KNOWLEDGE OF ANEMIA AND ITS ASSOCIATION WITH SOCIOECONOMIC STATUS IN PREGNANT WOMEN AT LIAQUAT UNIVERSITY HOSPITAL JAMSHORO

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Abstract

Background: *Anemia in antenatal females is a serious outcome of maternal and infant mortality and morbidity. Anemia is a blood disorder in which the blood has a reduced ability to transport oxygen due to a lower number of red blood cells in the body. Worldwide the prevalence of anemia in pregnant women is 41.8% as per World Health Organization (WHO) findings*

Objectives: *To determine the knowledge and socioeconomic factors associated with anemia in pregnant women at Liaquat University hospital Jamshoro Sindh.*

Methods: *The descriptive cross sectional survey type method was used. The sample size of the study was (n=335). The sample was selected using purposive sampling method. The data analysis was done on SPSS software version 21.*

Results: *The results indicates that significant statistical association between ethnicity and anemic status (p= 0.032). The residential area and monthly income also proves to have a significant association with anemic status (p= 0.005, p= 0.001), while the religion, job status and education do not have any significant association with anemia status.*

Conclusion: *This comprehensive study offers the valuable insight for healthcare policymakers and other practitioner to tailor the intervention and to run the public health programs more effectively. By addressing the association of anemia in pregnant women and the various socioeconomic contexts, we can make various substantial steps towards improving health and wellbeing of pregnant women.*

INTRODUCTION

Anemia is a blood disorder in which the blood has a reduced ability to transport oxygen due to a lower number of red blood cells in the body. The functions of red blood cells is to deliver oxygen around the body. Anemia is the most common blood disorder, and one of the leading risk factor among pregnant women, as it can cause health problems in both mother and child. The main complications of anemia in pregnant women includes bleeding, shock,

congenital disorders, abortions, premature birth and the fetus death etc. [1].

Factors such as knowledge deficit, illiteracy, low socio-economic status, poverty, socio-cultural issues, malnutrition and low intake of iron supplements among pregnant women are considered as a leading contributors of anemia in developing countries [2]. Worldwide the prevalence of anemia in pregnant women is 41.8% as per World Health Organization (WHO) findings. The maternal deaths due to anemia in developing countries were found to be 40%, reported by WHO [3].The research study revealed that demographic characteristics were significantly associated with the knowledge of a pregnant women [4].

The incidence of anemia in pregnant women were found to be higher in low socio-economic families [5]. Additionally the study findings showed that significant association was found between anemia and the age group of pregnant women, the cases of anemia were reported more in 20 to 35 years age group [6].Furthermore different category of anemia cases were present in 89.68% of the study participants, the highest haemoglobin level was detected in 1st trimester individuals, statistical significant difference was identified between nuclear and joint families in terms of mean haemoglobin levels [7]. Furthermore the research study confirmed the relationship between knowledge and the prevalence of anemia, the pregnant women with less knowledge were on higher risk of suffering from anemia in pregnancy [8].

The results of quantitative cross-sectional study of Oman showed that 60% of pregnant women had poor knowledge about the signs and symptoms of anemia. The knowledge regarding the nutritional iron sources were also insufficient, less than 40% of women knew about the importance of green leafy vegetables and eating red meat, fish, and poultry.34.9% of pregnant women believed that taking iron supplements with orange juice increase its absorption. Furthermore, the data showed that majority of participants had poor knowledge in terms of routine health visits and importance of screening and diagnosis within healthcare settings [9].

Approximately 44.9% of women had good knowledge of anemia and 52.7% of the women know that anemia is a decline in the hemoglobin levels in the blood. More than half respondents accepted that acute or chronic blood loss as a main risk factor of anemia. Majority of the pregnant women believed that intake of iron and folic acid tablets are helpful in prevention of anemia and 25.1%) participants answered that intake of coffee, tea and milk with meals and instantly after meal decreases iron absorption in the body [10].

