ORIGINAL RESEARCH PAPER
Volume - 13 | Issue - 06 | June - 2024 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

KNOWLEDGE, ATTITUDE, AND PRACTICE OF JAUNDICE: A CROSS-SECTIONAL STUDY IN GENERAL POPULATION IN DELHI/NCR

Clinical Research

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ABSTRACT

Background: Jaundice is a prevalent and preventable condition in all age group and is significantly associated with developing countries' morbidity and mortality. This study aimed to measure the awareness of adults in New Delhi of their knowledge, attitude, and practice regarding Jaundice. **Methods:** A cross-sectional descriptive study was conducted to measure the awareness of Jaundice problems in New Delhi during January to june ,2023. A self-administered questionnaire evaluating the knowledge, attitude, and behaviors of a sample of adult populations concerning this problem was employed for the study. Data were analyzed with Statistical Package for Social Science software. **Results:** The study was conducted among 336 adults, including both genders. Among them, 71.6% of partici-pants were college students, single (69%), unemployed 79.7%, and of low-income level (57.3%). The majority of the participants did not have a history of Jaundice (63.9%) and the primary source of their knowledge was friends and relatives (26.9%). The participants' attitude was positive toward seeking medical assistance for the problem. Further 27.3% of participants took their children to the hospital. However, we noticed a misconception about the benefits of sunlight treatment among adults as 36.7% of participants agreed with sunlight efficacy in preventing Jaundice. **Conclusion:** This study reported a moderate knowledge, attitude, and practice regarding Jaundice. For this reason, we recommended developing educational programs and campaigns to enhance the level of awareness of Jaundice.

KEYWORDS

Jaundice, attitude, knowledge, bilirubin, Neonatal jaundice.

INTRODUCTION

Jaundice is a relatively frequent and treatable illness in all age group that has a solid correlation to morbidity and death in underdeveloped nations. As a result of elevated bilirubin levels in the blood, NNJ is a disease that causes newborn infants' skin and sclera to turn yellow [1,2]. Approximately 60%-80% of newborns are affected [3]. In numerous earlier studies, it was found that perinatal (such as birth trauma or infections), maternal (such as Rh or Australian Aborigine incompatibility), infant (such as immaturity or polycythemia), and genetic (such as Crigler-or Najjar's Gilbert's syndrome) factors all contributed to the development of pathological jaundice [4]. Depending on the source of jaundice and the bilirubin levels, NNJ can accompany many symptoms. Yellow skin discolorations, mucous membranes, and eye whites are signs of newborn jaundice, as are pale feces, poor feeding, lethargy, and convulsions. Encephalopathy, also known as Kernicterus, is a potential side effect of NNJ that may result in neurological impairments and early death.[1] We must be fully aware of the early signs of jaundice to manage the condition effectively and avoid negative consequences for the newborn [2]. Several previous studies focused on pregnant women and mothers who visited hospitals for various medical conditions, antenatal care, or the management of NNJ or other clinical conditions; this may have limited the representation of the general population's knowledge, attitudes, and practice regarding NNJ. The samples for the study were gathered in June [5,6,7]. With the increase in cases of NNJ, this study aims to measure the awareness of adults in New Delhi of their knowledge, attitude, and practice regarding this health problem using a cross-sectional survey study and statistical analysis.

Subjects and Methods

A cross-sectional descriptive study was conducted to measure public awareness of Jaundice during the period from January to June, 2023. A self-administered questionnaire evaluating the knowledge, attitude, and behaviors of a sample of adult populations concerning this problem was employed for the study. In this study, adults were considered as individuals at least 18 years old. The questionnaire regarding NNJ included: etiology, clinical picture, complications, and prevention. Questions were either self-formulated or had modified questions from previous survey studies [8]. Before releasing the finalized questionnaire, a pilot study was conducted randomly on a sample of 30 respondents to fill out the study questionnaire and make the required changes.

