

# Knowledge and Practices of Infant and Toddler Weaning among Mothers attending Pediatrics Department of a tertiary care hospital in Lahore

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## ABSTRACT

**Aim:** To assess the weaning knowledge, practices and the influencing factors.

**Methods:** Questionnaires were filled from 315 mothers with children aged 06-24 months, who visited Pediatrics OPD Services Hospital, Lahore, Pakistan in 4 months. Weaning knowledge and practices of the respondents were evaluated by using a pre-tested questionnaire. Chi-square test was used to assess the associations between the variables. It was ranked as good, satisfactory and poor based on the gross sum total.

**Results:** The overall knowledge of weaning was good in 159(50.5%) mothers and 133(42.2%) had satisfactory knowledge. Whereas the practices of 152(48.3%) mothers out of 315 were good but poor in 46(14.6%) of the mothers. There is a statistically significant association between the knowledge and practices of weaning with age of children (p values= 0.000 and 0.000, respectively) and total number of children of the respondents (p-values= 0.000 and 0.000, respectively). Residential status of respondent (p-value=0.028) and educational status of mothers (p-values= 0.01) also showed significant association with mothers knowledge. Outcome variables (p-values=0.02 and p-value= 0.026 respectively) are also statistically significant with the source of information and weaning practices. We also found an association with the type of family of the respondent (p-value=0.034).

**Conclusion:** These findings will be helpful in making strategies of awareness program so that the effects of pre- or post-weaning can be minimized.

**Keywords:** Assessment; Complementary feeding; Weaning; Pediatrics; breast-feeding; Practices; Knowledge.

## INTRODUCTION

Inadequate nutrition among children is still a problem in some South Asian countries. The first 2 years of children are the most important regarding complementary feeding<sup>1</sup>. Any thick porridge like, liquid or mashed food with nutritional energy, that a child receives in addition to breast milk is called weaning. Such foods are particularly made ready for infants before they shift to adult diet therefore it is also known as transition foods which initiate the weaning process<sup>2</sup>. An appropriate diet plays an essential role in the proper nourishment. Healthful complementary habits are essential for their optimal growth and development, that decrease child mortality and morbidity<sup>3</sup>. Delayed weaning can result into drastic health implications as mother's milk alone is insufficient for proper nutrition of baby especially after six months of age. Weaning practices have long been shown to have remarkable impact on mother and infant health.

Malnutrition has been responsible for 60% of the over decuple million expiries per annum in under five years of age children. More than half of these mortalities happen during the first year of age mostly due to faulty and inaccurate feeding trends observed by mothers<sup>4</sup>. Appropriate breast feeding and weaning can reduce under five mortality by 19%<sup>3</sup>.

Early initiation of transition to semi-solid/solid diet is correlated with high risk of food allergy, skin diseases like eczema and gastroenteritis. Weaning less than three months has been established to elevate the chances of respiratory distress long-lasting cough and sore throat among children between 14-39 weeks of age. Some studies suggest that there is increased obesity in childhood due to early introduction of solid foods. Feeding behavior, nutritional deficiencies and failure to grow has also been observed if the complementary feeding is continued beyond the recommended duration of weaning<sup>5</sup>.

Globally, it is reported that the mother's knowledge has a strong association with weaning of a child<sup>6</sup>. The hindrance in introduction of weaning items to children is a great cause of undernourishment in Southern Asia. Semi-solids are inaccessible to majority of children till 9 months of age, and some children still are deprived of weaning food until their 2<sup>nd</sup> year of life (UNICEF)<sup>7</sup>.

According to "National Nutrition Survey Pakistan" 30-50% children do not receive any accustoming diet until the child reaches the age of 1 to 2 years. Start of weaning in rural areas of Pakistan was also late<sup>8</sup>.

As per WHO's "Global Target 2025" by making people enlightened of exclusive breastfeeding and the start of weaning between six to 24 months of age, will reduce the stunting by 40% in children below the age of 5 years<sup>9</sup>. Scanty knowledge about adequate foods and correct weaning practices is frequently an essential factor of malnourishment in children than the deficiency or absence of appropriate amount of food<sup>3</sup>. Data regarding complementary foods and weaning practices in Pakistan is scarce<sup>31</sup>.

This research is undertaken to evaluate weaning knowledge and practices of mother about weaning that will help to spread the awareness about feeding practices and can help devise strategies to decrease the mortality rate of children due to malnutrition.

