrawing the mother's milk gradually. A child is said to be totally weaned once he no longer feeds from his mother or bottle feeds.¹

According to NHS guidelines a variety of solid foods should be introduced to the diet of infant and very gradually at 6 months of age. Waiting till 6 months will protect child against illnesses and make them cope with solid foods.²

These feeding recommendations if followed appropriately can significantly decrease the rate of infant mortality and can prevent malnutrition in developing countries like Pakistan.⁶

Child malnutrition is highly prevalent in developing countries and cause significant increase in disease burden and mortality.³ According to United Nations International Children's Emergency Fund (UNICEF) undernutrition cause almost 3 million deaths every year.⁴ United States Agency for International Development (USAID) has estimated that almost half (45%) of the deaths under-5 years of age are attributed to nutrition related factor⁵(USAID). Rates of infant and mortality under-5 has been decreased significantly over the past 2 decades. However, with this appreciable decline in under-5 mortality rate inequalities persist across different regions and countries and even in the same country with different socio-economic status.⁵

In spite of appreciable benefits of breast feeding for mothers and infants, early cessation of breast

feeding is reported from many developed countries.⁶ Early cessation of breast feeding and start of weaning may lead to child malnourishment. Several factors are attributable to malnutrition in children in developing countries. Low birth weight, recurrent illnesses, chronic diseases, poor weaning practices and feeding problems are major risk factors for malnutrition.⁷

Most mothers in developed nations have good knowledge of month in which weaning should be started and foods to be introduced given to them by health professionals on mother's regular visit to paediatricians. Young age, low literacy and minor ethnicity are some risk factors for early start of complementary foods in infant's diet.⁸

Socioeconomic status is strongly linked to weaning practices of mothers. Reene et al. showed that 48 percent of mothers with primary education weaned their children before 6 months and 15 percent of mothers with higher education had weaned their children before 6 months and 35 percent of mothers with lowest income had weaned before 6 months and 17 percent with highest quartile had weaned before 6 months.⁹

So, this study aims to see what is difference in weaning practices of mothers of different socioeconomic classes of district Sheikhpura. With this knowledge we can compare which socioeconomic class has more knowledge and better infant feeding practices. It will help government to make plans on mass scale to improve weaning practices in mothers of different socioeconomic classes and in turn improve health of children and decrease morbidity and mortality.

Weaning is the addition of complementary foods in infant's diet to meet its growing nutritional requirements. WHO recommends exclusive breastfeeding till 6 month addition of complementary foods with breast milk 2-3 times/day between 6-8 months of age to 3-4 time daily

by the age of two years with addition of other nutrients as desired.¹⁰

A study conducted by D. L. Pelletier, Frongillo et al. on developing countries indicates that 70% of deaths worldwide are due to diarrheal diseases, acute respiratory infections, malaria and immunizable diseases and 66 percent of these is attributable to malnutrition. This study indicates that 56 percent of child's death is due to malnutrition with 15 percent of cases were primarily due to malnutrition and in 85 percent malnutrition was associated cause of death.¹¹

Similarly, a study was conducted by Upul Senarath and Michael J. Dibley on South Asian countries (Bangladesh, India, Nepal, Pakistan and Sri Lanka) regarding weaning practices. It showed that these countries had the highest rate of disease burden in infants with 41% stunted, 16% wasted and 33% underweight. These were attributed mostly to poor feeding habits. And children in these countries were more prone to diarrheal diseases and acute respiratory infections.¹²

Prevalence of initiation of breast feeding varies greatly between countries. Ibanez et al. in 2012 reported highest percentages of initiation of breast feeding in Norway (99%), Denmark (98.7%) and Japan (98.3%) respectively. The prevalence is much lower in UK (70%), US (69.5%) and France (62.6%)¹⁰. Low level of education, younger age, poor socio-economic status are some key factors influencing breast feeding.¹³

