



## Awareness and Health Beliefs towards Anemia and its Relationship to Preventive Behaviour among Pregnant Women

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### Abstract

**Background:** Anemia is common in developing nations, where it raises maternal and neonatal morbidity and mortality. Anemia can happen to any expecting mother. This is due to the fact that they require more care than usual to prevent anemia. Therefore, the study aimed to assess pregnant women awareness and health beliefs and its relation to preventive behaviour

**Methods:** On a sample of 250 pregnant patients at Holy Kerbela's Obstetrics and Gynecology Teaching Hospital, a descriptive correlational analysis was done. A pilot study was conducted to establish the questionnaire's dependability before it was presented to experts for validation. Interviewing techniques were used to gather the data, which was then analyzed utilizing a descriptive and inferential statistical data analysis strategy approach.

**Results:** The mean age 26 ( $\pm 7.13$ ), (31.6%) were secondary school graduated, housewife with enough income and used health care providers as a sources of information about anaemia prevention. Results of the study indicated that (40.8%) of the pregnant women exhibited a moderate level of awareness, (41.6%) were moderate health beliefs and (56.4%) were poor preventive behaviour. The preventive behaviour of anemia among pregnant women is positively significant correlated with awareness towards anemia ( $r=0.370$ ;  $p=0.00$ ) and health beliefs towards anemia ( $r=0.279$ ;  $p=0.00$ ).

**Conclusions:** The preventive behavior of anemia among pregnant women depends on their awareness and behavior of health beliefs. A decrease in the prevalence of anemia occurs due to women's health awareness and beliefs. Therefore, pregnant women need to intervene in health awareness programs through the social media in order to improve their preventive behavior.

**Key-wards:** Awareness, Health Beliefs, Preventive Behaviour.

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### INTRODUCTION

[2]. Anemia is thought to affect half of all pregnant mothers in Africa [3]. Actually, the two main illnesses everywhere, but especially in poorer nations. That cause morbidity and mortality in children in sub-Saharan Africa are malaria and anemia [4]. According to Ghana, 55% of expectant mothers are anemic [5]. Anemia is regarded as being as dangerous and compelling as infectious illness epidemics. All people accounts for 20 percent of maternal deaths, and can get anemia, but children, teenagers, and women who are close to menopause are the most vulnerable



[6]. According to recent statistics, anaemia ranks third among all causes of death in Ghana with a proportionate mortality rate of 7.3 percent. It is also the second leading cause of illness and mortality among children under five (12.8 percent and 6.3 percent, respectively), after malaria [7].

Anemia during pregnancy can be fully avoided, though, if you are aware of how to prevent it and use the right techniques [14]. Therefore, the present study aimed to assess pregnant women awareness and health beliefs towards anaemia and its relationship to preventive behaviour in Karbala Province/ Iraq.

Awareness, and/or practice-based food restrictions that deprive pregnant women of essential nutritional nutrition are also unavoidable causes of anemia [8]. Every society has traditional and/or religious ideas about what foods are good for pregnant women and what foods are bad for them. Food classifications might not be precise, and cultural norms might not align with contemporary maternal nutrition. For example, in India, the main foods associated with pregnancy risk include eggs, fish, pork, papaya, banana, eggplant, beans, and peas [9][10].

Pregnancy-related anemia demands immediate intervention in order to fully combat the condition. Combining a number of therapies has been shown to be successful, including nutritional (iron) supplements, treating diseases (particularly malaria and worms), and promoting healthy attitudes and behaviors [11]. Therefore, using food fortification, nutrition education, promoting exclusive breastfeeding, social marketing for improved iron availability in the diet, using insecticide-treated bed nets and Intermittent Preventive Treatment (IPT) against malaria, effective deworming, raising awareness through education, and providing better water, sanitation, and hygiene services are all employed [12]. Because malaria is the primary cause of severe anemia in pregnancy in sub-Saharan Africa, using IPT in conjunction with education lowers maternal and placental malaria [13].

Lack of nutritional information and the ensuing poor use of this knowledge can lead to issues like malnutrition and non-contagious diseases, which is one of the most significant causes of nutritional problems. Worldwide, more than two billion people suffer from iron deficiency anemia. According to the World Health Organization, 58 percent of expectant mothers in underdeveloped nations are anemic.

## METHODS

A descriptive correlational study to investigate the awareness and health beliefs towards anaemia among pregnant women and its related to preventive behaviour. Throughout the non-probability sampling method, a purposive sample of (250) pregnant who attending Obstetrics and Gynecology Teaching Hospital in Holy Kerbela / Iraq.