## METHODOLOGY

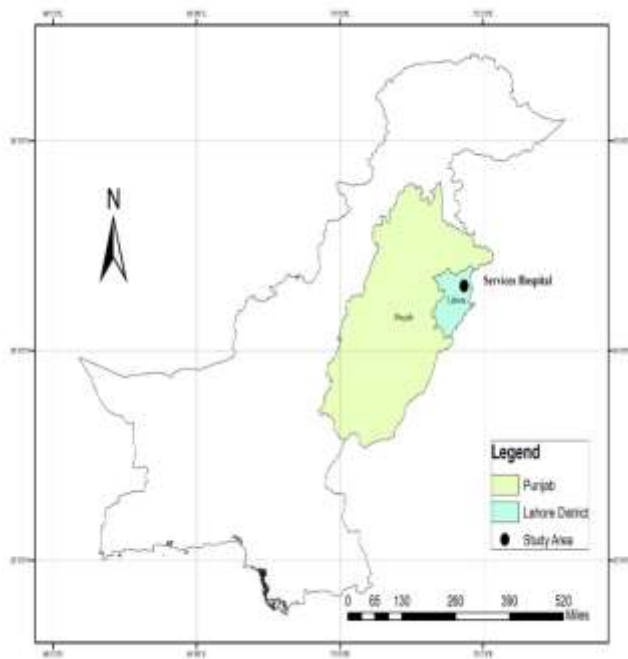
A cross-sectional study was conducted in the Pediatrics outpatient department, in a tertiary level Services Hospital, Lahore, Pakistan. The size of the sample was calibrated by WHO size. Keeping confidence interval at 95% and anticipated population proportion 57%<sup>10</sup> with relative precision 10%, the minimum sample size was 315. The duration of study was from 15<sup>th</sup> September - 31<sup>st</sup> October 2020 and from 15<sup>th</sup> March- 30<sup>th</sup> April 2021, in between the peaks of COVID-19. Mothers with at least one child aged 06 -24 months visiting pediatrics, outpatient department, participated and took a questionnaire which was semi-structured and translated in urdu language. Verbal consent was taken. The formal permission was taken from IRB of Services Institute of Medical Sciences/ Services Hospital Lahore (Figure 1).

**Statistical Analysis:** Data was analyzed via SPSS version 22. For quantitative variables mean, standard deviation and frequency of different classes of each variable was computed. For qualitative variable frequency distribution tables and percentage was generated. Likert scale was applied for which every right answer was granted with a mark. Chi-square ( $\chi^2$ ) test was used to evaluate the statistical relation of socio demographic variables and different factors on knowledge and practices with reference to weaning. The statistical significance was set for all statistical tests at  $p < 0.05$  at 95% CI.

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Figure 1: Study area map- Service Hospital Lahore



## RESULTS

The knowledge and practices of weaning were categorized into good, satisfactory and poor<sup>11</sup>. Good rank was above 70%, Satisfactory rank for a total between 50-70%, and poor rank for sum total below 50%. 147(46.7%) of the mothers were of the age group 26–30 years with a mean age of 30±4.77 years. Among children, 204(64.8%) were 12–24 months of age with mean age of 14±5.05 months.

Table 1: Socio-demographic profile

Socio-demographic profile	Frequency
<b>Age of Mothers in Years</b>	
16-20	5 (1.6%)
21-25	47 (14.9%)
26-30	147 (46.7%)
31-35	79 (25.1%)
36-40	28(8.9%)
>41	9 (2.9%)
<b>Age of children in Months</b>	
6-8	55 (17.5%)
9-11	56 (17.8%)
12-24	204 (64.8%)
<b>Residential area</b>	
Urban	259 (82.2%)
Rural	56 (17.8%)
<b>Educational status of Mothers</b>	
Illiterate	39 (12.4%)
Primary	25 (7.9%)
Middle	24 (7.6%)
Matric	50 (15.9%)
FA/FSc	46 (14.6%)
Bachelors and above	131 (41.6%)
<b>Occupation of Mothers</b>	
Housewife	231 (73.3%)
Working	84 (26.7%)
<b>Source of information regarding weaning</b>	
Mother	129 (41%)
Doctor/LHV/LHW	112 (35%)
Mother-in-law	30 (9.5%)
Others	44 (14%)
<b>History of Drug Abuse (cigarette/hooka/etc.)</b>	
Yes	9 (2.9%)
No	306 (97.1%)
<b>Income per capita (Rupees)</b>	
<1500	14 (64.1%)
1501-3000	50 (15.6%)
3001-4500	49 (15.9%)
>4500	202 (64.1%)
<b>Type of family</b>	
Nuclear	164 (52.1%)
Extended	151 (47.9%)

Table 2: Assessment of Knowledge and Practices of mothers in relation with ranks of complementary feeding.