A randomized control trial was conducted in Saudi Arabia, the study focused on the benefits of health education program on pregnant women's knowledge about anemia, the results of the study showed that significant knowledge score had increased in the interventional group who received health education compared to those in control group. The study also revealed that higher educational levels were identified as a major factors that affected compliance with health education program [11]. Additionally study findings showed that pregnant women who were overweight or obese were at higher risk for anemia, approximately 78% pregnant women from low socio-economic status were found to be anemic. The significant association was identified between malarial infections during pregnancy and anemia [12].

Furthermore the research study revealed that pregnant women who visited for antenatal care (ANC) more than four times were significantly associated with adherence to iron-folic acid supplementation [13].The results of meta-analysis showed that majority of anemia cases were recorded in Punjab province, higher prevalence of anemia were reported in the second trimester of pregnancy [14].

The objectives of a study are to find out the association of anemia with socioeconomic status and assess knowledge of anemia in pregnant women at Outpatient Department (OPD) of the Gynecology Department, Liaquat University Hospital Jamshoro.

METHODS

The research study design was cross-sectional. The chose design was used to assess the knowledge of anemia and its association with socioeconomic status in pregnant woman. The current study was conducted at Liaquat University Hospital Jamshoro. The study population was the pregnant women who were visiting the Outpatient Department (OPD) of

the Gynecology Department at LUMHS. The sample was selected using purposive sampling method. The calculated sample size was 335 using the Open Epi software. The sample size was calculated based on a study, awareness regarding anemia in antenatal women attending tertiary care hospitals in South India [15]. The calculation considered a 95% confidence interval and a margin of error of 5%. The study was conducted from January 2023 to July 2023.Inclusion criteria are who were seeking antenatal care services at the Outpatient Department (OPD) of Liaquat University Hospital and agreed to participate in the study. Exclusion criteria are pregnant women who had a history of bleeding, hepatitis and currently undergoing any medical treatment. All the participants filled out the consent form and were fully aware of the research objectives. Study approval was taken from the research committee of DOW university with reference number (DUHS/DIONAM/2023/18-22.Dated:18-01-2023).The data collection permission was obtained from the Medical and Nursing superintendent of LUMHS with reference number (LUH/Estt-J/94.Dated:24-01-2023).The data collection was done through a validated questionnaire comprised of socio-demographic information and components of knowledge, attitude of anemia among pregnant women [16]. Study parameters were socio-demographic characteristics, knowledge and attitude about anemia, eating and nutrition, infection/disease/disorder related information. The data analysis was done on SPSS version 21. Descriptive statistics were displayed using frequency tables, mean, standard deviation and percentages. Statistical tests such as independent t-test and ANOVA were used to assess relationship among dependent and independent variables.

individuals. The mean age of the participants was 26.69 with a standard deviation of 6.05. The survey respondents' marital status varies, with the largest group being married individuals (97.91%),a smaller proportion were divorced (0.29%), widowed (0.60%), or separated (1.20%).The ethnic composition includes Sindhi (60.90%), Pathan (9.55%), Balochi (11.34%), Punjabi (12.83%), and individuals from other ethnic backgrounds (5.38%).In terms of religion, the majority of respondents were Muslim (86.57%), followed by Christians (5.97%), Hindus (7.46%), and a very small number who identify with other religions (0%).

The education levels of the surveyed individuals vary. A significant portion of respondents are unable to read and write (29.55%) or can only read and write (13.43%). Others have completed primary education 1-4th grade (11.94%), secondary education 5-8th grade (22.68%), or education up to the 9-12th grade (19.40%). There are also individuals with certificates (1.20%) and diplomas or higher qualifications (1.80%). The employment status of the surveyed population was diverse. A small percentage were government servants (5.07%), private jobs servants were (7.46%). There are also respondents engaged in farming (4.76%), but the most significant group is comprised of housewives (77.31%).A smaller percentage are jobless (5.38%).

