

# Awareness Level of Mothers Regarding Child Weaning Practice in Aseer Region, Southern of Saudi Arabia

Alam Eldin Musa Mustafa (1),  
 Khalid Hussein Almutairi (2)  
 Fahad Mohammed Almujury (2)  
 Noura Ali Alshahrani (2)  
 Maram saad Alshahrani (2)  
 Saeed Mohammed Almoby (2)  
 Wajd Abdulwahab Almathami (2)  
 Rasha Saeed Al Saleh (2)

(1) Assistant Prof of Paediatrics, College of medicine, King Khalid University, Abha, Saudi Arabia.

(2) Medical Student, College of medicine, King Khalid University, Abha, Saudi Arabia.

## Corresponding author:

Dr. Alam Eldin Musa Mustafa  
 Assistant Professor  
 Department of Paediatrics and Child Health.  
 College of medicine,  
 King Khalid University, University of Kordofan sudan  
 Abha, Kingdom of Saudi Arabia  
 Contact No.: +966557548475  
 Email: k.mm2030@gmail.com

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## Abstract

**Background:** Weaning is the process of gradually introducing an infant diet while withdrawing the supply of its mother's milk. The infant is fully weaned once it is no longer fed any breast milk. Preferred time and method to wean a human infant is controversial. The American Academy of Paediatrics recommends feeding a baby only breast milk for the first six months of its life. Recently, breastfeeding has become challenging as many mothers must return to work relatively soon after the birth of their child.

**Aim:** To assess mother's awareness regarding weaning practices and its determinants among Mothers in Aseer reign, southern Saudi Arabia.

**Methodology:** A descriptive cross-sectional survey was used targeting all mothers in Aseer region. The study was conducted during the period from February 2020 to May 2020. Data were collected using structured questionnaire which was developed by the researchers after intensive literature review and expert's consultation. The questionnaire was uploaded online using social media platforms by the researchers and their relatives and friends to be filled in by all population in Aseer region.

**Results:** The survey included 803 responding mothers whose ages ranged from 20 to 55 years with mean age of  $30.6 \pm 10.2$  years old. University level of education was recorded for 516 mothers (64.3%). Exactly 174 mothers (18.3%) reported that infant food should be breast milk only till the age of 4 months. Regarding importance of breast feeding, 686 (85.4%) of the mothers reported provision of nutrients needed in 1st 6 months and 63.1% reported for reducing infectious diseases risk while only 9 (1.1%) reported that it improves child immunity. In total, good awareness level regarding weaning practice was reported among less than 10% of the surveyed mothers.

**Conclusions & recommendations:** In conclusion, the study revealed that mothers in Aseer region had poor knowledge regarding weaning and weaning practice especially effects of delayed weaning. Their main source of information was based on their personal experience. More effort should be paid to improve mother's awareness and practice regarding breast feeding and weaning.

**Key words:** Weaning practice, breast feeding, mothers, awareness, practice, supplementary feeding.

## Background

Breastfeeding is the feeding of infants and young children with milk from a mother's breast (1). It is recommended that breastfeeding should begin within the first hour of a baby's life and continue as often and as much as the baby wants (2, 3). Deaths of 820,000 children under the age of five could be prevented globally every year with increased breastfeeding (4). Breastfeeding decreases the risk of respiratory tract infections and diarrhea, both in developing and developed countries (5, 6).

Weaning is the process of gradually introducing an infant diet while withdrawing the supply of its mother's milk. The infant is fully weaned once it is no longer fed any breast milk (7). Preferred time and method to wean a human infant is controversial. The American Academy of Paediatrics recommends feeding a baby only breast milk for the first six months of its life (8). Recently, breastfeeding has become challenging as many mothers must return to work relatively soon after the birth of their child. Although, foods are given to children between 4 and 6 months old with the precaution that the food is available to be consumed besides breast milk or formula and is just for "practice". These practice foods are generally soft and runny. Examples include mashed fruit and vegetables (9, 10). The United Kingdom's NHS recommends avoiding foods including those "that contain wheat, gluten, nuts, peanuts, peanut products, seeds, liver, eggs, fish, shellfish, cows' milk and soft or unpasteurised cheese" till the age of six months, due to fear of food allergies or may make the baby ill (11). Delayed weaning may result in protein energy malnutrition which causes severe neurological manifestations (12).