A google form validated the final modified form of the survey. It was 0.65 and considered an adequate score showing the internal consistency and reliability of the questionnaire. The survey was initially written in English. The sample size of the population was calculated from an online calculator [9]. The link to the questionnaire was sent by various forms of social media to the participants to fill out the survey online. The information was gathered through an online survey made in Google Forms, a feature of Google Docs. The study includes each of the 336 survey participants. The questionnaire had two sections. The first one collected anonymous information about the participants',gender,age,educational attainment, and socio economic status. The second one consisted of the following domains: knowledge, attitude, and practice to measure the awareness of Jaundice.

Only those who obtained voluntary informed consent were enrolled in the study. Data were analyzed with Statistical Package for Social Science (IBM-SPSS for Windows, Version 25.0; NY). Frequency tables and the percentage for the qualitative variables were used in the study.

RESULTS

Table 1 shows the adults' socio demographic characteristics, and most respondents were in the age group of 20-29 years old, with almost two-thirds being females. Most of the sample population were single Saudi citizens. Regarding their residence, most of them lived in cities and were from eastern and western areas. It also showed the statistics collected that most respondents had university or postgraduate education, and most were students. Financially, most respondents had an income of less than 50,000 .

Table 1. Sociodemographic Data.

Age	N	%
20>	61	18.20
20-29	192	57.30
30-39	23	6.90
≥40	59	17.60
Sex		
Male	122	36.40
Female	213	63.60
Marital status		
Single	231	69.00
Married	104	31.00
Nationality		
Saudi Arabia	325	97.00

Other	10	3.00
Region		
Central region	65	19.40
Eastern region	147	43.90
Western region	99	29.60
Southern region	18	5.40
Northern region	6	1.80
Living		
City	304	90.70
Village	31	9.30
Educational level		
Elementary	0	0.00
Intermediate	2	0.60
Highschool	76	22.70
University	240	71.60
Postgraduate	17	5.10
Job		
Student	190	56.70
Employee	68	20.30
Others	77	23.00
Income		
<5,000	192	57.30
50,000-100,000	61	18.20
>100,000	82	24.50

For the history of jaundice, parity status, and information about Jaundice, Table 2 showed that most of the respondents did not have an account of jaundice. A quarter of the respondents had children, and almost half had one child. The highest percentage of the respondents had no source of information about Jaundice, and those who had information got it from their relatives or from health care professionals. Most respondents knew about Jaundice, but none of their children had NNJ. Regarding the basis of education, more than half of the respondents reported that the best way to educate people about NNJ is through social media.

Regarding the definition, etiology, dangerous signs, and complications of NNJ shown in Table 3, most respondents did not know whether sunlight is a way of treatment or not, while almost a third of the respondents thought it was beneficial. Concerning the causes of NNJ, more than half of the respondents did not know the reasons for NNJ, whereas half of the respondents did not know the warning signs of NNJ. For the complications of NNJ, the most common complications stated by participants were delayed growth and death (27.5% and 20.7%), respectively.

Table 4 displays the attitude and practices of participants regarding NNJ treatment. About 27.3% of the participants were inclined toward hospitalization, while 24% had no answer. It also showed that 49.6% of participants thought that lack of good health services was the biggest obstacle in treating NNJ, and even 31% did not have a form of health insurance. Also, more than half of the respondents did not know how to prevent Jaundice, while 45% confirmed the importance of antenatal care.

DISCUSSION

Given its high prevalence, Jaundice is a significant health problem that necessitates adequate knowledge and care- seeking practices among the general population, not just mothers, to achieve adequate treatment and prevent complications. Therefore, this study was designed to measure the awareness of the New Delhi population regarding this medical problem. This study was conducted among normal populations, including both genders, in contrast with other studies conducted only among females, whether having children or not. People who live in cities have easier access to social media, which may explain the high responses to our online survey distributed through media platforms. The majority of our respondents had a low-income level (57.3%). Also, they were young college students, single, and unemployed, which may explain our participants' low-income levels. They showed a moderate level of knowledge regarding NNJ. A recent study in Egypt found that a high maternal educational level is associated with a better outcome for NNJ [5].