The survey reveals that (44.77%) of the respondents live in urban areas, while 55.23% reside in rural areas. The average monthly income among the respondents was 29,000 PKR per month, with a standard deviation of 3,500. The majority identifies as wives (86.65%) in relation to the house leader, others include daughters (5.97%), and individuals with different roles (5.38%).The average family size was 6 members, with a standard deviation of 2.74.

RESULTS

The table 1 provides an overview of socio-demographic characteristics among a sample of 335

Table 1 (Demographic characteristics)

Variable	Frequency (N)	%
Age (Mean $\pm$ SD)	26.69$\pm$6.05	-
Marital Status		
Married	328	97.91 %
Divorced	1	0.29%
Widowed	2	0.60%

Separated	4	1.20 %
Ethnicity		
Sindhi	204	60.90%
Pathan	32	9.55%
Balochi	38	11.34%
Punjabi	43	12.83%
Others	18	5.38%
Religion		
Muslim	290	86.57%
Christian	20	5.97%
Hindu	25	7.46%
Others	0	0%
Education Status		
Unable to read and write	99	29.55%
Read and write only	45	13.43%
1-4th grade	40	11.94%
5-8th grade	76	22.68%
9-12th grade	65	19.40%
Certificate	4	1.20%
Diploma and above	6	1.80%
Job Status		
Govt. Servant	17	5.07%
Private Job	25	7.46%
Farmer	16	4.76%
House wife	259	77.31%
Jobless	18	5.38%
Residential Area		
Urban	150	44.77%
Rural	185	55.23%
Monthly Income		~
(Average)	29000±3.50	
Relationship to the house leader		
Wife	297	88.65%
Daughter	20	5.97%
Other	18	5.38%
Family Size	6.31±2.74	~

The results of table 2 showed that majority of respondents (94.02%) were aware of anemia. Among those who were aware of anemia, the primary sources of their knowledge were health professionals (83.88%), followed by family (7.46%), mass media (2.38%), neighbors (2.08%), and other sources (1.20%). An overwhelming majority (98.50%) believed that anemia during pregnancy is preventable. A significant percentage (99.10%) of respondents acknowledged that pregnancy can result in anemia. The majority (97.01%) believed that anemia can be treated. All respondents (100%) expressed their willingness to take medicine if they were diagnosed with anemia, indicating a proactive approach to treatment.

A substantial number of participants (97.01%) had considered the possibility of developing anemia during their lives. A high percentage (98.80%) expressed their willingness to accept nutritional advice from health professionals, demonstrating a positive attitude towards healthcare guidance. The majority (98.20%) believed that birth spacing can

minimize the chances of developing anemia. When becoming pregnant, a significant percentage (97.91%) reported changing their eating habits. These adaptations included increasing the amount of food (97.90%), cutting the amount of food (1.20%), changing the type of food (0.60%), and other unspecified changes (0.30%).

Table 2 Knowledge about anemia of study population

Variable	Frequency	Percentages
Awareness of Anemia:		
Yes	315	94.02 %
No	20	5.98 %
Sources of Anemia Knowledge		
Health professionals	281	83.88 %
Mass media	8	2.38 %
Family	25	7.46 %
Neighbors	7	2.08 %
Other	14	4.20 %
Preventability of Anemia in Pregnancy		
Yes	330	98.50 %
No	5	1.50 %
Pregnancy and Anemia		
Yes	332	99.10 %
No	3	0.90 %
Belief in Treatability		
Yes	325	97.01 %
No	10	2.99 %
Willingness to take Medicine		
Yes	335	100%
No	0	0 %
Consideration of Developing Anemia		
Yes	325	97.01 %
No	10	2.99 %
Acceptance of Health Professional's Nutritional Advice		
Yes	331	98.80 %
No	4	1.20 %
Birth Spacing and Anemia Prevention		
Yes	329	98.20 %
No	6	1.80 %
Changes in Eating Habits during Pregnancy		
Yes	328	97.91 %
No	7	2.09 %
Increasing Amount of Food during Pregnancy		
Increasing the amount of food	328	97.90 %
Cut the amount of food	4	1.20 %
Changing the type of food	2	0.60 %
Other	1	0.30 %

The results of table 3 showed a significant association between ethnicity and anemic status (p=0.032). Similarly residential area and monthly income had a significant association with anemia (p=0.005, p=0001). On the other hand socio-economic variables such as religion, education status

and job status were not significantly associated with anemia.