Results of a study from Italy in 2016 shows that prevalence of initiation and exclusive breast feeding is less in Asiatic mothers.¹⁴ Another study from Rawal Institute of Health Sciences in 2013, reported that only 2% of the mothers started breast feeding within 1 hour after birth.¹⁵ Data from a large survey of fifty-three WHO European member states indicates that there are significant differences in prevalence of exclusive BF between various countries and its prevalence is far from WHO recommendation.¹⁶

In another cross-sectional study from Norway, prevalence of exclusive breast feeding at the age of 4-months in people of Norwegian-Iraqi origin is 10% and in Norwegian-Somali origin is 7% only.¹⁷ Prevalence of exclusive breast feeding from Vietnam is reported to be 15% at the age of 4-month which further declined to <1% by the age of 6 months¹⁸ while in Mexico, prevalence has been reduced from 21% in 2006 to only 14% in 2012.¹⁹

Prevalence of exclusive BF is highly variable in different regions of Pakistan. Ali et al. reported 54% prevalence of exclusive breast feeding in Karachi²⁰ while it was (41.5%) in Faisalabad.²¹ A study conducted by Saadia Ijaz and Tayyaba Ijaz reported 67% prevalence of exclusive breastfeeding in Lahore while 64% of mothers had knowledge of exclusive breastfeeding²² while another study from Karachi reported 34% prevalence of EBF in mothers.²³

Among a lot of factors which effect weaning like maternal age, parity, education level; socioeconomic status is has strong effect on weaning practices. [Renée Flacking](#), [Kerstin Hedberg Nyqvist](#) and [Uwe Ewald](#) showed that 48 % of mothers with basic education weaned their children before 6 months as compared to 15% of mothers with higher education and 35 % of mothers with lowest income had weaned before 6 months and as compared to 17% of mothers with higher income.²⁴

A study conducted by Nneka Christina Okafoagu, Oche Mansur Oche in Nigeria in 2017 showed that socioeconomic status was linked with weaning practices of mothers with 76.9% of people in low socioeconomic class doing timely introduction of complementary foods as compared to 23.1% in high socioeconomic class and 80.5% of unemployed women doing timely introduction of complementary food as compared to 19.5% of employed women. Mother's employment status was also linked to weaning practices of mothers with 19% of employed women doing timely introduction of complementary foods as compared to 80% of unemployed women who

did timely introduction of complementary foods.²⁵

A study conducted by Parveen Akhter, Mazher Abbas Rizvi et al. in Islamabad, Pakistan in 2012 showed that maternal education was strongly linked to complementary feeding practices of infants. It was seen that out of 36% of mothers who had started complementary feeding at appropriate time, 35% were educated and 1.4% mothers were uneducated. Moreover, out of 19% of mothers who had started complementary feeding very late, 14% mothers were educated and 5% were uneducated. So, complementary feeding practices of educated mothers was very good as compared to uneducated mothers.²⁶

Introduction of semi-solid and solid foods in infant's diet is important to meet the growing needs of the baby. However, due to poor weaning practices (e.g. timing to start weaning, type of food and quality and quantity of food), incidence of malnutrition is increasing among children. Malnutrition, infant mortality and morbidity rates are very high in Pakistan.

The present study was planned to compare the weaning practices of mothers of different social classes of district Sheikhupura and to identify the factors affecting weaning practices. The proposed study is likely to provide information regarding common breastfeeding and weaning practices.

PROBLEM STATEMENT:

Sub-optimal level of exclusive breast feeding and poor weaning practices, are the main causes of malnutrition and infant mortality in local population. Nutrition related factors account for 35% of child deaths and 11% of the total global disease burden³. UNICEF reported undernutrition cause almost 3 million deaths every year. The present study is planned to compare the weaning practices of mothers of different social classes of district Sheikhupura and to identify the factors affecting weaning practices. The proposed study is likely to provide information regarding common

breastfeeding and weaning practices and will help us in improving the feeding practices of children by educating mothers and minimizing the discrimination in different socioeconomic classes.

