

## Comparing Infant Nutrition in Wanted and Unwanted Pregnancies

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### Abstract

#### Background

The current study was conducted to investigate the relationship between unwanted pregnancy based on couples' opinions and infant nutrition type in women referred to the health centers in Mashhad city and their husbands.

#### Materials and Methods

In this analytical-descriptive study, unwanted or wanted progenies were studied from the viewpoints of 366 women referred to the health centers in Mashhad city, Iran and their husbands; and also their relationships with infant nutrition type at the age of 4 months. The data were collected through questionnaires. The validity and reliability of the method and instruments were confirmed by content validity and test-retest. Moreover, data analysis was done using SPSS-16.0 software.

#### Results

The average age of women in wanted pregnancy was  $26.43 \pm 4.57$  years and  $27.57 \pm 5.22$  years in unwanted women. The results showed a statistically significant relationship between unwanted pregnancy from the viewpoints of couples and infant's nutritional status ( $P=0.03$ ). The prevalence of unwanted pregnancy in women with lower education (middle and high school) was higher than those with higher education.

#### Conclusion

Our results showed a significant association between baby's nutrition and unwanted pregnancy. Furthermore, an increased use of non-exclusive breastfeeding in unwanted pregnancy is necessary. Hence, proper use of contraceptive methods, preventing the adverse consequences of unwanted pregnancy such as non-exclusive breastfeeding, useful educational strategies, counseling and health services are necessary to be taken into account.

**Key Words:** Infant; Nutrition, Unwanted pregnancy.

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## 1- INTRODUCTION

Breast milk is an ideal source of nutrition for newborns which is a complex biological fluid containing thousands of components in different parts, such as liquid phase with soluble substances, colloidal particles, fat droplets emulsion, fat droplets membranes and living cells. In addition to proper nutrition, immune factors and antibacterial, anti-viral and anti-parasitic features, it also contains factors acting as biological signals in accelerating growth and cell differentiation (1-6). Baby nutrition is important from various aspects during the first years of birth. Earlier studies have provided strong evidences indicating that breastfeeding in infants, decreased incidence and severity of diarrhea, lower respiratory tract, ear, blood, bacterial meningitis, and urinary tract infections, and also necrotizing enterocolitis. In previous studies, the protective effect of breastfeeding have been shown against sudden infant death syndrome, insulin-dependent diabetes, Crohn's disease, ulcerative colitis, lymphoma, allergic diseases and other chronic diseases.

Moreover, breastfeeding enhances infants' cognitive evolution and bonding between mother and baby. Breastfeeding also has some advantages for mothers, including reducing the amount of bleeding and hastening the return of postpartum reproductive organs, natural weight loss, delaying return of fertility, reducing the incidence of breast cancer and ovarian cancer before menopause, increasing calcium absorption and reducing the incidence of fractures of the long bones and pelvis. The spread of breastfeeding can decrease the health care costs and enhance mothers' and infants' health (2, 4, 7-11). Therefore, World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) recommend that every child should be exclusively breastfed for six

months, and continued up to 2 years or more (10, 12, 13). Unfortunately, in Iran, despite efforts made by the Ministry of Health and Medical Education to promote breastfeeding as an important strategy for the growth and survival of children, the rate of exclusive breastfeeding, is still low (1, 14). Nowadays, reduction in breastfeeding rate is one of the most crucial health problems and has several related factors such as wanted or unwanted pregnancy. The term unwanted pregnancy refers to those pregnancies that were not intended at any time, which is one of the most critical health problems worldwide and has adverse effects on mother, wife, and if the pregnancy continues, for the future of children and entire family (15-19). According to WHO report, 210 million pregnancies take place each year worldwide, as one-third of them (about 87 millions) are unwanted (19).

In Iran, despite efforts made such as covering birth control program, unwanted pregnancy is one of the common health problems, and has a large proportion of pregnancies (from 25% to 35% in different regions) (20). The results of Integrated Management and Evaluation Survey (IMES), investigation showed that unwanted pregnancy rate of 29.4 % in the country (21). Women and their children are the vulnerable group in unwanted pregnancies. When an unwanted infant is born, both mother and infant are at risk of some problems such as nutritional ones. However, there have been studies on the length, initiation and duration of breastfeeding in unwanted pregnancies, but no detailed studies have been carried out on its impacts on baby nutrition type. Moreover, in studies on pregnant women status, the necessity for further considerations for unwanted pregnancy and its consequences is highly recommended (22, 23). Due to high unwanted pregnancy percentage, its impacts and problems on infants' and

mothers' health including low rate of breastfeeding and its outcomes and also lack of proper investigations in Iran, the current study was carried out to the comparing Infant Nutrition in Wanted and Unwanted Pregnancies in women referred to the health centers in Mashhad in 2013 and 2014.

## **2- MATERIALS AND METHODS**

### **2-1. Methods**

This research was an analytical-descriptive study conducted in the health centers in Mashhad city, Iran in 2013. This study is part of an extensive study and some of data has been published in previous study. The women were selected from the health centers that had passed four months of childbirth. The participants were assessed from infant nutrition type in wanted and unwanted pregnancies.

