IJPSR (2023), Volume 14, Issue 5 (Research Article)

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 25 August 2022; received in revised form, 09 April 2023; accepted, 17 April 2023; published 01 May 2023

A COMPARATIVE STUDY OF KNOWLEDGE, ATTITUDE AND PERCEPTION OF JAUNDICE AMONG PARAMEDICAL AND NON-PARAMEDICAL STUDENTS

A. Srinivasan *, A. Subhashini, D. Monitta Robinson, Sheeba S. Koshy and S. Yeshwanth

JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy, Ethirmedu, Komarapalyam, Namakkal - 638183, Tamil Nadu, India.

Keywords:

Jaundice, Knowledge, Attitude, perception, Paramedical students, Non-paramedical students

Correspondence to Author:
Mr. A Srinivasan, M. Pharm

Associate Professor,
JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy, Ethirmedu, Komarapalyam, Namakkal - 638183, Tamil Nadu, India.

E-mail: a.srinivasanmpharm@gmail.com

ABSTRACT: Jaundice is defined as the yellowing of the skin and whites of the eyes which are caused by a buildup of a substance called bilirubin in the blood and tissues in the body. Bilirubin is a yellowish pigment formed by the breakdown of heme, which occurs largely in hemoglobin and red blood cells. The purpose of this study was to analyze and compare the knowledge, attitude, and perception of jaundice among paramedical and non-paramedical students**.** A Comparative cross-sectional study was conducted in South India for a period of 6 months from May 2021 to October 2021. The Knowledge, Attitude, and perception questionnaire was used to obtain respondents' information. The data collected were tabulated, analyzed, and interpreted using standard statistical tools. The statistical procedure was undertaken with the help of the statistical package Instat and Prism version 6.0. The comparison was done by the Chi-square test. A total of 818 students were selected and divided into two groups such as 409 paramedical students and 409 non-paramedical students. This study concluded that Paramedical students had better knowledge and attitude than non-paramedical students. Many paramedical and non-paramedical students have a positive perception of jaundice, and only a few have a negative perception of jaundice. So, we recommend many awareness programs, seminars, and workshops that need to be conducted for all the students, especially non-paramedical students, to enhance their knowledge and attitude toward jaundice.

INTRODUCTION: Jaundice is the yellowing of the skin, sclera, and body fluids [1]. Jaundice is majorly caused by an increase in the amount of bilirubin in the blood. Bilirubin is a yellowish pigment formed by heme breakdown, which occurs largely in hemoglobin and red blood cells [2]. Jaundice is common in developing nations and can be life-threatening [3]. Jaundice is associated with several hepatic diseases, which are still major leading causes of death [4].

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.14(5).2511-21

This article can be accessed online on www.ijpsr.com

DOI link: https://doi.org/10.13040/IJPSR.0975-8232.14(5).2511-21

Jaundice is also known as hyperbilirubinemia, which indicates an excessive level of bilirubin that may be in the conjugated or unconjugated form. Jaundice can be caused by the liver being overloaded or damaged, too many red blood cells retiring, and the inability to transfer processed bilirubin from the liver through the biliary tract to the gut [2].

In India, the incidence of jaundice varies between 0.4 to 0.9/1,000 deliveries [5]. The incidence varies by ethnicity and geography, with East Asians and American Indians having greater rates and Africans having lower rates. The incidence of the disease is higher in those who live at high altitudes. Male infants are more likely to acquire serious neonatal jaundice. The prevalence of neonatal jaundice is 65% of term newborns in the first week develop

clinical jaundice, and 80% of preterm infants develop jaundice. Asian and mixed Asian/white infants had a higher rate of neonatal jaundice than white infants [6, 7]. Jaundice affects people of all ages and genders, but it is more common in babies and the elderly. Jaundice affects about 20% of term newborns in their first week of life due to the immaturity of the hepatic conjugation process. The causes of jaundice are increased production of bilirubin, acute inflammation of the liver, chronic liver diseases such as liver cirrhosis, liver failure, inflammation of the bile ducts, obstruction of the bile ducts, drug-induced liver damage, genetic disorders, jaundice of pregnancy, cholestasis, Gilbert's syndrome, hemolytic anemia, viral infections, biliary tract disorder, autoimmune liver disease and alcohol consumption [2, 8].

The symptoms of jaundice are yellow discoloration of the sclera in eyes, skin, and mucous membrane, pale-colored stool, dark-colored urine, generalized pruritis, abdominal pain, anemia, gastrointestinal bleeding, diarrhea, swelling of the legs and abdomen, extreme weakness, headache, fever, loss of appetite, severe constipation, nausea and vomiting [9, 10]. The diagnosis of jaundice is complete blood count, direct and indirect coomb's test, liver function test, bilirubin test, urine analysis, prothrombin time, x-ray imaging, cholescintigraphy, endoscopic retrograde cholangiopancreatography, ultrasound, compute-rized tomography scan, magnetic resonance imaging, endoscopic retrograde cholangio-pancreatography, percutaneous trans-hepatic cholangiography, endoscopic ultrasonography and liver biopsy.