The study will help Government and other agencies to take necessary measures to fulfill the goal of optimal breast feeding and appropriate complementary feeding practices laid by UNICEF and USAID to reduce infant and under-5 mortality rates.

OBJECTIVES:

The objectives of the study are :

- 1) To find frequency of mothers starting weaning at 6 months.
- 2) To compare weaning practices in mothers of different socioeconomic classes.

METHODOLOGY:

A cross-sectional comparative study was done on mothers of district Sheikhpura, visiting outpatient department of Kishwar Fazal Teaching Hospital from May 2019- January 2020. A total sample of 335 females was taken. The sample size is estimated using frequency of weaning starting at 6 months as 32.1%.²⁷ ($n = Z^2_{1-\alpha/2} \{P(1-P)\} / d^2$ where, $n=335$, $Z_{21-\alpha/2}=1.96$, $P=32.1\%$ ¹⁰⁸, $d=0.05$). Mothers of all socioeconomic groups were included of children aged 3 months-2 years, and mothers who were not willing to be included in this study and whose children had anomalies were excluded from this study.

A semi-structured proforma was made and data was collected by interviewing 335 mothers visiting O.P.D. of Kishwar Fazal Hospital and filling the proformas. The data was then analysed by measuring the socio-economic status of the mother according to Kuppaswamy scale and grouping it as low, middle or high and the weaning practices were compared in these three socioeconomic groups by using Chi-square analysis. Descriptive statistics were also used to measure the frequencies, mean, median, mode. Data was analysed on SPSS version 16.0.

Graphs and tables were also added where required.

RESULTS:

This study showed that most mothers exclusively breastfed their children for 6 months (almost 43%), and 17% of mothers exclusively breastfed their children for 4 months. So, the percentage of mothers exclusively breastfeeding their children for 6 months was quite high. It showed that most mothers started weaning their children in 6th month (51.3%).

Table 1: Socioeconomic Status and Duration of exclusive breastfeeding Crosstabulation

SES	Duration of exclusive breastfeeding					Total n (%)
	1-2 months n (%)	2-3 months n (%)	3-4 months n (%)	4-5 months n (%)	5-6 months n (%)	
Low SES	7 (6.8%)	3 (2.9%)	13 (12.6%)	13 (12.6%)	53 (51.5%)	103 (100.0%)
Middle SES	7 (3.4%)	18 (8.9%)	30 (14.8%)	26 (12.8%)	87 (42.9%)	203 (100.0%)
High SES	3 (10.3%)	2 (6.9%)	2 (6.9%)	9 (31.0%)	5 (17.2%)	29 (100.0%)
Total	17 (5.1%)	23 (6.9%)	45 (13.4%)	48 (14.3%)	145 (43.3%)	335 (100.0%)

This study showed that there was significant association between socioeconomic status and duration of exclusive breastfeeding (interpreting the chi-square test, p value=0.05, Table 6.1). This study showed that 51.5% of children in low socioeconomic group were exclusively breastfed till 6 months, as compared to 42.9% in middle socioeconomic group and 17.2% in high socioeconomic group. (Table 1)

Table 2: Socioeconomic Status and Month of start of weaning Crosstabulation:

SES	Month of start of weaning			Total n (%)
	1-5 month n(%)	6-11 month n (%)	12-18 month n (%)	

Low SES	30 (29.1%)	71 (68.9%)	2 (1.9%)	103 (100.0%)
Middle SES	64 (31.5%)	139 (68.5%)	0 (.0%)	203 (100.0%)
High SES	14 (48.3%)	15 (51.7%)	0 (.0%)	29 (100.0%)
Total	108 (32.2%)	225 (67.2%)	2 (.6%)	335 (100.0%)

This study showed that mostly females in all socioeconomic groups started weaning (i.e. solid diet) in 6th month. 53% of mothers in lower socioeconomic group started weaning in 6th month, as compared to 51% in middle socioeconomic group and 44% in higher socioeconomic group. (Table 2)