### **2-2. Samples**

Sampling was done using stratified multistage, cluster, and convenience sampling. 366 women who referred to the clinics after four months of childbirth for receiving postpartum services such as child growth monitoring, immunization and family planning counseling and their husbands were selected to participate in the study.

### **2-3. Inclusion and exclusion criteria**

The selection criteria included women aged between 18-45 years old with safe childbirth, singleton pregnancy and healthy baby. Other criteria included being husband's only sexual partner, having no second marriage, diseases and addiction to any sort of drugs (also drugs affecting sexual function), and alcohol, not living far away from each other and having intercourse after delivery. Informed consent was also obtained from all the participants

### **2-4. Measuring tools, validity and reliability**

The data collection was done using questionnaires containing three parts. The first part contained demographic data, like personal and social identification, labor, childbirth and afterbirth, the second part contained questions related to the type of pregnancy (wanted or unwanted), and the last part was on child nutrition type. The validity of the questionnaire was confirmed by the content validity. After careful perusing of scientific textbooks, national and international magazines and papers regarding the subject, the forms were prepared and monitored under the supervision of supervisors, family planning advisor, and the faculty members of Mashhad University of Medical Sciences. The validity of questionnaire was confirmed after considering professors' amendments and suggestions, supervisors' and consultant's final confirmation. Furthermore, its reliability was confirmed by test-re-test ( $r=0.77$ ).

### **2-5. Data analyzes**

After data collection, the analysis was carried out using SPSS (version 11.5), and descriptive (frequency, mean and standard deviation [SD]) and analytical statistics (Chi-square test). In these statistical tests, reliability coefficient and test power were considered 95% and 80%, respectively.

## **3- RESULTS**

366 eligible mothers and their husbands according to inclusion and exclusion criteria were enrolled in this research. At the end of the study 288 mother and their husbands were assessed. The response rate in this study was 79%. The average age of women in wanted pregnancy was  $26.43\pm 4.57$  years and  $27.57\pm 5.22$  years in unwanted one. In both groups, in terms of education and job, the maximum frequencies were for high school (44.8%) and housewife (41.4%), respectively; while, in terms of husband's education in wanted and unwanted groups, high and secondary schools showed the highest

frequencies (33.3% and 40%, respectively). Finally, in terms of incomes (67.7 and 68.6), showed the highest frequencies in wanted and unwanted groups, respectively. Comparison of two groups revealed a significance difference between them in terms of age (P=0.06), wife's education (P=0.18), wife's job status (P=0.67), husband's education (P=0.75), their job

husband's job and family income status, freelance job (55.7 and 58.6) and moderate (P=0.67), and family income status (P=0.78).The frequency distributions of demographic and social characteristics of both groups are presented in **Table.1**. According to Chi-square test results, there was a significance difference between both groups from couple's view in terms of baby nutrition type (P=0.03) (**Tables 2, 3**).

**Table-1:** The frequency distributions of demographic and social characteristics of subjects.

Variables		Wanted pregnancy		Unwanted pregnancy	
		Frequency	Percent	Frequency	Percent
Woman's Education	Illiterate	6	2.1	0	0
	Basic reading and writing skills	37	12.8	16	22.9
	Junior high school	65	22.6	16	22.9
	High school	129	44.8	29	41.4
	Academic degree	65	17.79	9	12.9
	Overall	288	100.0	70	100.0
Woman's Job	Housewife	263	91.3	65	92.9
	Working	25	8.7	5	7.1
	Overall	288	100.0	70	100.0
Husbands' Education	Illiterate	7	2.4	2	2.9
	Basic reading and writing skills	40	13.9	10	14.3
	Junior high school	94	32.6	28	40.0
	High school	96	33.3	21	30.0
	Academic degree	51	17.7	9	12.9
	Overall	288	100.0	70	100.0
Husbands' Job	Farmer	4	1.4	1	1.4
	Employee	52	18.1	12	17.1
	Worker	59	20.6	16	22.9
	Freelance	160	55.7	41	58.6
	Student	5	1.7	0	0
	Jobless	7	2.4	0	0
	Overall	287	100.0	70	100.0
Family Income Status	Below Moderate	91	31.6	22	31.4
	Moderate	195	67.7	48	68.6
	More than moderate	2	0.7	0	0
	Overall	288	100.0	70	100.0
Woman's age	Mean± SD		Mean± SD		
	4.57±26.43		5.22± 27.57		

SD: Standard deviation.

**Table-2:** The comparison between infant nutrition in wanted and unwanted pregnancy from pregnant women's opinion

Variables		Wanted pregnancy		Unwanted pregnancy	
		Frequency	Percent	Frequency	Percent
Infant Nutrition	Exclusive breastfeeding	240	84.2	51	72.9
	Infant formula	15	5.3	6	8.6
	Breastfeeding plus formula	27	9.5	9	12.9
	Breastfeeding plus complementary feeding	3	1.1	4	5.7
	Overall	285	100.0	70	100.0
	Test Result	Chi-square: 8.75		df = 3	P-value= 0.03

df: degrees of freedom.