The questionnaire is one of the means to help collect data that contribute to achieving the results expected by the study, so the researcher designed this questionnaire, which aims to clarify the study objectives and significance by obtaining answers to the study questions.

Section-1: This section composed of socio-demographic information which include women age, education level, occupation, income/month, residents, history of anaemia and sources of information.

Section-2: This section deals with study variables and includes the following.

1. Pregnant women awareness towards anaemia constructed according to the previous literature and consist of 19-items measured on 3-point of Likert scale such as (1×Incorrect, 2×Uncertain and 3×Correct).
2. Health Beliefs towards anaemia adopted and developed by Baharzadeh et al. [15] to measure health beliefs model to promote preventive behaviour against iron deficiency anaemia, which composed of 30 items measured on 5-point of Likert scale such as (0×Strongly Disagree, 1×Disagree, 2×Neutral, 3×Agree and 4×Strongly Agree).



3. Preventive behaviour of anaemia taking the important steps that must be included in constructed according to the previous study design.

literature and consist of 13-items Method of Statistic

measured on 3-point of Likert scale such A SPSS-24 were used analyzed the information as (1×Never, 2×Sometime and 3×Always). was evenly distributed. For continuous variables, descriptive data is reported as mean standard

Validity and Reliability Validity was determined by a panel of 11 arbitrators who were asked to comment on each number (percent). Spearman's Correlation component of the study questionnaire in terms of Coefficient to determine the association between language appropriateness, correlation with the study variables. Statistical significance was defined dimension of study variables to which it was assigned, and suitability for the study population. Data was obtained from pregnant to Finding show participants age, the mean age is assess the questionnaire's reliability, and the test 26 ( $\pm 7.13$ ), the age 20-29 years old were recorded was delivered to 20 people from the study the highest percentage (44.4%). Respected to the population who were not part of the initial sample. education level, most of participants were secondary The Cronbach's alpha was found to be 0.87. school graduated (31.6%). In regard with occupation, the housewife were predominated (73.6%).

Data Collection The data collection through the used Concerning monthly income, half of study sample interview techniques. After obtaining the approval were somewhat enough income (51.2%). Family type of the Karbala Health Directorate and verifying the related findings, most of families were extended validity and reliability of the questionnaire. The (51.6%). Residents associated results, the urban researcher interviewed study participants residents were records highest percentage (78%), in (Pregnant), explained the instructions, answered terms of history of anaemia, more than half of study their questions regarding the form, urged them to sample had history of anaemia. Sources of participate and thanked them for the cooperation. information associated findings, pregnant women The interview techniques was used on individual use a health care provides to gain information bases, and each interview took (15-20) minutes after related anaemia prevention.

**Table (1): Socio-Demographic Characteristics**

SDVs	Classification	Freq.	%
Age/years ( $M \pm SD = 26 \pm 7.13$ )	<20 years old	51	20.4
	20-29 years old	111	44.4
	30-39 years old	65	26.0
	$\geq 40$ years old	23	9.2
Education Level	Unable to read and write	38	15.2
	Read and write	55	22.0
	Secondary school	79	31.6
	Institute	53	21.2
	College and above	25	10.0
Occupation	Student	13	5.2
	Employed	53	21.2
	House wife	184	73.6
Income/ month	Enough	70	28.0
	Somewhat Enough	128	51.2
	Not enough	52	20.8



Family Type	Nuclear	121	48.4
	Extended	129	51.6
Residents	Urban	195	78.0
	Rural	55	22.0
History of Anemia	Yes	182	72.8
	No	68	27.2
Sources of Information	Health Care Provides	137	54.8
	Internet	8	3.2
	Social Media	38	15.2
	Family & Friend	67	26.8

**Table (2):PregnantAwareness**

Pregnant Awareness	Freq.	%	<i>M ± SD</i>
Low ( <i>M=19-31</i> )	68	27.2	<i>37.08±11.61</i>
Moderate ( <i>M=32-44</i> )	102	40.8	
High ( <i>M=45-57</i> )	80	32.0	
<i>Total</i>	250	100.0	

Findings demonstrated that the (40.8%) of pregnant women exhibited a moderate awareness towards anaemia as described by moderate average which equal to 37.08 (±11.61).