Table 3: Socioeconomic Status and Weaning foods Cross tabulation

SES	Weaning Foods [n(%)]							Total
	Cereals	rice	egg	fruit	vegetables	meat	Cerelac	
Low SES	14 (13.6%)	33 (32.0%)	0 (.0%)	6 (5.8%)	0 (.0%)	1 (1.0%)	49 (47.6%)	103 (100.0%)
Middle SES	29 (14.3%)	60 (29.6%)	4 (2.0%)	19 (9.4%)	1 (.5%)	0 (.0%)	90 (44.3%)	203 (100.0%)
High SES	4 (13.8%)	5 (17.2%)	0 (.0%)	0 (.0%)	0 (.0%)	0 (.0%)	20 (69.0%)	29 (100.0%)
Total	47 (14.0%)	98 (29.3%)	4 (1.2%)	25 (7.5%)	1 (.3%)	1 (.3%)	159 (47.5%)	335 (100.0%)

This study showed that there was also difference in the weaning foods introduced to the diet of infant. Cerelac was the most common weaning food added to diet of infant in all socioeconomic groups (47.5%). 69% of people in high socioeconomic group added cereal to diet of infant as compared to 47% and 44% in low and middle socioeconomic group respectively (Table 3). The second most common weaning food in all socioeconomic groups especially in low

socioeconomic group was rice (29.3%).

Table 4: Socioeconomic Status and Type of liquid added to infant's diet Crosstabulation :

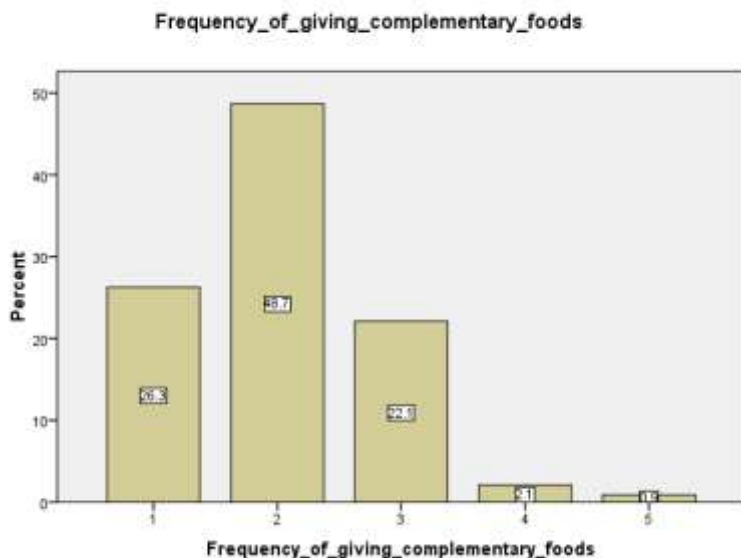
SES	Type of liquid added					Total
	Water	Fruit juice	Tea	Formula Milk	Other	
Low SES	52 (50.5%)	6 (5.8%)	1 (1.0%)	19 (18.4%)	25 (24.3%)	103 (100.0%)
Middle SES	94 (46.3%)	9 (4.4%)	4 (2.0%)	53 (26.1%)	43 (21.2%)	203 (100.0%)
High SES	7 (25.0%)	1 (3.6%)	0 (.0%)	16 (57.1%)	4 (14.3%)	28 (100.0%)
Total	153 (45.8%)	16 (4.8%)	5 (1.5%)	88 (26.3%)	72 (21.6%)	334 (100.0%)

It was also seen that there was a strong link between the type of liquid given to child after breast milk in different socioeconomic status. People in high socioeconomic group mostly gave formula milk to their infant's (57%), while people in low and middle socioeconomic group mostly gave water to their infants (50% and 46% respectively). (Table 4)

It was seen that the most common reason for early or delayed weaning was custom and traditions (41.5%), the second most common reason being child need for more food (29.3%) other reasons being maternal health issues and low milk production (14.9% and 14.3% respectively).