The majority of the participants did not have a history of NNJ, with a percentage of 63.9% in comparison with 10.7% of the respondents who had a history of NNJ, and that is consistent with a study that was done in Iran, 86.5% of their participants had no history of NNJ [1]. Also, 64.5% of our study participants did not have children, and 25.1% had at least one child, which explains why they could not achieve a high knowledge of NNJ. The level of education in our study population is high, the majority were college students (71%), but there was a moderate level of knowledge. This could be explained that most of them know about the definition of NNJ but have low knowledge about the details of the subject, such as the causes and complications. Previous findings are in line with our results [5]. They reported that their participants had moderate knowledge regarding NNJ. These similarities in results may be explained by the fact that their participants were mothers with low educational attainment. On the other hand, most of our participants were young college students. We cannot assume that all college students have sufficient information about medical conditions, so a study must be conducted to assess the knowledge of NNJ among non-medical students. Knowing about the general outline of the problem, like the definition, is not enough to protect from this problem. Understanding all aspects of the problem, warning signs, complications, etc., is the proper meaning of good knowledge. Another study conducted in Ghana revealed that the maternity level of awareness for NNJ was low. Their participants also had low educational attainment [6]. The possible explanation for moderate knowledge in our results could be due to a few of our respondents (20.3%) being employees. A previous study proved the relationship between working status and a good level of knowledge, and that could explain this finding [5]. The main source of knowledge was from friends and relatives (26.9%), followed by healthcare workers (19.7%). This is consistent with Amegan-Aho et al. [6] study, which revealed that the participants' relatives and friends and mass media were the most common source of knowledge. Contrary to our results, Goodman, Kehinde et al. [10] revealed that health workers were the most common source of information (42.6%). Relatives and friends are our study's commonest source of knowledge, and improving their knowledge through education is mandatory. For this, we tend to emphasize the importance of adding medical topics like NNJ to the college course of study. We additionally encourage doctors and medical students to share their information through family counseling, medical events, social media, or perhaps design an internet site so that we will share such life-threatening conditions with web visitors. Among our participants, the foremost common causes of NNJ reported were prematureness (14.8%), dehydration (9.9%), and breastfeeding (7.2%). In contrast to a study conducted in Lagos, Nigeria, 47% of respondents selected infection as the main reason for NNJ [10]. Another study conducted in Jazan, KSA reported that the foremost common causes among their participants were hematolysis (79.8%), exaggerated ultrasound examination throughout pregnancy (55.6%), and prematureness (54.4%) [2]. The information regarding the complication among respondents varied. Most of the participants selected “delayed growth” with a percentage of 27.5% followed by “death” (20.7%). The results from the study in the Republic of Ghana were not consistent with our results which disclosed that the foremost common complication among their participants was “death” [6]. In the Saudi study, most respondents selected backwardness (29.4%) [2]. Many misconceptions were reported in exciting studies regarding the causes and treatment of NNJ. For instance, a study conducted among Iranian women revealed that approximately one-third of the participants thought NNJ might be associated with feeding the newborn with colostrum milk. The fact is that breastfeeding plays a crucial role in increasing GI motility leading to an increase in bilirubin metabolism and improving this condition [1]. To avoid the same misconception, we should encourage mothers to breastfeed their children in addition to helping mothers to correct this misconception. Another misconception about prevention was reported in a Malaysian study. They found that mothers used sunlight exposure to prevent NNJ [11]. Whereas in our study, 18.30% of the participants exposed their children to sunlight, and 36.70% of them agreed with the efficacy of sunbath. The efficacy of sunlight exposure was mentioned in a previous study [12]. Low-income countries more widely use sunbathing than high-income countries. The mechanism of sunlight in preventing or treating NNJ is breaking down the bilirubin and converting it into water-soluble isomers, but at the same time, sunlight can harm the child if used without caution; it might cause hyperthermia, sunburn, and it might cause neoplasia of the skin. The participants' attitude was positive toward seeking medical assistance for the problem; 27.3% of our participants took their children to the hospital. It could be encouraged by more education on the problem, keeping in mind our sample population is adults of both sexes. These findings seem to be consistent but lower than with other studies done on mothers in Nigeria, which showed that the majority (90.4%) of