**Table-3:** The comparison between infant nutrition in wanted and unwanted pregnancy from husbands' opinion

Variables		Wanted pregnancy		Unwanted pregnancy	
		Frequency	Percent	Frequency	Percent
Infant Nutrition	Exclusive breastfeeding	234	83.9	46	73.0
	Infant formula	15	5.4	4	6.3
	Breastfeeding plus formula	27	9.7	9	14.3
	Breastfeeding plus complementary feeding	3	1.1	4	6.3
	Overall	279	100.0	63	100.0
	Test Result	Chi-square: 8.75		df = 3	P-value= 0.03

df: degrees of freedom.

#### 4- DISCUSSION

The results of the current study showed that there was a significant difference between baby nutrition types in both groups. As previous studies have revealed that breastfeeding in unwanted pregnancy is lower, which is in consistent with our results. Taylor et al. (2002) showed that breastfeeding length and duration was lower in unwanted pregnancy group (23). In another temporary study, the length of starting and inclusive breastfeeding were lower in women with unwanted pregnancy (24). Moreover, Gipson et al. (2008) showed that psychological stress resulted from unintended pregnancy can prevent the start of breastfeeding (25). In other studies, breastfeeding was started later and took less time in children born from unwanted pregnancies (26).

Furthermore, Rahim Zadeh et al. (2007) found that pregnancy type is one of the important effective factors in breastfeeding duration and unwanted pregnancy resulted in early stop of breastfeeding (27). On the other hand, Kost et al. (1988) revealed that the optimal childcare and breastfeeding in wanted pregnancy was more than unwanted one (28). Eventually, based on Cheng et al. (2009) results, the duration of breastfeeding over the first 8 weeks of birth in unwanted pregnancy was lower than wanted one (29). Studies in Iran found that inclusive breastfeeding in wanted pregnancy was more compared to unwanted one. According to these studies,

the wanted mothers were ready to accept their infants; so, the breastfeeding was more among them. However, mothers experiencing an unwanted pregnancy may be under more psychological stress and also less interested in accepting their maternal role, resulting in lower inclusive breastfeeding interest (16, 17, 30, 31). Mohammad Pour et al. (2004) revealed that unsuitable growth in babies born from unwanted pregnancies was more than those born from wanted ones (32, 33).

Studies have shown women experiencing unwanted pregnancies took less prenatal care and health behaviors, which may lead to induced abortion, low birth weight, preterm birth and hospitalization. Moreover, such women may not have mental and physical readiness to take on a parenting role as a result of no consent and adaptability to pregnancy and negative interaction between mother and baby. Thus, there would be more problems with breastfeeding, malnutrition, the possibility of negligence, carelessness, ill-treatment and death among children (20, 22, 23, 29, 34). As mentioned earlier, women with unwanted pregnancy can be victims of severe mental illness and postpartum depression due to their unsuitable feelings and emotions, which can lead to decrease in their maternal role especially in breastfeeding (29). Therefore, children from such pregnancies are more likely to be affected due to reduction in breastfeeding, which may have irreparable damages on them (25). According to

previous studies, infants who are not exclusively breastfed, are more likely to die 25 times of diarrhea and 3 times of respiratory infections than exclusively breastfed ones. Furthermore, the rate of acute middle ear infections in non-breastfed children is 2 times more than breastfed ones (5). Hence, in 2011, WHO recommend that every child should be exclusively breastfed for six months, and continued up to 2 years or more in order to have proper growth, development and child health (12, 13). Considering the side effects of unintended pregnancy such as less breastfeeding and also the early years of life as critical in human's growth and development, any damage during which will have lasting effects on the other phases of human growth (35).

The assessment of pregnancy type (wanted or unwanted) can play an important role in its prevention, the purpose of such an assessment is to identify unwanted pregnancies and provide necessary training in order to reduce adverse consequences especially for children. Therefore, paying attention to preconception counseling is very important, as it is considered as a preventive medicine related to pregnancy and delivery (36). Furthermore, given the factors involved in the incidence of unwanted pregnancy and the effective intervention to avoid unwanted pregnancy, in any case of unintended pregnancy, the consequences of this major health, social and family problem can be reduced to some extent through consultation during and after pregnancy.

#### **4-1. Limitations of the study**

Being retrospective is one of the limitations of the current study, because individual's feeling about pregnancy may vary during pregnancy and after delivery.

#### **5- CONCLUSION**

It is essential to provide new and reliable contraception methods due to low

rate of breastfeeding, especially exclusive breastfeeding in unwanted pregnancies. Moreover, health caretakers should more support women experiencing unwanted pregnancy and their husbands, and provide targeted and effective training during pregnancy and delivery, on the importance and benefits of exclusive breastfeeding and also the disadvantages of bottled and complementary feeding in order to promote exclusive breastfeeding and improve health outcomes.

**6- CONFLICT OF INTEREST:** None.

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