It was seen that the mothers mostly received guidance from their in laws regarding weaning practices (34.9%), others had experience from previous pregnancies regarding what to start during weaning of child (31.9%), other source of information were mothers (20.3%) and own perceptions regarding weaning (12.8%).

It was seen that mostly mothers (47.5%) started breastfeeding within 1-12 hours, while 45% of mothers started breastfeeding after 24 hrs. So, most mothers practiced starting breastfeeding early according to WHO recommendations.



Graph No. 1: Frequency of giving complementary foods

This study showed that mostly mothers fed their infants with complementary foods 2 times a day (48.7%) while others mostly fed 1 (26.3%) or 3 (22.1%) times. (Graph 1)

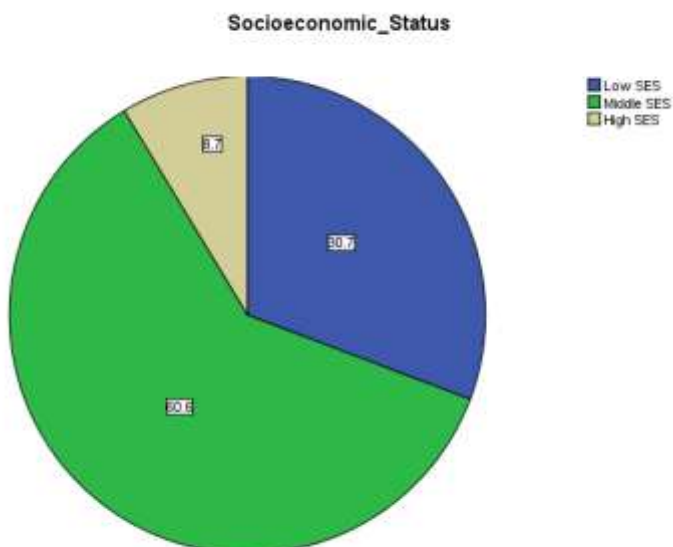


Figure 1: Percentage of socioeconomic status of people in study population. Most people belonged to middle socioeconomic group (60.6%)

This study showed that the most mothers in study population (almost 60%) belonged to middle socioeconomic class, percentage of mothers belonging to low socioeconomic class were 30% and only 8% belonged to higher socioeconomic class. (Figure 1)

DISCUSSION AND CONCLUSION:

This study showed that the prevalence of exclusive breastfeeding till 6 months in mothers of vicinity of Sheikhpura, Pakistan was 43.3% while in Hong Kong it was 26%²⁸, in UK it was almost 20%⁸. This study showed that prevalence of exclusive breastfeeding till 6 months was low in European and high-income countries and high in Asian and low-income countries. This study showed that most mothers had started weaning at around 6th month (51.3%) while 32% of mothers had started weaning before 6 months

This study showed that there was strong link between socioeconomic status and duration of exclusive breastfeeding with 51.5% of mothers in low socioeconomic group exclusively breastfeeding their infants till 6 months, as compared to 42.9% in middle socioeconomic group and 17.2% in high socioeconomic group. This study also showed that there was no strong link between month of start of weaning and socioeconomic status. In high SES 53% of mothers started weaning in 6th month as compared to 51% in middle SES and 44% in high SES. So, most mothers in all socioeconomic groups had started weaning in 6th month.

This study also showed that there was also significant difference in the type of liquid added to diet of infant in different SES. Like 57.1% of mothers in high SES gave formula milk while 50.5% of mothers in low SES gave water and cow's milk to their infants along with breast milk.

This study showed that the almost half mothers exclusively breastfed their infants till 6th month and afterwards mostly started weaning with cerelac and rice, the liquid added to diet was water and cow's milk. So, this study indicates that the weaning practices were quite poor in the district of Sheikhpura and there were also differences in weaning practices in different SES, so proper measures should be taken to improve it.

Conflict of interest:

There was no conflict of interest from the university where study was conducted neither there was any conflict of interest in area from where data was collected.

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