The complication of jaundice is anemia, sepsis, liver failure, kidney failure, electrolyte abnormalities, chronic hepatitis, bowel obstruction, cancer, hepatic encephalopathy, comaand death [11]. The clinical presentations of jaundice emerge when the bilirubin level exceeds 34.2 µmol/L or 2 mg/dL [12].

There are three types of jaundice: hemolytic, hepatocellular, and obstructive jaundice. Hemolytic jaundice is a type of jaundice caused by hemolysis and is also known as pre-hepatic jaundice. When many red blood cells are broken down, a substantial amount of bilirubin is produced, causing hemolytic jaundice. Hepatocellular jaundice is the most common type of jaundice, also called hepatic jaundice. When bilirubin cannot exit the liver cells and is not eliminated from the body by the kidneys, it causes hepatocellular jaundice. Obstructive jaundice occurs when there is an obstruction or blockage in the bile duct, and this obstruction prevents bilirubin from leaving the liver. Gallstones, tumors, or cysts in the pancreas or bile duct are the most common causes of obstructive jaundice. Infusion of immunoglobulins is used as a primary treatment for pre-hepatic jaundice [13]. Phototherapy is considered an effective treatment of high levels of bilirubin production in pre-hepatic jaundice [14].

Metalloporphyrins are also considered a treatment possibility for pre-hepatic jaundice because these metalloporphyrins target the heme oxygenase enzyme to limit bilirubin production. Phototherapy is used for neonatal jaundice. Medical treatment with medications, intravenous fluids, antibiotics, or blood transfusions may be required. If a drug is the main cause, it must be discontinued. Phenobarbital can be used for the treatment of neonatal physiological jaundice. Abstinence from alcohol and cessation of medications contribute to liver dysfunction. Steroids are used for autoimmune hepatitis. An immunosuppressant can be used for autoimmune hepatitis. Interferon can be used for chronic hepatitis B and C. Liver transplantation can be done for fulminant hepatitis and end-stage liver failure. A low-fat diet should be given to a patient who is suffering from post-hepatic jaundice to minimize the discomfort due to fat ingestion and diarrhea.

The treatment of post hepatic or obstructive jaundice is mechanical decompression. However, the complications and other symptoms are also necessarily treated. Hydroxyzine, dexchlor-pheniramine, cholestyramine, ursodeoxycholic acid, and naltrexone are therapeutic approaches in treating and managing post-hepatic jaundice [8, 15].

The study has been conducted to compare the knowledge, attitude, and perception among paramedical and non-paramedical students about jaundice. This study is expected to help better understand the signs, causes, treatment, and prevention of jaundice.

Objectives of the Study: To assess and compare the knowledge, attitude and perception among paramedical and non-paramedical students about jaundice. To explore the common beliefs and knowledge among students about jaundice.

To know the prevalence of jaundice in their past medical history among students and to explore the management of jaundice they have taken in their past medical history.

Significance of the Study: The present study will help the readers to recognize the causes, types, signs and symptoms, treatment, diagnosis and prevention of jaundice. A community-based national cross-sectional study is recommended to the public to create awareness because when jaundice is untreated may also lead to death.

MATERIALS AND METHODS: A Comparative cross-sectional study was conducted in South India for a period of 6 months from May 2021 to October 2021. Using the Raosoft sample size calculator with a 5% margin of error, 95% confidence interval and 50% response distribution, the estimated sample size is found to be 377 from each category of students. A total of 835 students were enrolled in our study. 17 students were rejected due to incomplete data forms. Among them, 818 students were selected.

Of them, 409 were Paramedical students, which included departments of pharmacy, nursing, physiotherapy, occupational therapy, radiology and allied health science and 409 were non-paramedical students, which included arts and science and engineering. Data collection is done through online Google Forms.

The inclusion criteria include the students of paramedical and non-paramedical from South India who are above 18 years and below 30 years of age and complete data entries. The exclusion criteria include non-consenters, incomplete data entries and above the age of 30 and below the age of 18.

Study Procedure: The Knowledge, Attitude, and Perception questionnaire was taken from an article for which the corresponding author granted us copyright permission, and the questionnaire was slightly modified with the permission of the corresponding author.

Institutional Ethics Committee approved this study, JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy with reference number EC/PHARM.D /2021-07.

The first part of the questionnaire concerned the participants' socio-demographic condition. Demographic variables include age, gender, education qualification and state.

The second part of the questionnaire had 9 questions that assessed the students' knowledge about jaundice. The third part of the questionnaire had 7 questions concerned about the students' attitude toward jaundice.