Rank	Frequency(%) of Knowledge	Frequency(%) of Practices
Good	159 (50.5%)	152 (48.3%)
Satisfactory	133 (42.2%)	117 (37.1%)
Poor	23 (7.3%)	46 (14.6%)
Total	315 (100%)	315 (100%)

Table 3: Association between socio-demographic profile and Knowledge and Practices regarding weaning

Variables	Knowledge		Practices	
	p-values	$\chi^2$ -values	p-values	$\chi^2$ -values
Age of babies in months	0.000*	41.014	0.000*	22.442
Residential Status of the respondent	0.028*	7.128	0.120	4.244
Total number of children of the respondents	0.000*	31.687	0.000*	32.671
Type of Family of the respondent	0.809	0.424	0.034*	6.740
Source of information regarding weaning	0.026*	14.328	0.02	20.603
Educational status of the respondent	0.01	23.340	0.89	16.371
Occupational status of the respondent	0.085	4.932	0.965	0.71
History of drug abuse	0.693	0.735	1.38	3.955
Age of the respondents in Years	0.084	16.601	0.809	6.079
Income per capita (Rupees)	0.286	7.397	0.561	4.867

\*significance

## DISCUSSION

Weaning is the process of initiating a child into adult diet slowly and progressively along with the mother's breast feeding. Introduction of complementary foods at the right time is an important point in "IYCF" (infant and young child feeding) practices. According to WHO above 30% of children under the age of 5 years are victims of developmental growth, out of which 80% have reduced height growth rate, and 20% are under-weight. To address the gap between knowledge and practice "WHO" and "UNICEF" highlighted importance of exclusive breast-

feeding first 180 days which is supplemented by weaning at six months of age with continued breastfeeding till 2 years<sup>3</sup>.

The findings of the current study indicated that the knowledge about weaning was good among 159(50.5%) mothers. This is more than the reported percentage in 24%<sup>11</sup> but less as compared to the following studies 69%<sup>10</sup>, 92.6%<sup>1</sup>, 59%<sup>12</sup>, 23.9%<sup>13</sup>, 35%<sup>5</sup>, 50% moderate knowledge<sup>14</sup> and 72.4%<sup>30</sup>. This fluctuation is because of the fact that most of the mothers were unaware of the appropriate initiation time and correct weaning foods.

Out of 315 mothers, the overall knowledge of 159(50.5%) mothers was good (>70%),133(42.2%) was satisfactory (50–70%) and

23(7.3%) had poor (<50%) knowledge. In contrast a study<sup>12</sup> documented that 59% of mothers had good knowledge about complementary feeding and 37% had poor. Whereas 4% of the respondents had medium knowledge.<sup>15</sup> A research paper reported that most of the respondents had insufficient knowledge about weaning. A mere fraction of 16(8%) mothers had apt awareness of weaning age, frequency and viscosity<sup>16</sup>. The reason for the difference of practices in our study and others is due to lack of guidance as well as lower socio-economic status of the mothers which affected authentic weaning practices.

In total, the practices of 152(48.3%) mothers out of 315 were good (>70%), satisfactory (50-70%) in 117(37%) and poor (<50%) among 46 (14.6%) of mothers whereas only 7% of the respondents had good weaning practices in a study reported<sup>11</sup>. Another study only 3.5% mothers who started weaning at acceptable time, in correct quantity and appropriate consistency. Furthermore, a research done in India, reported that consistency 30% of the mothers fed according to recommendations and only 6.6% gave right amounts of meals per day<sup>17</sup>. Also in a study in Nigeria, 66%<sup>14</sup> of the weaning practices were poor.

In current study, there was a significant statistical association between knowledge and educational status of mothers is seen (p-value= 0.01). Moreover, studies conducted p <0.001<sup>12</sup>, p-value<0.05<sup>15</sup>, p-value<0.001<sup>5</sup>, p-value<0.05<sup>18</sup>, p-value=0.011<sup>19</sup>, p-value=0.04<sup>20</sup>, (p-value=0.000)<sup>14</sup>, p-value=0.000<sup>21</sup>, p-value=0.038<sup>22</sup>, p<0.001<sup>23</sup>, p-value=0.001<sup>1</sup>, p-value=0.005<sup>24</sup>, p-value<0.001<sup>25</sup>, AOR=2.96, CI 1.2–7.62<sup>29</sup> and p-value=0.012<sup>30</sup> also show significant statistical association between maternal education and weaning knowledge. In contrast, statistics of a few studies p-value=0.25<sup>26</sup> and p-value=0.55<sup>11</sup> do not support this association. Our study showed no significant association between the occupation of the mothers and weaning knowledge and practices, similar to a study p-value=0.63<sup>11</sup>. But on the other hand, statistics of some studies such as p-value<0.01<sup>5</sup>, p-value=0.001<sup>19</sup>, p-value=0.001<sup>1</sup>, p-value=0.004<sup>14</sup> and p<0.001<sup>27</sup> showed association of occupational status of mother with both knowledge and practices of weaning. Such variations in the values have occurred due to the various occupational and educational status of the mothers in the study sample which directly affects the complementary feeding.