**Table (3):Pregnant Health Beliefs**

Pregnant Beliefs	Freq.	%	<i>M ± SD</i>
Poor ( <i>M=0-40</i> )	65	26.0	<i>58.73±34.90</i>
Moderate ( <i>M=40.1-80</i> )	104	41.6	
Good ( <i>M=80.1-120</i> )	81	32.4	
<i>Total</i>	250	100.0	

Findings demonstrated that the (41.6%) of pregnant women exhibited a moderate health beliefs towards anaemia as described by moderate average which equal to 58.73 (±34.90).

**Table (4):Pregnant Health Beliefs**

Preventive Behaviour	Freq.	%	<i>M ± SD</i>
Poor ( <i>M=13-21</i> )	141	56.4	<i>20.45±8.70</i>
Moderate ( <i>M=22-30</i> )	53	21.2	
Good ( <i>M=31-39</i> )	56	22.4	
<i>Total</i>	250	100.0	

Findings demonstrated that the (56.4%) of pregnant women exhibited a poor level of anaemia preventive behaviour as described by low average which equal to 20.45 (±8.70).

**Table (5): Correlation between Awareness and Health Beliefs with regard Preventive Behavior of Anaemia**

Correlation Coefficient	1	2	3
1.Awareness	-	.436**	.370**
2.Health Beliefs	.436**	-	.279**
3.Preventive Behaviour	.370**	.279**	-

Findings exhibit the preventive behaviour of anaemia among pregnant women is significantly correlated (positive) with awareness towards anaemia ( $r=0.370$ ;  $p<0.01$ ) and health beliefs towards anaemia ( $r=0.279$ ;  $p<0.01$ ).

## DISCUSSION

### Pregnant Women Awareness towards Anaemia

The results showed that 40.8% of pregnant women showed a moderate awareness of anemia, as defined by a moderate average of 37.08 ( $\pm 11.61$ ) (table 2). These results are consistent with those from southern Iraq's Al-Amara City, where the majority of expectant mothers had a moderate awareness of anemia. This result may be attributable to a lack of education because the majority attended primary schools or to a lack of experience because the majority were in their first or second pregnancies [16]. These results concur with those of Thapar et al. in South India, who found that the majority of pregnant women had a modest awareness of anemia since their level of education did not allow them to recognize anemia [17].

Additionally, a study to evaluate pregnant women in Libya's knowledge and awareness of anemia risk factors found that all of the women had a moderate understanding of anemia [18]. Once more, a study from Ghana's Brosankro region found that 30% of pregnant women were only partially aware of the symptoms and signs of anemia [19][20]. Results of Appiah et al. in the Western-north area of Ghana revealed that the majority of pregnant women were only partially aware of their anemia because of their

awareness of anaemia and adherence to anaemia

prevention techniques [21]. Because the study population was largely illiterate (informal educated), it is important to acknowledge the role that mass media played in spreading awareness. The current study's findings are higher than those from District Srinagar/India, where 94.6 percent were unaware of anaemia and its impact on their health and pregnancy. Pregnant women need to be made aware of the symptoms, causes, prevention, and treatment of anemia in pregnancy [22]. More than half of the sample (51.3%) had insufficient knowledge about anemia and its contributing causes, according to Ghimire and Pandey's research

[23]. The results of the current study are less significant than those from Nigeria; the majority of the women (68.89%) were aware of anemia, and it is necessary to raise this awareness among pregnant women as well as to provide adequate health education on anemia prevention in order to produce pregnancy outcomes that are healthy for both the mother and the unborn child [24]. Additionally, according to Duko et al., the majority of responders had thorough knowledge of anemia [25]. From point of view, it is needs to be more education and sessions programs including good nutritional practices in the diet of pregnant women be promoted to increase awareness and adherence to anaemia prevention strategies among pregnant women.

### Pregnant Women Health Beliefs towards Anaemia

The results showed that 41.6% of pregnant women had moderate health views about anemia, as represented by the moderate average, which is 58.73 ( $\pm 34.90$ ) (table 3). These results are better than those from Egyptian women, who found that unfavorable health beliefs made up 67.7% of their beliefs [26]. The studies we conducted dealt with pregnant women, whereas Abd El Ghafar's study focused on students who weren't of childbearing age.