The Fourth part of the questionnaire had 8 questions concerned about the students' perception of jaundice. The study is organized through an online Google form. Only one participant per survey setting was used, restricting the participants from providing more than one response.

The link which proceeds to the questionnaire is prepared and shared through various social media like WhatsApp, e-mail, telegram, etc., and the e-mail id of the participants after informing the objectives and confidentiality to the participants.

The informed consent is obtained from the individuals who marked the Yes option for the section detailing the consent. After filling the form at the end of the study, the pre-prepared patient information leaflet was distributed to the concerning e-mail id of the participants to create awareness of jaundice among students.

Statistical Analysis: The data collected were tabulated, analyzed, and interpreted using standard statistical tools. The statistical procedure was undertaken with the help of the statistical package Instat and Prism version 6.0. The Chi-square test did the comparison. The P-value less than or equal to 0.05 was fixed as the significance level.

RESULTS AND DISCUSSION: 835 students were enrolled in our study. 17 students were rejected due to incomplete data forms. Among them, 818 students were selected for the study. They were divided into Group 1 (Paramedical students) and Group 2 (Non-paramedical students), each containing 409 students.

TABLE 1: SOCIODEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS UNDER STUDY

Characteristics	Group	Category	Frequency (N=818)	Percentage (%)
Gender	Paramedical	Male	173	42.29
		Female	236	57.70
	Non-paramedical	Male	154	37.65
		Female	255	62.34
Age	Paramedical	18-20	160	39.11
		21-23	206	50.36
		24-26	43	10.51
	Non-paramedical	18-20	200	48.89
		21-23	176	43.03
		24-26	33	8.06
Education status	Paramedical	Diploma	15	3.66
		UG	231	56.47
		PG	163	36.85
	Non-paramedical	Diploma	32	7.82
		UG	311	76.03
		PG	66	16.13
State	Paramedical	Tamil Nadu	260	63.56
		Andhra Pradesh	36	8.80
		Karnataka	15	3.66
		Kerala	60	14.66
		Telangana	33	8.06
		Pondicherry (Union territory)	5	1.22
	Non-paramedical	Tamil Nadu	285	69.68
		Andhra Pradesh	16	3.91
		Karnataka	13	3.17
		Kerala	52	12.71
		Telangana	15	3.66
		Pondicherry (Union territory)	28	6.84

Comparison of Knowledge among Paramedical and Non-Paramedical Students: A total of nine questions were used to measure the knowledge of jaundice among paramedical students and non-paramedical students.

TABLE 2: COMPARISON OF RESPONSES SHOWING STUDENTS HEARD ABOUT JAUNDICE

Have you heard about jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Yes	398 (97.31%)	397 (97.06%)	0.04472	0.8325
No	11 (2.68%)	12 (2.93%)		

Table 2 shows that among 818 students, 97.31% of paramedical students and 97.06% of non-paramedical students reported hearing about jaundice. 2.68% of paramedical students and 2.93% of non-paramedical students reported not hearing about jaundice. The P-value is >0.05.

TABLE 3: COMPARISON OF RESPONSES SHOWING WHERE THEY HEARD ABOUT JAUNDICE

Where have you heard from?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Education	288 (70.41%)	208 (50.85%)	36.003	<0.0001*
Family	71 (17.35%)	112 (27.38%)		
Media	12 (2.93%)	33 (8.06%)		
Neighbours	27 (6.60%)	44 (10.75%)		
Not yet heard	11 (2.68%)	12 (2.93%)		

(* Significant)

Table 3 shows that among 818 students, 70.41% paramedical students and 50.85% non-paramedical students heard from Education, 17.35% paramedical students and 27.38% non-paramedical students heard from family, 2.93% paramedical students and 8.06% non-paramedical heard from media, 6.60% paramedical student and 10.75% non-paramedical student heard from Neighbours

and 2.68% paramedical and 2.93% non-paramedical student have not yet heard. The P-value is < 0.0001. The row and column variables are significantly associated.

TABLE 4: COMPARISON OF RESPONSES SHOWING CAN JAUNDICE BE CURED

Can jaundice be cured?	Paramedical (n=409)	Non-paramedical (n=409)	Chi-square	P- value
Yes	388 (94.86%)	373 (91.19%)	4.243	0.0394*
No	21 (5.13%)	36 (8.80%)		

(* Significant)

Table 4 shows that among 818 students, 94.86% of paramedical students and 91.19% of non-paramedical reported yes, which is the right answer and 5.13% of paramedical students and 8.80% of non-paramedical students reported no. The P-value is <0.05. The row and column variables are significantly associated.

