

Original article

Evaluation of Pregnant Women's Knowledge toward Prenatal Ultrasound Diagnosis in Alafia Hospital, Hun City

Yosef Madee*¹, Khadeejah Alhuweenit¹, Aybaba Hançerlioğulları²¹Department of Radiology, Faculty of Medical Technology, Aljufra University, Libya²Department of Physics, Arts and Sciences College, Kastamonu University, TurkeyEmail. youseff77@yahoo.com

Abstract

Ultrasound is harmless and non-invasive, using high-frequency sound waves to display fetal images. Antenatal care plays an essential role in developing the embryo and the health of mothers expecting. To evaluate pregnant women's knowledge of obstetric ultrasound in Alafia Hospital, Hun City. A cross-sectional study through several questionnaires covered 144 pregnant women attending prenatal consultation in Alafia Hospital, Hun city, from January to March 2026, and by using Windows Excel, data analyzed. The results covered 144 pregnant women the youngest age of participant's 18 and the oldest 53 years. The mean participant's age were 30.5 years. The result appeared majority of participant's are good understanding of prenatal ultrasound. 42.63% (61) participants were aged between 20 and 29 years. For the education level, about 51.38% (74) of participants have a university level. Most of the participants agree that the ultrasound evaluates fetal growth and is important in healthcare during pregnancy. The majority of pregnant women believe that obstetric ultrasound is safe and have good knowledge regarding ultrasound. The main sources of information for pregnant women about prenatal ultrasound are the referring doctor. Few participants believed that ultrasound uses ionizing radiation, and more than 70 % have no idea if ultrasound imaging uses ionizing radiation.

Keywords. Prenatal Ultrasound, Pregnant Women, Alafia Hospital.

Introduction

Radiation is divided into non-ionizing and ionizing radiation. Ionizing radiation includes X and gamma rays, alpha and beta particles, which can affect and ionize matter. Non-ionizing radiation, such as ultrasonography and magnetic resonance imaging, appears as sound waves and magnetic fields [1,2]. Ultrasound is a safe, portable device that does not use ionizing radiation. Useful for diagnoses and produces real-time imaging. According to the World Health Organization (WHO), all pregnant women before 24 weeks of pregnancy should have one Ultrasound scan to estimate placenta position, determine fetal abnormality, assess gestational age, and detect multiple or single pregnancies [3]. Several studies show that about knowledge of obstetric ultrasonography. In 2024, Alghamdi et al reported in Saudi Arabia, 531 pregnant women, the majority of them had a good understanding of Prenatal Ultrasound and estimated placental location (81.7%), fetal growth (82.5%), fetal morphology (65%), amniotic fluid volume (67%), baby sex (89%), and delivery date (79%) [4]. According to Alshalahi et al, (88.9%) of participants consider 3D and 4D ultrasound important for Prenatal Ultrasound, and (57.2%) are believed detection of all diseases. Most information sources of pregnant women are sufficient, and respondents (87.6%) [5].

Methods

The study covered 144 pregnant women in Hun city, and through several questionnaires, attending prenatal consultation started from January to March 2026, and the data collected by researchers and through interviews with participants were analyzed using Windows Excel analysis. The pregnant participates ages started from 18 years and above. Every participant is permitted to participate only one time.

Results and Discussion

The questionnaires were distributed to 144 pregnant women, and response answered 100%. The range of ages of participants was from 18 to 53, with a mean age of 30.5 years. The respondent's ages were 61y, 50y, 23y, 06y, and 04y covered between (20-29) y, (30 – 39) y, (40 – 49) y, and (50 and over), respectively. This agrees with the study conducted by Dongmo et al at Limbe and Buea regional hospitals, where the mean age was 28.59 years. About 61 % of participant's were age between 20 and 29 years. 62 (43.06%) of participants were prim gravida, and 82 (56.94%) were second and

third gravida. 100 (69.44 %) participants used ultrasound before their first pregnancy, and 44 (30.56 %) did not use. 79 (54.86 %) participants are employed, 58 (40.27 %) are housewives, as shown in (Table 1).