respondents were seeking medical care while 58% of the participants were using sunlight exposure [10] and that was in line with a study done in Iraq among women [12]. Our results differ from previously published studies. For example, a study by Amegan-Aho et al. [6] in Ghana showed that mothers expose their children to sunlight before seeking medical care. It might be related to mothers' poor knowledge of treatment. Another possible explanation for this is that 44.4% of mothers did not know the warning signs. Maybe they thought jaundice was not dangerous, and that was enough reason to delay medical treatment. The participants use numerous ways to stop NNJ. About 41% of them said that prenatal care and regular follow-up could protect their children. Finally, we asked them about the obstacles that stop them from obtaining treatment. The "lack of excellent health services" was the foremost common obstacle. Our findings are not consistent with previous studies. For example, a recent study conducted in Egypt showed that "long distance and lack of transportation and high costs" were the foremost common obstacles. It can be concluded from this study that there is a moderate knowledge, attitude, and practice relating to NNJ in our study, so it is suggested to develop academic programs and campaigns to enhance the level of awareness of NNJ.

Table 2. History Of Jaundice, Parity Status, And Having Information About Neonatal Jaundice (NNJ).

History of jaundice	N	%
I don't know	85	25.40
No	214	63.90
Yes	36	10.70
Have children		
Don't apply	35	10.40
No	216	64.50
Yes	84	25.10
Number of children		
No children	69	31.70
1 child	112	51.40
2 children	24	11.00
>2 children	13	6.00
Have information about NNJ		
No	244	72.80
Yes	91	27.20
Source of knowledge		
Healthcare worker	66	19.70
Relatives and friends	90	26.90
Social network services	18	5.40
No source of knowledge	145	43.30
Doctor	16	4.80
Timing of knowledge		
After the child had NNJ	40	12.00
Before the child had NNJ	8	2.40
I have knowledge and my child did not have NNJ	118	35.30
I have no knowledge	168	50.30

Table 3. Definition, Etiology, Dangerous Signs, And Complications Of Neonatal Jaundice

Yellow discoloration of skin	39	11.60%
Yellow discoloration sclera	195	58.20%
Color change of urine and stools	2	0.60%
Don't know	99	29.60%
Etiology		
Breastfeeding	24	7.20%
Infection	15	4.50%
Dehydration	33	9.90%
Preterm	49	14.80%
Blood incompatibility	22	6.60%
Hemolysis	10	3.00%
Diabetic mother	2	0.60%
Don't know	177	53.30%
Dangerous signs of NNJ		
Refusal of feeding	42	9.90%
High fever	69	16.30%
No sign	28	6.60%
High pitched crying	20	4.70%
Convulsion	39	9.20%
Backward arching of the neck and body	10	2.40%
I don't know	215	50.80%
Sunlight treatment		
I don't know	178	53.10%
Neither beneficial nor harmful	25	7.50%
Beneficial	123	36.70%
Harmful	9	2.70%
Complication		
Delayed growth	76	27.50%
Epilepsy	29	10.50%
Hearing vision loss	34	12.30%
Physical disability	31	11.20%
Mental retardation	49	17.80%
Death	57	20.70%

Table 4. Attitude And Practice Of Neonatal Jaundice (NNJ).

Breastfeeding	34	7.00%
Sun exposure	89	18.30%
Neon light exposure	60	12.30%
Home light exposure	30	6.20%
Herbal medicine	4	0.80%
Hospital treatment	133	27.30%
Antibiotics	9	1.80%
Replacing breastfeeding with artificial breastfeeding	11	2.30%
No answer	117	24.00%
What are the obstacles to getting treatment?	N	%
Lack of health insurance	76	31.40
Far distance from treatment places	31	12.80
Lack of transportation	15	6.20
Lack of good health services to treat these cases	120	49.60
How to prevent NNJ?	N	%
Prenatal screening and follow-up	35	9.50
Infection control	152	41.40
Don't know	180	49

Conflict Of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

Funding

None

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