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Preface

We would like to present, with great pleasure, the inaugural volume-9, Issue-1, January 2023, of a scholarly journal, *International Multispecialty Journal of Health*. This journal is part of the AD Publications series *in the field of Medical, Health and Pharmaceutical Research Development*, and is devoted to the gamut of Medical, Health and Pharmaceutical issues, from theoretical aspects to application-dependent studies and the validation of emerging technologies.

This journal was envisioned and founded to represent the growing needs of Medical, Health and Pharmaceutical as an emerging and increasingly vital field, now widely recognized as an integral part of scientific and technical statistics investigations. Its mission is to become a voice of the Medical, Health and Pharmaceutical community, addressing researchers and practitioners in below areas

Clinical Specialty and Super-specialty Medical Science:

It includes articles related to General Medicine, General Surgery, Gynecology & Obstetrics, Pediatrics, Anesthesia, Ophthalmology, Orthopedics, Otorhinolaryngology (ENT), Physical Medicine & Rehabilitation, Dermatology & Venereology, Psychiatry, Radio Diagnosis, Cardiology Medicine, Cardiothoracic Surgery, Neurology Medicine, Neurosurgery, Pediatric Surgery, Plastic Surgery, Gastroenterology, Gastrointestinal Surgery, Pulmonary Medicine, Immunology & Immunogenetics, Transfusion Medicine (Blood Bank), Hematology, Biomedical Engineering, Biophysics, Biostatistics, Biotechnology, Health Administration, Health Planning and Management, Hospital Management, Nephrology, Urology, Endocrinology, Reproductive Biology, Radiotherapy, Oncology and Geriatric Medicine.

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It includes articles related to Pathology, Microbiology, Forensic Medicine and Toxicology, Community Medicine and Pharmacology.

Basic Medical Science:

It includes articles related to Anatomy, Physiology and Biochemistry.

Spiritual Health Science:

It includes articles related to Yoga, Meditation, Pranayam and Chakra-healing.

Each article in this issue provides an example of a concrete industrial application or a case study of the presented methodology to amplify the impact of the contribution. We are very thankful to everybody within

that community who supported the idea of creating a new Research with *IMJ Health*. We are certain that this issue will be followed by many others, reporting new developments in the Medical, Health and Pharmaceutical Research Science field. This issue would not have been possible without the great support of the Reviewer, Editorial Board members and also with our Advisory Board Members, and we would like to express our sincere thanks to all of them. We would also like to express our gratitude to the editorial staff of AD Publications, who supported us at every stage of the project. It is our hope that this fine collection of articles will be a valuable resource for *IMJ Health* readers and will stimulate further research into the vibrant area of Medical, Health and Pharmaceutical Research.



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She has awarded with WHO Fellowship for IEC at Bangkok. She has done management course from NIHFW. She has published and present many research paper in India as well as abroad in the field of community medicine and medical education. She has developed Socio-economic Status Scale (Gaur's SES) and Spiritual Health Assessment Scale (SHAS). She is 1st author of a book entitled " Community Medicine: Practical Guide and Logbook.

Research Area: Community Medicine, Biostatics, Epidemiology, Health and Hospital Management and Spiritual Health.

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Dr. AMER A. TAQA

Dr. AMER A. TAQA is Professor and Head in Dental Basic Science Mosul University, Mosul, IRAQ. He has been registrar of department of Dental Basic Science Mosul University, Mosul, IRAQ. He has published about 100 of research papers and out of that 50 were of international level. He has awarded many times for scientific researches by Government. He has been member of many examination committees and also is a Member in Iraqi Scientific Staff. He has been working as Editor - reviewer in many journals.

Research Area: Dental Science.

Dr. I.D. Gupta

Dr. I. D. Gupta is Professor Psychiatry and working as additional Principal and Dean of student welfare in SMS Medical College, Jaipur.

He is recipient of Prof. Shiv Gautam oration award by Indian Psychiatric Society. He has done training in YMRS at Monte Carlo and BPRS at Singapore. He has been President Indian Psychiatric Society, Rajasthan State Branch. He is author of "Psycho Somatic Disorder" chapter in 1st edition post graduate text book of Psychiatry by Vyas and Ahuja. He has also worked with National Mental Health Programme and has a lot of publication.

Research Area: Community Mental Health, Psycho somatic and liaison Psychiatry.

Dr. Lokendra Sharma

Dr. Lokendra Sharma is Associate Professor Pharmacology and working as Nodal officer of SMS Medical College, Jaipur.

He is recipient of WHO Fellowship award on Poison Patient Management at Vietnam. He is resource faculty for Experimental Toxicology and Basic Course for Medical Education. He is presented and published a lot of research articles at national and international level.