Factors affecting weaning are different and related to socioeconomic status of the mothers, mother's education, culture, norms and beliefs and taboos (13-15). Comprehensive nursing was infrequent. In Kuwait, they use artificial feeding immediately after birth. The breastfeeding rate was 26% while bottle feeding rate was 42%. Between 3 months to 5 months of ages, fruit juices, cereal products like biscuits and cerelac are given to the child (16). In Saudi Arabia, the breastfeeding initiation rate exceeded 95%. Only 8.3% of mothers never breastfeed their children. Early initiation of breastfeeding within the first hour of birth was recorded for 40% of the mothers (17). As for weaning practice in Saudi Arabia, a study in 2016 revealed that 62.5% of the infants received solid foods before reaching 17 weeks old. Younger age, lower education, employment within 6 months post-birth, caesareans and living in low-income households were the most significant predictors of early weaning. Complementary feeding prior to 6 months postpartum was common in Saudi Arabia (18). The current study aimed to assess mother's awareness regarding weaning practices and its determinants among mothers in Aseer region, southern Saudi Arabia.

## Methodology

A descriptive cross-sectional survey was used targeting all mothers in Aseer region. The study was conducted during the period from February 2020 to May 2020. Mothers with at least one breast fed initiated child were included. Data were collected using structured questionnaire which was developed by the researchers after intensive literature review and expert's consultation. The questionnaire data included mother's socio-demographic data such as age and education. The questionnaire included data regarding number of children, age of youngest child, and if mothers provided supplementary feeding for their children. Mother's awareness regarding child weaning practice was assessed, covering duration of breast feeding, age of weaning, supplementary feeding, and effects of early, sudden and delayed weaning. A panel of 5 experts reviewed the questionnaire independently for content validity and all suggested changes were considered until the final tool was created. The questionnaire was uploaded online using social media platforms by the researchers and their relatives and friends, to be filled out by all population in Aseer region. A pilot study was conducted to assess tool applicability and reliability. The tool reliability coefficient (Alpha Cronbach's) was assessed and equalled 0.83.

### Data analysis

After data were extracted, it was revised, coded and fed into statistical software IBM SPSS version 22 (SPSS, Inc. Chicago, IL). All statistical analysis was done using two tailed tests. P value less than 0.05 was considered to be statistically significant. For awareness items, each correct answer was scored one point and total summation of the discrete scores of the different items was calculated. A participant with a score less than 60% (20 points) of the maximum score was considered to have poor awareness while good awareness was considered if she had a score of 60% (21 points or more) of the maximum or more. Descriptive analysis based on frequency and percent distribution was done for all variables including demographic data, awareness items and source of information. Crosstabulation was used to assess distribution of awareness according to the mother's personal data and source of information. Relations were tested using Pearson chi-square test.

## Results

The survey included 803 responding mothers whose ages ranged from 20 to 55 years with mean age of  $30.6 \pm 10.2$  years old. Exactly 765 (95.3%) of the mothers were married. University level of education was recorded for 516 mothers (64.3%) and 57.5% had monthly income of 10,000 SR or more. Regarding number of children, 480 (59.8%) had 1-3 children and 4% of the mothers had 4 children or more. Exactly 161 mothers (20%) had children at age of less than one year and these children were males among 426 (53.1%) of the families. Regarding giving children supplementary feeding with weaning, it was reported by 636 (79.2%) of the mothers (Table 1).