Age of children had weighty association with knowledge and practices of transitional feeding (p values= 0.000, and 0.000 respectively). Similarly, studies showed Adjusted OR=7.04<sup>13</sup>, p-value=0.000<sup>20</sup>, p-value<0.001<sup>28</sup> suggesting strong statistical association between these two variables. Residential status of respondent shows statistically significant association (p-value=0.028) with the overall knowledge of mothers about weaning but there is no significant association of weaning practices with it. A research study<sup>11</sup> also showed no association of residential status with knowledge and practices (p-values= 0.253 and 0.868, respectively). The age of respondent in our study along with other studies having values p-value=0.312<sup>1</sup>, p>0.005<sup>5</sup> (p-value= 0.2837 and 0.8531, respectively)<sup>11</sup>, p-value >0.05<sup>18</sup>, p-value=0.218<sup>22</sup>, p>0.005<sup>23</sup>, p-value=0.07<sup>26</sup> do not show any association to knowledge and practices on chi-square but an arithmetically significant relation was observed in studies with p-value=0.011<sup>19</sup>, p-value=0.000<sup>21</sup>, p-value=0.026<sup>24</sup> and p-value=0.017<sup>30</sup>. More age of the respondent appear to have impact on weaning as multipara with higher age have better experience of transitional diet as compared to a younger nulliparous.

Practices and knowledge of mothers regarding complementary feeding (p-value= 0.02 and 0.026) were statistically significant with the source of information. Some studies show that p-value= 0.001<sup>19</sup> and p-value=0.011<sup>24</sup> also indicate statistical association of weaning knowledge and practices with source of information or advice on complementary feeding. Income per capita, in our research, did not show any association with weaning and the knowledge and practices of mothers which is comparable a study showing p-values= 0.923 and 0.70, respectively<sup>11</sup>. A statistically significant association was found in a bunch of studies as follows: p-value<0.001<sup>5</sup>, p<0.001<sup>12</sup>, p-value<0.005<sup>15</sup>, p-value<0.005<sup>18</sup>, p-value=0.036<sup>22</sup>, p-value<0.01<sup>26</sup> and p-value=0.001<sup>28</sup> linking socioeconomic status of the respondent (income per capita) with the knowledge and practices of weaning. Indeed, economic backgrounds of the mothers included in the study plays a significant role as some infant diet has to be purchased. Children belonging to lower socioeconomic class face higher degrees of malnutrition than children of upper class.

Our study shows significant association between knowledge and practices of weaning and total number of children (p-values= 0.000 and 0.000 respectively) similar to findings of research papers with p-value<0.001<sup>5</sup>, p-value=0.043<sup>20</sup> and p-value= 0.013<sup>22</sup> upholds this where as another. Study having p-value>0.05<sup>18</sup> is contrary to this. More number of children suggests more experience of mothers and betterment of her practices towards the upcoming children.

Type of family of the respondent is significantly associated with the weaning practices (p-value=0.034). Further, studies directed in Lahore (p-value=0.001)<sup>11</sup> holds the statistical significance of type of family of the respondents with the weaning practices, contrary to the researches with p-value>0.05<sup>18</sup>, p-value=0.012<sup>20</sup> and p-value=0.932<sup>22</sup>. Regional cultures play an important role in determining of the type of family and thus the mother in nuclear family can give more care to her child as compared to the mothers in extended families. Research conducted in different geographical areas may vary in their results as per their customs and rituals.

Total members of family indicates no statistically significant association between knowledge and practices of weaning (p-values=0.482 and 0.118, respectively). Similarly, a study with p>0.005<sup>13</sup> also shows same kind of association between these variables. The researches support one another as the total members of a family do not participate in child's weaning, it is the mother or a single member of family who is assigned for child's care and diet.

## CONCLUSION

The weaning period represent a massive opportunity for controlling all forms of nutritional deficiencies (imbalance, under-nutrition, over-nutrition and specific deficiency) in children. We observed many cases due to under- or over- weaning. The grades of knowledge and practices are a little bit governed by cultural, social and economics standards. However insufficient knowledge, erroneous weaning practices and inadequate feeding majorly contributes towards malnutrition. The purpose of this study is to create awareness regarding appropriate complementary diet given to a child in his transitional period from exclusive breastfeeding to weaning.

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**Competing Interest:** The authors declare that they have no competing interests.

### Limitations:

- Selection bias might exist.
- Recall bias may be present.
- The time line of study was short and interrupted.
- The sample was collected between 2 peaks of COVID-19.
- Lack of time of mothers in OPD was a massive limitation in our study.

### Recommendations:

- Implementation of and emphasis on accurate weaning practices is need of time
- The governmental organizations and health education programs should step forth to arise the significance of initiation of adequate weaning in time to secure the healthy growth of the child.
- More community-based studies should be conducted to get a better insight on significance of weaning.

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