Research Area: PHARMACOLOGY

Dr. Anuradha Yadav

Dr. Anuradha Yadav is working as Professor Physiology, SMS Medical College, Jaipur (Rajsthan) India. She is a popular medical teacher and research scholar who had many publications in indexed journals.

Research Area: CVS & CNS physiology, Medical Education and Spiritual Health.

Dr. Rajeev Yadav

Dr. Rajeev Yadav is working as Associate Professor Community Medicine, SMS Medical College, Jaipur (Rajsthan) India. He is member of Research Review Board of the Institute.

He has authored a book entitled "Community Medicine: Practcal Guide and Logbook".

Research Area: His area of Interest are Epidemiology, Biostatistics and Spiritual Health.

Prof. Dillip Kumar Parida

Professor and Head in the Department of Oncology, AIIMS, Bhubaneswar.

He has done the Professional Training in Japan (Osaka University, NIBI, AHCC Research Association, Hyogo Ion Beam Center), ESTRO Fellowship in Denmark and India(AIIMS Delhi, BARC Mumbai, SCB Medical College-Cuttak, MKCG Medical College-Berhampur).

Research Area: Brachytherapy, Total Skin Electron Irradiation, Palliative Radiotherapy, Stereotactic & Conformal radiotherapy, Radiation Cell Biology, Cancer Genetics.

Dr. Praveen Mathur

Dr. Praveen Mathur is working as Professor- Pediatric Surgery and is recipient of Commonwealth Fellowship in Pediatric Laparoscopy from Uk and fellowship award in minimal access Surgery (FMAS). He has done Clinical observer ship in the Department of Pediatric Surgery, Johns Hopkins University, Baltimore, USA. (2008). He has presented and published a number of research articles at national and international level. He is reviewer of prestigious Journal of Pediatric Surgery (JPS) and World Journal of Gastroenterology, Journal of neonatal Surgery (JNS).

Research Area: Pediatric Surgery & Laparoscopy.

Dr. Lokendra Sharma

Dr. Lokendra Sharma is Associate Professor Pharmacology and working as Nodal officer of SMS Medical College, Jaipur.

He is recipient of WHO Fellowship award on Poison Patient Management at Vietnam. He is resource faculty for Experimental Toxicology and Basic Course for Medical Education. He is presented and published a lot of research articles at national and international level.

Research Area: PHARMACOLOGY.

Dr Rajeev Sharma (MS; FMAS; FIMSA;FCLS)

He is working as Professor, Department of Surgery, Government Medical College, Chandigarh, India. He has done FMAS, FIMSA and FCLS along with MS (Gen Surgery).

He has about 50 international and national publications to his credit. He has held various positions in the Association of Minimal Access Surgeons of India (AMASI) from time to time. He has also acted as instructor of various AMASI skill courses held at different places in India. He has established Surgical Technique learning centre at GMCH Chandigarh for imparting training to the budding surgeons in the field of minimal access surgery. He is also the reviewer in the subject in various journals.

Research Area: Minimal Access Surgery.

Dr Anshu Sharma (MS ANATOMY)

She is Presently working as assistant professor in the department of Anatomy, GMCH, Chandigarh. She has many publications in various national and international journals. She is executive member of Anatomical Society of India (ASI) and North Chapter of ASI. She is also a member of editorial board of Journal of Medical College Chandigarh.

Research Area: Congenital Malformation, Developmental Anatomy.

Dr. Rajeev Yadav

Dr. Rajeev Yadav is working as Associate Professor Community Medicine, SMS Medical College, Jaipur (Rajsthan) India. He is member of Research Review Board of the Institute.

He has authored a book entitled "Community Medicine: Practical Guide and Logbook".

Research Area: His areas of Interest are Epidemiology, Biostatistics and Spiritual Health.

Dr. Dilip Ramlakhyani

Dr. Dilip Ramlakhyani working as Associate professor Pathology and member of IT Committee of Sawai Man Singh Medical College, Jaipur (Raj) India. He has published many articles in indexed journals.

Dr. Virendra Singh

Dr. Virendra Singh worked as Supernatant and head of department of Pulmonary Medicine, SMS Medical College, Jaipur (Rajsthan) India.

He has gone abroad for many training courses and to present research papers. He had been chairman of Research Review Board of SMS Medical College, Jaipur. He is a great research scholar and had published book related to his faculty and had many publications in indexed journals.

Dr. Mahesh Sharma

Dr. Mahesh Sharma is a Principle specialist General Surgery in Rajasthan State Government, India. He has been PMO of district hospitals for more than 15 years. He has gone abroad as observer of many of training related to his speciality. He has published and present many research paper in India as well as abroad.

He has developed Spiritual Health Assessment Scale (SHAS) with Dr. Kusum Gaur.

Research Area: General Surgery, Health and Hospital management and Spiritual Health.