Table 2 illustrates mothers' awareness regarding weaning practice. Exactly 174 mothers (18.3%) reported that infant food should be breast milk only until the age of 4 months. Regarding importance of breast feeding, 686 (85.4%) of the mothers reported provision of nutrients is needed in the first 6 months and 63.1% reported for reducing infectious diseases risk while only 9 (1.1%) reported that it improves the child's immunity. Considering time to introduce supplementary food for the child, 338 mothers (42.1%) said at the age of 4-6 months. The average daily meals during weaning of 2-4 meals was reported by 495 mothers (61.6%). As for Pattern of the daily feeding rate at the beginning of weaning, 706 mothers (87.9%) reported that breast feeding during weaning should stop gradually. As for kind of food introduced during breast feeding, 653 (81.3%) of the mothers reported crushed and easy to chew food, 496 (61.8%) reported crushed vegetables and fruits while fluids were reported by 57.3% of the mothers. Age of 1 year as the suitable age for the child to eat family food without contraindications was mentioned by 388 (48.3%) of the mothers. Also, 1 year was the age at which the infant can completely dispense with breast milk was reported by 89 mothers (11.1%). Regarding effect of

early weaning, 708 mothers (88.2%) reported deprivation of child from breast feeding nutrients and 406 (50.6%) said malnutrition. Considering effects of sudden weaning, 689 (85.8%) mothers reported psychological disturbance (crying) and 65.3% reported refusing alternative food. Connection of the child with mother was the most reported effect of delayed weaning (75%; 602) followed by tooth disorders (53.2%; 427). In total, good awareness level regarding weaning practice was reported among 92 mothers (11.5%).

As for source of information (Figure 1), personal experience was the most reported source (52.4%) followed by internet (17.1%), family and friends (16.7%), and physician (13.8%).

Regarding distribution of mothers' awareness regarding weaning practice according to their personal data (Table 3), only mother's level of education was the significant predictor as good awareness level was recorded among 25.5% of university students compared to 6.1% of mothers with secondary level of education or less ( $P=.003$ ).

**Table 1. Personal data of surveyed mothers in Aseer region, Saudi Arabia**

Personal data	No	%	
Age in years	20-29	222	27.7%
	30-39	361	45.0%
	40-49	181	22.5%
	50+	39	4.9%
Marital status	Married	765	95.3%
	Divorced/ widow	38	4.7%
Educational level	Secondary or below	147	18.3%
	Diploma	89	11.1%
	University student	51	6.4%
	University/ more	516	64.3%
Monthly income	< 5000 SR	66	8.2%
	5000-10000 SR	275	34.2%
	10000-15000 SR	242	30.1%
	15000-20000 SR	136	16.9%
	> 20000 SR	84	10.5%
Number of children	1-3	480	59.8%
	4-6	291	36.2%
	7+	32	4.0%
Age of youngest child	< 1 year	161	20.0%
	1-5	369	46.0%
	5-10	177	22.0%
	10-15	96	12.0%
Child gender	Male	426	53.1%
	Female	377	46.9%
Did you give your child supplementary feeding	Yes	636	79.2%
	No	167	20.8%

Table 2. Mothers' awareness regarding weaning in Aseer region, Saudi Arabia

Awareness regarding weaning		No	%
<b>At what age should infant food be breast milk only?</b>	<i>At age of 3 months</i>	68	8.5%
	<i>At age of 4 months</i>	147	18.3%
	<i>At age of 6 months</i>	357	44.5%
	<i>At age of 9 months</i>	35	4.4%
	<i>At age of 1 year</i>	196	24.4%
<b>The importance of breastfeeding the infant</b>	<i>Provision of nutrients needed at 1st 6 months</i>	686	85.4%
	<i>Reduce infectious diseases risk</i>	507	63.1%
	<i>Normal weight gain of the child</i>	333	41.5%
	<i>Reduce risk of breast and ovarian cancers of mothers</i>	499	62.1%
	<i>Reduce risk of osteoporosis</i>	295	36.7%
	<i>Improve child immunity</i>	9	1.1%
	<i>Others</i>	3	.4%
<b>The time to introduce meals (supplementary foods) other than breast milk for a child's diet</b>	<i>Before age of 3 months</i>	9	1.1%
	<i>4-6 months</i>	338	42.1%
	<i>9-12 months</i>	443	55.2%
	<i>After age of 12 months</i>	13	1.6%
<b>The average daily meals for a child other than breast milk during weaning</b>	<i>Once daily</i>	47	5.9%
	<i>2-4 times daily</i>	495	61.6%
	<i>5-9 times daily</i>	244	30.4%
	<i>&gt; 9 times daily</i>	17	2.1%
<b>Pattern of the daily feeding rate at the beginning of weaning?</b>	<i>BF stop gradually</i>	706	87.9%
	<i>BF stop directly</i>	26	3.2%
	<i>Daily BF frequency should not be reduced with weaning</i>	71	8.8%
<b>Kind of food a child can eat at the beginning of weaning?</b>	<i>Don't know</i>	30	3.7%
	<i>Fluids</i>	460	57.3%
	<i>Crushed and easy to chew food</i>	653	81.3%
	<i>Crushed vegetables and fruits</i>	496	61.8%
	<i>Crushed rice</i>	363	45.2%
	<i>Solid food</i>	55	6.8%
	<i>Grapes</i>	113	14.1%
	<i>Egg</i>	273	34.0%
	<i>Meat</i>	89	11.1%
	<i>Spicy food</i>	9	1.1%
<i>Nuts</i>	18	2.2%	