TABLE 5: COMPARISON OF RESPONSES SHOWING THE SIGNS AND SYMPTOMS OF JAUNDICE

What are all the signs and symptoms of jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Yellowish colour of skin and eye	97 (23.71%)	117 (28.60%)	22.483	0.0004 *
Dark colour of urine	10 (2.44%)	14 (3.42%)		
Fever, chills, abdominal pain	8 (1.95%)	16 (3.91%)		
All of the above	289 (70.66%)	239 (58.43%)		
None of these	0	6 (1.46%)		
No idea	5 (1.22%)	17 (4.15%)		

(* Significant)

Table 5 shows that among 818 students, 70.66% of paramedical students and 58.43% of non-paramedical students reported all of the above, which is the right answer and followed by 23.71% of paramedical students and 28.60% of non-paramedical students reported the yellowish colour of skin and eye, 2.44% paramedical students and 3.42% non- paramedical students reported the dark colour of urine, 1.95% paramedical students and 3.91% non-paramedical students reported fever, chills, abdominal pain, and 1.46% non-paramedical students reported none of these, 1.22% paramedical students and 4.15% non-paramedical students reported no idea. The P-value is <0.05, and the row and column variables are significantly associated.

TABLE 6: COMPARISON OF RESPONSES SHOWING THE CAUSES OF JAUNDICE

What are all the causes of jaundice?	Paramedical (n=409)	Non-paramedical (n=409)	Chi-square	P- value
Chronic liver disease, bile duct obstruction	56 (13.69%)	83 (20.29%)	69.801	< 0.0001*
Drugs	6 (1.4%)	3 (0.73%)		
Increased production of bilirubin	107 (26.16%)	95 (23.22%)		
All of the above	222 (54.27%)	144 (23.20%)		
No idea	12 (2.93%)	75 (18.33%)		
None of these	6 (1.46%)	9 (2.20%)		

(* Significant)

Table 6 shows that among 818 students, 54.27% of paramedical students and 23.20% of non-paramedical students reported all the above, which is the right answer, followed by 13.69% paramedical students and 20.29% non-paramedical students reported chronic liver disease, bile duct obstruction, 1.4% paramedical students and 0.73% non-paramedical students reported drugs, 26.16% paramedical students and 23.22% non-paramedical students reported Increased production of bilirubin, 2.93% paramedical students and 18.33% non-paramedical students reported no idea and 1.46% paramedical students and 2.20% non-paramedical students reported none of these. The P-value is <0.001. The rows and columns are significantly associated.

TABLE 7: COMPARISON OF RESPONSES SHOWING THE TYPES OF JAUNDICE

What are all the types of jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Hemolytic jaundice	18 (4.40%)	15 (3.66%)	93.623	<0.0001*
Hepatocellular jaundice	30 (7.33%)	34 (8.31%)		
Obstructive jaundice	4 (0.97%)	7 (1.71%)		
All the above	314 (76.77%)	196 (47.92%)		
No idea	43 (10.51%)	157 (38.38%)		

(* Significant)

Table 7 shows that among 818 students, 76.77% paramedical students and 47.92% non-paramedical students reported all the above which is the right answer followed by 4.40% paramedical students and 3.66% non-paramedical students reported Hemolytic jaundice,7.33% paramedical students and 8.31% non-paramedical students reported Hepatocellular jaundice, 0.97% paramedical students and 1.71% non-paramedical students reported Obstructive jaundice, and 10.51% paramedical students and 38.38% non-paramedical students reported that they have no idea. The P-value is < 0.0001. The row and column variables are significantly associated.

TABLE 8: COMPARISON OF RESPONSES SHOWING THE CAUSES OF JAUNDICE ARE ASSOCIATED WITH HIGH BLOOD CONCENTRATION

The causes of jaundice are associated with high blood concentration of?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Bilirubin	351 (85.81%)	218 (53.30%)	105.98	< 0.0001*
Creatinine	10 (2.44%)	15 (3.66%)		
Urea	24 (5.86%)	73 (17.84%)		
No idea	24 (5.86%)	103 (25.18%)		

(* Significant)

Table 8 shows that among 818 students, 85.81% paramedical students and 53.30% non-paramedical students reported bilirubin which is the right answer, 2.44% paramedical students and 3.66% non-paramedical students reported creatinine, 5.86% paramedical students and 17.84% non-paramedical students reported Urea, 5.86% paramedical students and 25.18% non-paramedical students reported no idea. The P-value is < 0.0001. The row and column variables are significantly associated.