Table 1. Sociodemographic and obstetric data distribution

Characteristics	No. (%)
Age group (in years)	
Less than 20	04 (2.77)
20-29	61(42.36)
30-39	50(34.72)
40-49	23(15.97)
50 +	06(4.66)
Education	
Primary	30 (20.8)
Secondary	40 (27.77)
University	74 (51.38)
Employment	
Housewife	58 (40.27)
Student	02 (1.38)
Freelance	04 (2.77)
Employed	79 (54.86)
Retired	01 (0.69)
Trimester Stage	
Don not Know	20 (13.89)
First	24 (16.67)
Second	47 (32.64)
Third	53 (36.81)
Using US before this pregnancy	
Yes	100 (69.44)
No	44 (30.56)
First pregnancy	
Yes	62 (43.06)
No	82 (56.94)

The reported component of knowledge on prenatal ultrasound by participants was permitted to confirm the pregnancy with about 115 (79.86 %) participants, where the second reported ultrasound is important in healthcare during pregnancy. Estimating the expected date of delivery by ultrasound was third 109 (75.69 %). More than three-quarters of participants agreed that obstetric ultrasound is safe, 92 (63.88 %); however, some of the participants disagreed that ultrasound imaging causes congenital malformations. 16 (11.11%). About the diagnostic by ultrasound uses ionizing radiation 18 (12.5 %), 49 (34.03 %) answered not use, and 77 (53.47 %) had no idea about that. shown in (Table 2).

Table 2. Knowledge Level regarding ultrasound

Knowledge Items	Responses		
	Yes	No	Do not know
Can the US evaluate fetal growth?	115 (79.86)	10 (6.94)	19 (13.19)
Can the US evaluate amniotic fluid volume?	85 (59.03)	14 (9.72)	45 (31.25)
Can the US evaluate fetal morphology?	97 (67.36)	29 (20.14)	18 (12.5)
Can the US evaluate the placental site?	108 (75)	13 (9.03)	23 (15.97)
Can the US diagnose structural abnormalities?	82 (56.94)	23 (15.97)	39 (27.08)
Can the US diagnose chromosomal and genetic abnormalities?	76 (52.77)	21 (14.58)	47 (32.64)

Can the US predict the sex of a baby?	107 (74.31)	17 (11.81)	20 (13.88)
Can the US estimate the expected date of delivery?	109 (75.69)	16 (11.11)	19 (13.19)
Is the US safe for moms and fetuses?	92 (63.88)	16 (11.11)	36 (25)
Does diagnostic US use ionizing radiation?	18 (12.5)	49 (34.03)	77 (53.47)
Do you think the US is important in healthcare during pregnancy?	115 (79.86)	09 (6.25)	20 (13.88)

(Table 3) shows the knowledge of participants and sources of information about ultrasound and pregnancy appeared good 51 (35.42 %), not good 38 (26.39 %), enough 29 (20.14 %), excellent 26 (18.06 %). More than 70 % of participants' responses about ultrasound examination are comfortable diagnoses, imaging 123 (85.42 %). The primary source of information about ultrasound examination of participants is referring doctor 66 (45.83 %), followed by the second source is Family and Friends 47 (32.64 %), then Internet and social media 29 (20.14 %) finely Radiology clinical staff 02 (01.39 %).

Table 3. Evaluation of patients' information about ultrasound

Items	No. (%)
How do you evaluate your knowledge about the US and pregnancy?	
Not enough	38 (26.39)
Enough	29 (20.14)
Good	51 (35.42)
Excellent	26 (18.06)
What do you think about the US examination?	
Painful	09 (6.25)
Not comfortable	12 (8.33)
Comfortable	123 (85.42)
Where did you get the majority of information about the US examination?	
Family and Friends	47 (32.64)
Internet and social media	29 (20.14)
Referring doctor	66 (45.83)
Radiology clinical staff	02 (01.39)

Conclusion

In this study, found that most pregnant women in Hun city agree that imaging by ultrasound is useful and essential for antenatal ultrasound. For pregnant women's information sources regarding obstetric ultrasound, health personnel play an important role in controlling the education level and providing good knowledge about obstetric ultrasound.

References

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