(Table 2 continued) Mothers' awareness regarding weaning in Aseer region, Saudi Arabia

Awareness regarding weaning, continued		No	%
<b>The age at which an infant can eat family food without contraindications</b>	<i>At age of 1 year</i>	388	48.3%
	<i>At age of 2 years</i>	201	25.0%
	<i>At age of 9 months</i>	50	6.2%
	<i>9-12 months</i>	164	20.4%
<b>At what age can the infant completely dispense with breast milk?</b>	<i>Till age of 6 months</i>	7	.9%
	<i>Till age of 9 months</i>	21	2.6%
	<i>Till age of 1 year</i>	89	11.1%
	<i>Till age of 2 years</i>	686	85.4%
<b>The effects caused by the early weaning of the child</b>	<i>Nothing</i>	42	5.2%
	<i>Deprivation of child from breast feeding nutrients</i>	708	88.2%
	<i>Increase the risk of infectious diseases</i>	310	38.6%
	<i>GIT disturbance</i>	259	32.3%
	<i>Malnutrition</i>	406	50.6%
	<i>Food allergy</i>	109	13.6%
<b>The effects caused by sudden child weaning</b>	<i>Psychological disturbance</i>	19	2.4%
	<i>Nothing</i>	19	2.4%
	<i>Refusing alternative food</i>	524	65.3%
	<i>Psychological disturbance (crying)</i>	689	85.8%
	<i>Breast pain</i>	454	56.5%
	<i>Breast inflammation</i>	196	24.4%
	<i>Recurrent infectious diseases for the mother</i>	147	18.3%
<b>The effects caused by delayed child weaning</b>	<i>Nothing</i>	195	24.3%
	<i>Nothing</i>	66	8.2%
	<i>Connection with mother</i>	602	75.0%
	<i>Long term personality effect</i>	231	28.8%
	<i>Poor communication skills</i>	168	20.9%
	<i>Tooth disorders</i>	427	53.2%
	<i>Iron deficiency anaemia</i>	92	11.5%
<b>Overall awareness level</b>	<i>DM</i>	12	1.5%
	<i>Poor</i>	711	88.5%
	<i>Good</i>	92	11.5%