TABLE 9: COMPARISON OF RESPONSES SHOWING WHAT HAPPENS IF JAUNDICE GOES UNTREATED

What happens if jaundice goes untreated?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Death	62 (15.15%)	82 (20.04%)	50.384	< 0.0001*
Liver failure	108 (26.40%)	59 (14.42%)		
vision loss	11 (2.68%)	26 (6.35%)		
All the above	206 (50.36%)	173 (42.29%)		
No idea	22 (5.37%)	69 (16.87%)		

(* Significant)

Table 9 shows that among 818 students, 50.36% paramedical students and 42.29% non-paramedical students reported all of the above which is the right answer followed by 15.15% paramedical students and 20.04% non-paramedical students reported death, 26.40% paramedical students and 14.42% non-paramedical students reported Liver failure, 2.68% paramedical students and 6.35% non-paramedical students reported vision loss, 5.37% paramedical students and 16.87% non-paramedical students reported no idea. The P-value is < 0.0001. The row and column variables are significantly associated.

TABLE 10: COMPARISON OF RESPONSES SHOWING STUDENTS KNEW ABOUT INFANTILE JAUNDICE

Do you know about infantile jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Yes	256 (65.59%)	149 (36.43%)	55.991	<0.0001*
No	153 (37.40%)	260 (63.56%)		

(* Significant)

Table 10 shows that among 818 students, 65.59% of paramedical students and 36.43% of non-paramedical students reported yes, 37.40% of paramedical and 63.56% of non-paramedical students reported no. The P-value is < 0.0001. The row and column variables are significantly associated.

Comparison of attitude among Paramedical and Non-Paramedical Students: A total of seven questions were used to measure the Attitude of Jaundice among paramedical and non-paramedical students.

TABLE 11: COMPARISON OF RESPONSES SHOWING WHETHER JAUNDICE IS TRANSMITTABLE

Is jaundice transmittable?	Paramedical (n=409)	Non-paramedical (n=409)	Chi-square	P-value
Yes	61 (14.91%)	72 (17.40%)	29.791	< 0.0001*
No	312 (76.28%)	249 (60.88%)		
No idea	36 (8.80%)	88 (21.51%)		

(* Significant)

Table 11 shows that among 818 students, 76.28% paramedical students and 60.88% non-paramedical students reported No which is the right answer, 14.91% paramedical students and 17.40% non-paramedical students reported Yes, 8.80% paramedical students and 21.51% non-paramedical students reported No idea. The P-value is < 0.0001. The row and column variables are significantly associated

TABLE 12: COMPARISON OF RESPONSES SHOWING WHETHER STUDENTS ARE WILLING TO STUDY\WORK WITH JAUNDICE PATIENTS

Are you willing to study\work with jaundice patients?	Paramedical (n=409)	Non-paramedical (n=409)	Chi-square	P-value
Yes	333 (81.41%)	191 (46.69%)	107.07	< 0.0001*
No	76 (18.58%)	218 (53.30%)		

(* Significant)

Table 12 shows that among 818 students, 81.41% of paramedical students and 46.69% of non-paramedical students reported yes, 18.58% of paramedical students and 53.30% of non-paramedical students reported No. The P-value is < 0.0001. The row and column variables are significantly associated.

TABLE 13: COMPARISON OF RESPONSES SHOWING WHETHER STUDENTS THINK A JAUNDICED PATIENT CAN GO TO SCHOOL\ COLLEGE\OFFICE

Do you think a jaundice patient can go to school\ college\office?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P-value
Yes	200 (48.89%)	213 (52.07%)	0.8265	0.3633
No	209 (51.10%)	196 (47.92%)		

Table 13 shows that among 818 students, 48.89% paramedical students and 52.07% of non-paramedical students reported yes, 51.10% paramedical students and 47.92% non-paramedical students reported no. The P-value is >0.05.

TABLE 14: COMPARISON OF RESPONSES SHOWING STUDENTS HAVE A HISTORY OF JAUNDICE

Do you have a history of jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P-value
Yes	78 (19.07%)	52 (12.71%)	6.183	0.0129*
No	331 (80.92%)	357 (87.28%)		

Table 14 shows that among 818 students, 19.07% paramedical students and 12.71% non-paramedical students reported yes, 80.92% paramedical students, and 87.28% non-paramedical students reported no. The P-value is <0.05. The row and column variables are significantly associated.

TABLE 15: COMPARISON OF RESPONSES SHOWING WHICH TREATMENT IS GIVEN IN THEIR PAST MEDICAL HISTORY

Which treatment is given in your past medical history?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P-value
Modern medicine	17 (21.79%)	14 (26.92%)	0.4518	0.5015
Traditional medicine	61 (78.20%)	38 (73.07%)		

(* Significant)

Table 15 shows that among 818 students, 21.79% paramedical students and 26.92% non-paramedical students reported modern medicine, 78.20% paramedical students, and 73.07% of non-paramedical students reported Traditional medicine. The P-value is >0.05.