Health directors, decision-makers, and social media platforms offer educational seminars to change pregnant women's perceptions of anemia. These initiatives can change pregnant women's perceptions of anemia. Prior to education, there was no discernible change between the control and intervention groups' health beliefs and behaviors in an Iranian study. The mean scores for perceived susceptibility, perceived benefits, perceived barriers, perceived severity, perceived self-efficacy, signals to action, and performance, however, had significant differences three months following the course [27]. According to the HBM, educational intervention that is based on a primary needs assessment significantly

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enhances maternal performance for IDA prevention.gynecology. After our single teaching session, there It is advised that these interventions take the placewas a noticeable improvement in the adherence to of traditional educational programs as a result [28]. anaemia therapy and related preventive measures **Pregnant Prevention Behavior of Anaemia** among pregnant women [33].

### **Pregnant Awareness and Health Beliefs vs. Preventive Behavior**

The results of the current study showed that 56.4% of pregnant women displayed inadequate anemia prevention behavior, as indicated by a low average of 20.45 ( $\pm 8.70$ ). (table 4). The results of thisanaemia among pregnant women is significantly study were slightly better than those of a previouscorrelated (positive) with awareness towards study conducted in a Kathmandu teaching hospital,anaemia ( $r=0.370$ ;  $p<0.01$ ) and health beliefs which found that only 34% of mothers hadtowards anaemia ( $r=0.279$ ;  $p<0.01$ ) (table 5). The adequately implemented preventative behaviorsgreater the awareness of anemia and its health related the prevention of anemia during pregnancy.beliefs, the greater the practice of preventive This minor discrepancy can result from changes inbehavior. Pregnant women having moderate study location and time period [29]. awareness about prevention of anemia during

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According to study results, half of the studypregnancy among study participants significantly participants receiving ANC at West Shoa Zoneassociated with adherence to prevent anemia during Governmental Hospitals have poor preventivepregnancy. behaviors regarding prevention of anemia during This follows in the footsteps of Mirzaei et al. pregnancy. This is because of a number of factors,and Abd El Ghafar, who investigated this link and including education, residency, having a nuclear typefound that there was a statistically significant of family, and prior anemia history, which have beencorrelation between total reported practice scores found to significantly affect preventive behaviorsand total health beliefs scores [34][35]. regarding prevention of anemia during pregnancy Additionally, it has been discovered that good [30]. practices for preventing anemia during pregnancy

The significant prevalence of anaemia inhive a significant impact on participants' Bangladesh and other Asian nations suggests that itunderstanding of anemia prevention. This finding is is a serious public-health concern that requiresconsistent with a study conducted in India, which attention to preventative interventions based on thefound that inadequate prevention practices for inadequate preventive behavior of anaemia.anemia among pregnant women increased anemia According to a study conducted in Ethiopia, the totalrisk by a factor of six and lesser awareness of anemia prevalence of anemia was 41.9 percent, which isamong pregnant women increased the risk of very identical to our findings regarding inadequateanemia by a factor of five [36]. preventative behavior. According to a study The results showed that the scores of conducted in India, out of 66 pregnant women,awareness of respondents was 37.08, the health 40.92% had mild, 54.54 % had moderate, and 4.54 %beliefs was 58.73 and preventive behaviour was had severe anemia [32]. 20.45. Statistical significance correlation (positive)

Numerous factors, including the age of thewas found between awareness towards anaemia mother, her level of education, her income, and theand preventive behaviour ( $r=0.370$ ;  $p=0.000$ ); and low number of pregnancies, may contribute to herbetween health beliefs and preventive behaviour of lack of awareness of the hazards of anemia duringanaemia ( $r=0.279$ ;  $p<0.01$ ). The study adds pregnancy. Pregnant women require more mediaknowledge regarding health education for all and health facility management-led awarenesssegments of society towards anaemia and its campaigns. at the GMERS Medical College inassociated factors. Further studies is needed to Gandhinagar's department of obstetrics andconducted an educational programs to improve





pregnant knowledge, attitudes and practices with regards anaemia prevention.

## CONCLUSION

Anaemia preventive behaviour among pregnant women depends on their awareness and health beliefs behaviour. Holding training sessions and seminars through health directorates and social media which indeed help to develop the preventive behaviour of anaemia among pregnant women.

## Study Suggestion

1. A decrease in the prevalence of anemia is brought on by women's health awareness and beliefs. Therefore, pregnant women need intervention health awareness programs in order to improve their health.
2. Encourage the social media to cover issues relating to anemia and ways to prevent it.
3. Pregnant women and their families should get a manual handbook on anemia prevention and management that is written in plain language and attractively illustrated.

## Ethical Clearance

"All experimental protocols were approved under the Health Directorate, Iraq and all experiments were carried out in accordance with approved guidelines".

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