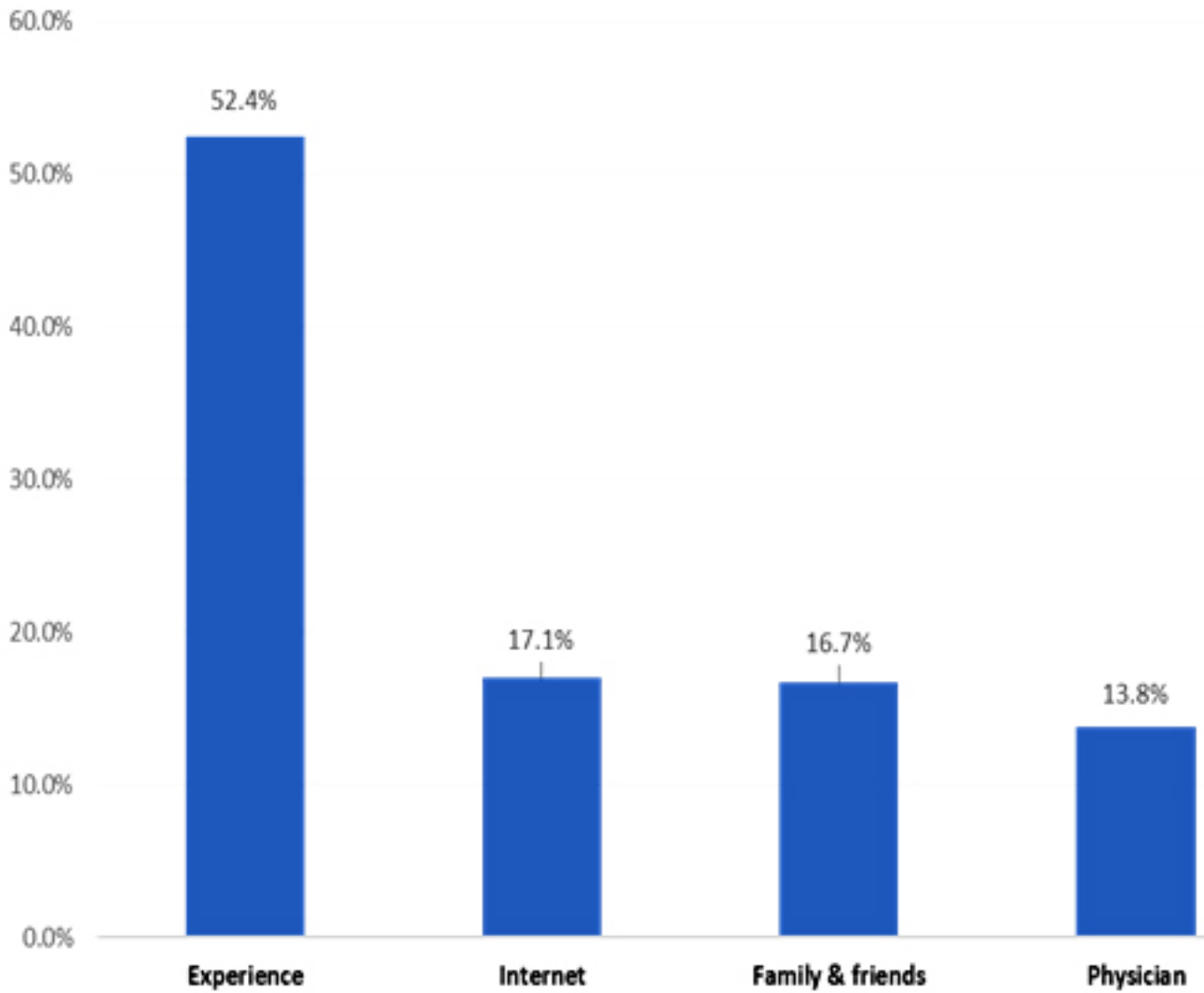
**Figure 1. Source of information regarding weaning as reported by mothers**

Table 3. Distribution of mothers' awareness regarding weaning practice according to their personal data

Factors	Awareness level				P-value	
	Poor		Good			
	No	%	No	%		
Age in years	20-29	193	86.9%	29	13.1%	.361
	30-39	324	89.8%	37	10.2%	
	40-49	157	86.7%	24	13.3%	
	50+	37	94.9%	2	5.1%	
Marital status	Married	676	88.4%	89	11.6%	.480
	Divorced/ widow	35	92.1%	3	7.9%	
Educational level	Secondary or below	138	93.9%	9	6.1%	.003*
	Diploma	80	89.9%	9	10.1%	
	University student	38	74.5%	13	25.5%	
	University/ more	455	88.2%	61	11.8%	
Monthly income	< 5000 SR	62	93.9%	4	6.1%	.138
	5000-10000 SR	243	88.4%	32	11.6%	
	10000-15000 SR	206	85.1%	36	14.9%	
	15000-20000 SR	126	92.6%	10	7.4%	
	> 20000 SR	74	88.1%	10	11.9%	
Number of children	1-3	425	88.5%	55	11.5%	.622
	4-6	256	88.0%	35	12.0%	
	7+	30	93.8%	2	6.3%	
Age of youngest child	< 1 year	151	93.8%	10	6.2%	.105
	1-5	325	88.1%	44	11.9%	
	5-10	153	86.4%	24	13.6%	
	10-15	82	85.4%	14	14.6%	
Child gender	Male	374	87.8%	52	12.2%	.478
	Female	337	89.4%	40	10.6%	
Source of information	Family & friends	114	85.1%	20	14.9%	.128
	Internet	121	88.3%	16	11.7%	
	Physician	105	94.6%	6	5.4%	
	Experience	371	88.1%	50	11.9%	
Did you give your child supplementary feeding	Yes	567	89.2%	69	10.8%	.291
	No	144	86.2%	23	13.8%	