TABLE 16: COMPARISON OF RESPONSES SHOWING STUDENTS HAVE A HISTORY OF JAUNDICE IN THEIR FAMILY

Is there any history of jaundice in your family?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P-value
Yes	120 (29.33%)	113 (27.62%)	0.2941	0.5876
No	289 (70.66%)	296 (72.37%)		

Table 16 shows that among 818 students, 29.33% of paramedical students and 27.62% of non-paramedical students reported yes, 70.66% paramedical students and 72.37% of non-paramedical students reported no. The P-value is >0.05.

TABLE 17: COMPARISON OF RESPONSES SHOWING WHETHER STUDENTS HAVE SEEN A PATIENT WITH JAUNDICE

Have you ever seen a patient with jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P-value
Yes	263 (64.30%)	197 (48.16%)	21.637	< 0.0001*
No	146 (35.69%)	212 (51.83%)		

(* Significant)

Table 17 shows that among 818 students, 64.30% of paramedical students and 48.16% of non-paramedical students reported yes, 35.69% of paramedical students and 51.83% of non-paramedical students reported no. The P-value is <0.0001. The row and column variables are significantly associated.

Comparison of perception among Paramedical and Non-Paramedical Students: A total of eight questions were used to measure the perception of jaundice among paramedical and non-paramedical students.

TABLE 18: COMPARISON OF RESPONSES SHOWING WHICH METHOD OF TREATMENT WOULD PREFER TO TREAT JAUNDICE

Which method of treatment would you prefer to treat jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Modern medicine	99 (24.20%)	84 (20.53%)	2.263	0.3225
Traditional medicine	88 (21.51%)	102 (24.93%)		
Both	222 (54.27%)	223 (54.52%)		

Table 18 shows that among 818 students, 24.20% paramedical students and 20.53% non-paramedical students reported Modern medicine, 21.51% paramedical students and 24.93% non-paramedical students reported Traditional medicine, 54.27% paramedical students and 54.52% non-paramedical students reported Both. The P-value is >0.05

TABLE 19: COMPARISON OF RESPONSES SHOWING WHICH TYPE OF TREATMENT WOULD PREFER TO TREAT JAUNDICE IN MODERN MEDICINE

In modern medicine, which type of treatment is used for jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Blood transfusion	116 (28.36%)	172 (42.05%)	41.326	< 0.0001*
Drug therapy	327 (79.95%)	203 (49.63%)		
Surgical	49 (11.98%)	54 (13.20%)		
Phototherapy	136 (33.25%)	162 (39.60%)		

Table 19 shows that among 818 students, 23.36% paramedical students and 42.05% non-paramedical students reported Blood transfusion, 79.95% paramedical students and 49.63% non-paramedical students reported Drug therapy, 11.98% of paramedical students and 13.20% non-paramedical students reported Surgical and 33.25% paramedical students and 39.60% non-paramedical students reported Phototherapy. The P-value is < 0.0001. The row and column variables are significantly associated.

TABLE 20: COMPARISON OF RESPONSES SHOWING WHICH TYPE OF LAB TEST IS USED FOR THE DIAGNOSIS OF JAUNDICE IN MODERN MEDICINE

In modern medicine, which type of lab test is used for the diagnosis of jaundice	Paramedical (n=409)	Non-paramedical (n=409)	Chi-square	P- value
Blood and urine test for bilirubin	301 (73.59%)	247 (60.39%)	52.014	< 0.0001*
CT scan	6 (1.46%)	17 (4.15%)		
Ultrasound	2 (0.48%)	4 (0.97%)		
All the above	87 (21.27%)	71 (17.35%)		
No idea	13 (3.17%)	70 (17.11%)		

(* Significant)

Table 20 shows that among 818 students, 21.27% paramedical students and 17.35% of non-paramedical students reported all the above which is the right answer followed by, 73.59% paramedical students and 60.39% non-paramedical students reported blood and urine test for bilirubin, 1.46% paramedical students and 4.15% non-paramedical students reported CT scan, 0.48% paramedical students and 0.97% non-paramedical students reported Ultrasound, 3.17% paramedical students and 17.11% non-paramedical students no idea. The P-value is < 0.0001. The row and column variables are significantly associated.

TABLE 21: COMPARISON OF RESPONSES SHOWING STUDENTS PREFER HOME REMEDIES FOR JAUNDICE

Do you prefer home remedies for jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Yes	170 (41.56%)	122 (29.82%)	12.296	<0.0001*
No	85 (20.78%)	104 (25.42%)		
Maybe	154 (37.65%)	183 (44.74%)		

(* Significant)

Table 21 shows that among 818 students, 41.56% paramedical students and 29.82% non-paramedical students reported Yes, 20.78% paramedical students and 25.42% non-paramedical students reported No, 37.65% paramedical students and 44.74% non-paramedical students reported Maybe. The P-value is <0.05. The row and column variables are significantly associated.