Table 3: Association of socioeconomic status with anemic patients

Variables	p-value
Ethnicity-Anemic Status	0.032*
Religion -Anemic Status	0.363
Education Status -Anemic Status	0.513
Job Status -Anemic Status	0.322
Residential Area -Anemic Status	0.005*
Monthly Income-Anemic Status	0.001*

DISCUSSION

The main purpose of the study was to evaluate the Knowledge of Anemia and its association with socioeconomic status in pregnant woman. Our study revealed that 94.02% of the participants were aware of anemia and the main sources of anemia knowledge was provided by healthcare providers. Similar results were identified in the study conducted in Nigeria, reported majority of participants were aware of anemia, approximately 90% participants have an average and good knowledge of anemia in pregnancy [17].

Research study has shown that mothers who did not get enough knowledge about pregnancy can experience problems during pregnancy. Women who were experience their first pregnancy are more concern about their nutritional diet during pregnancy period [18].

The current study revealed that majority of individuals were already aware that pregnancy is one of the causes of anemia but it is also preventable and can be treated, which have the contradiction with the survey conducted in Ghana which states that anemia management strategies were lower in pregnant women [19]. Our result and previous finding found to be similar, and proved that awareness of anemia among the pregnant women is high but the prevention strategies should also be more modified and improved.

While coming to the socioeconomic status with anemic patients, our findings have showed that monthly income was the most significant socio-economic factor that has an impact on anemia. Similar findings were reported in the earlier study, income levels had a strong relationship with anemic status, and low income was considered as a major obstacle in prevention of anemia. The level of income directly link with buying power of an individual, higher comic levels provide better opportunities to purchased food necessary to overcome the anemic condition [20].

This study revealed that religion had no impact on anemic status, while the research study conducted in Nepal reported religion was correlated with anemia [21]. In current study ethnicity was found to be associated with anemia. Similar results were also showed in Nepal's research study, significant relationship was found between ethnicity and anemia [21].

The findings of this study showed that higher cases of anemia were reported in the women who lived in the rural areas, therefore significant relationship was found between anemia and residential area. The results of other study conducted in Iraq contradict with the findings of our study, as no impact of residential area was identified on anemic status [22].

The job status of the women was not significantly associated with the anemia in current study. The conflicting results found in the study where statistically significant association of job status was found with anemia [16]. Our study findings revealed that education status didn't have any impact on anemia. In contrast the other previous study showed a significant association between education status and anemia [23].

The average family size of current study participants was 6 members. Similarly the cross sectional multinational study showed that the anemia was highly prevalent among women who had six or more household sizes [24].

The respondents of current study believed that birth spacing can prevent anemia. The previous studies indicated that short birth spacing increased the risk of anemia, Furthermore, some research studies

confirmed that long birth spacing increased risk of anemia in pregnant women. [24]

CONCLUSION

As a whole, this thorough study offers a varied view of anemia and its incidence among pregnant women. Key socioeconomical variables such as the ethnicity, the residential areas, monthly income of family, religion have been evaluated and found that Sindhi ethnicity, rural residence and lower monthly income to be significant determinants of anemia in the population. While the other socioeconomical factors such as religion, job and education are not associated with anemia. This indicates the complex interplay of socio-demographic factors in various health outcomes. Overall, this study provides a deep insight for various policymakers to improve the health programs in a more efficient way.

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