P: Pearson X2 test

\* P &lt; 0.05 (significant)

## Discussion

Breastmilk provides all the energy and nutrients that the infant needs for the first months after birth, and it provides up to half or more of a child's nutritional needs during the second half of the 1st year, and up to one third during the second year of life (19). Human milk alone, even in reasonable quantities, cannot provide all the energy and protein required for maintaining an adequate velocity of growth for the infant, after the age of six months. Adequate nutrition is essential to maintain optimum health of baby at the age of 6 months (20). Malnutrition and micronutrient deficiencies are a very common effect of delayed weaning and improper weaning practices. There are many factors affecting weaning practices. Initiating complementary feeds too late or too early can lead to malnutrition (21).

The current study aimed to assess mother's awareness regarding weaning practice in Aseer region, Southern Saudi Arabia. The study revealed that only nearly one out of each 10 mothers had good awareness level regarding weaning practice. Not all mothers were knowledgeable regarding the optimum age of having complementary food and when exactly the child can completely dispense with breast feeding. Also, irrespective of that, most mothers know about the importance of breast feeding, but they showed vary poor awareness regarding its significant role in improving their children's immunity. Also, not all mothers were knowledgeable regarding which type of food the child could have at the beginning of weaning, especially fruits and vegetables. As most mothers reported good awareness regarding the effect of early and sudden weaning but most of them had lack of knowledge regarding delayed weaning other than it can cause teeth disorders. Effect of delayed weaning on personality, malnutrition, and poor communication were not reported by most mothers. The only significant determinant of mothers' awareness regarding weaning practice was their level of education. Mothers with higher education level were more knowledgeable than others. There was an interesting finding that the most recorded source of mothers information regarding weaning was their own experience which means that there is defect from the medical staff side during antenatal care as they should be the main source of information for breast feeding and weaning. Another finding was that nearly one out of each five mothers did not give her child supplementary feeding which mostly meant delayed weaning.

A study was conducted by Pant I et al in India to assess mother's knowledge regarding weaning practice (22). The study result shows that about 42% of the mothers of infants had poor knowledge about the weaning process. 38% of the samples had average knowledge regarding weaning process and 20% of the mothers are aware and had good knowledge regarding weaning process. A second study was conducted by Karnawat D et al (23), and revealed that rural mothers had poor knowledge regarding choice of milk for infants, and duration of exclusive and total breastfeeding. Only 20% of rural mothers knew about correct age of weaning. Knowledge and practice scores of mothers from urban areas were better than that of rural ones. The average knowledge score of urban mothers

in breast feeding and weaning was 61.6% and 64.0% respectively as compared to 45% and 44% respectively of rural mothers. Conversely, mothers included in a study conducted by Mohammed ES in Egypt had good knowledge regarding the significance of breastfeeding for children (24). As regards weaning, the majority (92.5%) of the mothers defined weaning correctly. The majority of the mothers (94.8%) reported that breastfeeding protects the child from infection, 96.1% agreed that it is the healthiest for the infant, 76.5% agreed that breast milk lead to loss of figure and 83.4% agreed that breastfeeding should be avoided during mother's illness.

## Conclusion and Recommendations

In conclusion, the study revealed that mothers in Aseer region had poor knowledge regarding weaning and weaning practice. Their main source of information was based on their personal experience. Physician role in providing health education regarding breast feeding and weaning practice was defective. More effort should be paid to improve mother's awareness and practice regarding breast feeding and weaning. This needs national and family-based interventions. Health education sessions can be held during child vaccination sessions besides what should be during antenatal care visits. Social media is an effective method to provide educational material to mothers in an easy and interesting way.

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