TABLE 22: COMPARISON OF RESPONSES SHOWING WHAT ARETHE HOME REMEDIES THAT CAN BE USED FOR JAUNDICE

What are the home remedies that can be used for jaundice?	Paramedical (n=409)	Non-paramedical (n=409)	chi-square	P-value
Keelanelli (gale of the wind), Karisalankanni (yellow false daisy)	271 (66.25%)	291 (71.14%)	5.795	0.1220
Carrot juice, grape juice, sugarcane juice	140 (34.22%)	123 (30.07%)		
Amla (gooseberry)	164 (40.09%)	127 (31.05%)		
Others	17 (4.15%)	13 (3.17%)		

Table 22 shows that among 818 students, 66.25% paramedical students and 71.14% non-paramedical students reported Keelanelli (gale of the wind), Karisalankanni (yellow false daisy), 34.22% paramedical students and 30.07% non-paramedical students reported Carrot juice, grape juice, sugarcane juice, 40.09% paramedical students and 31.05% non-paramedical students reported Amla (gooseberry), 4.15 % paramedical students and 3.17% non-paramedical students reported others (0.24% paramedical students reported Nelausiri (Phyllanthus), 0.24% paramedical students reported

coconut water, 0.24% paramedical students reported aloe vera juice, 0.48% paramedical students and 0.48% non-paramedical students reported sunlight exposure, 1.22% paramedical students and 0.24% paramedical students reported Yogurt, 0.24% paramedical students reported Chicory leaf juice, 1.22% paramedical students and 0.73% non-paramedical reported Lemon squash, 0.24% paramedical students reported Papaya leaves, and 1.71% non-paramedical reported they have no idea. The P-value is >0.05. The study was conducted by V R Mohan *et al.,* 2011 carried out in Sirumalai hills of Western Ghats, Dindigul, Tamil Nadu and the result shows that medicinal plants such as Keelanelli, Karisalankanni are considered to be effective in the treatment of jaundice. This study reveals that medicinal plants still play a vital role in primary healthcare and traditional medicine also has the potential to form the basis of a pharmaceutical drug for the treatment of jaundice. In traditional medicine, Keelanelli and Karisalankanni were predominantly preferred by both paramedical and non-paramedical students. The Karisalankanni (*Eclipta prostrata. L.)* and Keelanelli (*Phyllanthus amarus)* are the most commonly used hepatoprotective herb in the Indian system of medicine. In Karisalankanni, Coumestans (wedelolactone and demethyl-wedelolactone) have been mentioned as the important components of the hepatoprotective effect. The plants of Keelanelli have been used as a natural remedy for Jaundice and Hepatitis.

TABLE 23: COMPARISON OF RESPONSES OF STUDENTS SHOWING THE AVAILABILITY OF ANY TRADITIONAL MEDICINAL PRACTITIONER AROUND THEIR LOCALITY

Availability of any traditional medicinal practitioner around your locality?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P- value
Yes	160 (39.11%)	135 (33.00%)	11.311	<0.0001*
No	139 (33.98%)	119 (29.09%)		
No idea	110 (26.89%)	155 (37.89%)		

(* Significant)

Table 23 shows that among 818 students, 39.11% paramedical students and 33% non-paramedical students reported Yes, 33.98 % paramedical students and 29.09% non-paramedical students reported No, 26.89% paramedical students and 44.74% non-paramedical students reported Maybe. The P-value is <0.05. The row and column variables are significantly associated.

TABLE 24: COMPARISON OF RESPONSES SHOWING WHAT ARE THE DIET WOULD THEY PREFER FOR JAUNDICE

What are diet would you prefer for jaundice?	Paramedical (n=409)	Non- paramedical (n=409)	Chi-square	P-value
fluid intake, vegetables, fruits, fiber foods	375 (91.68%)	336 (82.15%)	16.354	< 0.0001*
Mixed diet (veg and non-veg)	34 (8.31%)	73 (17.84%)		

(* Significant)

Table 24 shows that among 818 students, 91.68% paramedical students and 82.15% non-paramedical students reported fluid intake, vegetables, fruits, and fiber foods which is the right answer and 8.31% paramedical students and 17.84% non-paramedical students reported as Mixed diet (veg and non-veg). The P-value is <0.0001. The row and column variables are significantly associated.

TABLE 25: COMPARISON OF RESPONSES SHOWING DO THEY THINK TAKING PREVENTIVE MEASURES IS EFFECTIVE AGAINST JAUNDICE

Do you think taking preventive measures is effective against jaundice?	Paramedical (n=409)	Non-Paramedical (n=409)	Chi-square	P-value
Yes	270 (66.01%)	202 (49.38%)	23.841	< 0.0001*
No	42 (10.26%)	54 (13.20%)		
Maybe	97 (23.71%)	153 (37.40%)		

(* Significant)

Table 25 shows that among 818 students, 66.01% paramedical students and 49.38% non-paramedical students reported Yes which is the right answer, 10.26% paramedical students and 13.20% non-

paramedical students reported No, 23.71% paramedical students and 37.40% non-paramedical students reported Maybe. The P-value is <0.0001. The row and column variables are significantly associated.

Limitations of the Study: The limitation of the present study was the small sample size. A web-based survey was conducted to reduce the chance of covid transmission, thus might not capture the responses who don't have smartphones or computers to complete the survey. Participants in the study were also not eligible if they were uneducated or unable to use online applications.

CONCLUSION: This study concluded that Paramedical students had better knowledge and attitude than non-paramedical students. The paramedical students had better knowledge of types, signs and symptoms, causes, and diagnosis of jaundice than non-paramedical students.

So, we recommend many awareness programs, seminars, and workshops that need to be conducted for all the students, especially non-paramedical students, to enhance their knowledge and attitude toward jaundice.

The study reports that many paramedical and non-paramedical students have a positive perception of jaundice, and only a few have a negative perception of Jaundice as Jaundice is a disease that could be cured by treating the main cause behind the disease.

So, the poor perception of some respondents should be changed through education and training programs. And also, other studies at the community level should be conducted to learn more about jaundice and to create awareness about jaundice in the community. This study reports that 130 students had a prevalence of jaundice in their medical history. Traditional medicine was predominantly used rather than modern medicine to manage jaundice in their past medical history.

ACKNOWLEDGEMENTS: The authors are thankful to all the participants who participated in our study.

CONFLICTS OF INTEREST: The author declares no conflicts of interest.

REFERENCES:

1. Ashikujaman Syed: Jaundice it is not a disease, it is a symptom of several possible underlying illnesses, Int J of Current Research in Medical Sciences 2018; 4(11): 16-26.
2. Sampath Kumar KP and Debjit Bhowmik: Jaundice-review of clinical features, differential diagnosis and remedies. The Pharma Research A J 2011; 15: 241-252.
3. Ullah S, Rahman K and Hedayati M: Hyperbilirubinemia in neonates: types, causes, clinical examinations, preventive measures, and treatments: a narrative review article. Iran J Public Health 2016; 45: 558.
4. Devesh Tewari, Andrei Mocan, Parvanov, Archana N. Sah, Seyed M. Nabavi and Lukasz Huminiecki: Ethnopharmacological Approaches for Therapy of Jaundice: Part I. Frontiers in Pharmacology 2017; 8: 1-18.
5. Reddy MG, Prabhakar GC and Sree V: Maternal and fetal outcome in jaundice complicating pregnancy. J NTR Univ Health Sci 2014; 3: 231-233.
6. Gibson MC: Jaundice epidemiology and demographics, 29 July2021://www.wikidoc.org/index.php/Jaundice_epidemiology_and_demographics.
7. Shayesta Rahi, Masarat Rashid, Syed Sabahat Ashraf and Naveena Nazim: assessment of knowledge, attitude and practice of rural people of Kashmir towards jaundice: a sample survey. North Asian International Res J of Pharma & Medical Sciences ISSN: 2456-8287 2020; 4(2): 91-106.
8. Muhammad Waseem Abbas, Taiha Shamshad and Muhammad Aizaz Ashraf: Jaundice: a basic review. Int J of Research in Medical Sciences 2016; 4(5): 1313-1319.
9. Daniel Murrell, Tim, Jewell, Types of jaundice, July 30, 2018, https://www.healthline.com/health/jaundice-
10. Dinesh Pashankar and Richard A: Schreiber, Jaundice in older children and Adolescents. Pediatrics in Review 2001; 22(7): 219-226.
11. Jaundice in adult (hyperbilirubinemia), Steven Doerr, Bhupinder S Anand, 9/2/2020
12. Sean P. Roche and Rebecca Kobos: Jaundice in the adult patient. American Family Physician 2004; 69(2): 299-304.
13. Bratlid D, Nakstad B and Hansen T: National guidelines for the treatment of jaundice in the newborn. Acta Paediatrica 2011; 100: 499-505.
14. Bhutani V, Maisels M, Stark A and Buonocore G: Management jaundice and prevention of severe neonatal hyperbilirubinemia in infants >35 weeks gestation. Neonatology 2008; 94: 64-67.
15. Selahudin Alemu, Derbew Fikadu Berhe, S Palani, Nisha Mary Joseph. Knowledge, attitude, and perception towards jaundice among ayder referal hospital health workers. IRJP 2011; 2(12): 191-165

How to cite this article:
Srinivasan A, Subhashini A, Robinson DM, Koshy SS and Yeshwanth S: A comparative study of knowledge, attitude and perception of jaundice among paramedical and non-paramedical students. Int J Pharm Sci & Res 2023; 14(5): 2511-21. doi: 10.13040/IJPSR.0975-8232.14(5).2511-21.