Dr. Ravindra Manohar

Professor Community Medicine, working as head of department of PSM, SMS Medical College, Jaipur (Rajsthan) India.

Previously he has worked in BP Kiorala Institute of Medical Sciences, Nepal. He has visited CDC Atlántica for a Statistical workshop. He has been convener of MBBS and PG exams. He is a research scholar and had many publications in indexed journals.









Dr. Praveen Mathur

Dr. Praveen Mathur is working as Professor- Pediatric Surgery and is recipient of Commonwealth Fellowship in Pediatric Laparoscopy from Uk and fellowship award in minimal access Surgery (FMAS). He has done Clinical observer ship in the Department of Pediatric Surgery, Johns Hopkins University, Baltimore, USA. (2008). He has presented and published a number of research articles at national and international level. He is reviewer of prestigious Journal of Pediatric Surgery (JPS) and World Journal of Gastroenterology, Journal of neonatal Surgery (JNS).

Research Area: Pediatric Surgery & Laparoscopy.

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Analysis of Factors Affecting Uric Acid Levels (Case Study in Diploma III Nursing Students of Stikes Dirgahayu Samarinda in 2022)

Norsanah¹, Vinsensia Tetty²

Lecturers of STIKES Dirgahayu Samarinda, Jl. Pasundan No. 21, Phone 0541-748335

*Corresponding Author

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Abstract— *The research aimed to determine the factors influencing uric acid levels in Diploma III students of Nursing STIKES Dirgahayu Samarinda in 2022. This research analytically uses a Cross-Sectional Design to determine the Factors of Uric Acid Levels of Students. The research was carried out at Campus of STIKES Dirgahayu Samarinda from January to August 2022. The research sample was 42 Diploma III students for the 2019/2020 academic year. The research activities are as follows: (1) preparation, (2) implementation by collecting data, namely examining uric acid levels using Accu Cek and distributing questionnaires, (4) data analysis, and (5) reporting. The results showed that: (1) the number of respondents who had urate levels was classified as consisting of 9 male sex (21.40%) and only six female respondents (14.28%); (2) types of food that affect the incidence of high uric acid are seafood, organ meats and nuts; and (3) exercise activities can also cause high uric acid events.*

Keywords— *Gout Incidence.*

I. INTRODUCTION

Ordinary people know uric acid as gout arthritis caused by the accumulation of monosodium urate crystals in the body uric acid results from the final metabolism of foods containing purine substances. Purine substances are components of nucleic acids found in the nucleic of body cells. Increased uric acid levels in the body can cause pain in the joint area, which is very painful for the sufferer accumulating crystals in the communal area results in high uric acid levels in the blood. Consuming foods high in purines can increase uric acid levels in the blood. High-fat foods, such as fried foods, coconut, milk foods, margarine, butter, and fruits, such as durian and avocado, also increase uric acid levels (Krisnatuti, 2007).

In the 2012 Basic Health Research, it was found that the prevalence of hyperuricemia in Indonesia was found to be 11.9%; in East Java, it was 26.4% (Ministry of Health RI, 2013). Differences in uric acid levels according to age and gender. Before puberty in males and females, it is around 3.5 mg/dL. After puberty, uric acid levels in men increase gradually. They can reach 5.2 mg/dL, and in women, they usually remain low because they have the hormone estrogen, which can excrete uric acid in the body. Uric acid levels in women begin to show an increase in the postmenopausal period and can reach 4.7 mg/dL. It is said that normal uric acid levels in adult men are 3.4 – 7.0 mg/dL, and in adult women, 2.4 – 5.7 mg/dL, Uric acid circulating in the blood will not cause pain if the levels are within normal limits. Herliana, 2103).

According to data from the Central for Disease Control and Prevention (CDC), in the last decade, approximately 12.7 million (17%) children and adolescents were obese. In 2011-2012, as many as 20.25% of children aged between 12 to 19 years were obese, and this was the highest compared to other age groups. In a survey conducted by Riskesdas in 2010 and 2013 in Indonesia, the prevalence of adolescents aged 16-18 years who were obese increased from 1.4% to 7.3%. (Journal e-Biomedik (EBM), Volume 6, Number 1, January-June 2018).

The research aimed to determine the factors influencing uric acid levels in Diploma III Students of Nursing STIKES Dirgahayu Samarinda in 2022.

II. RESEARCH METHODS

2.1 Place and Time

The research was carried out at Campus of STIKES Dirgahayu Samarinda from January to August 2022. The research sample was 42 Diploma III students for the 2019/2020 academic year, consisting of 9 men and 33 women.

2.2 Materials and Tools

The material used is in the form of a questionnaire, and the tool used is ACCU Check.

2.3 Research Design

The research is analytical by using a Cross-Sectional Design and taking research samples using saturated samples (Nursalam, 2014), namely Diploma III Students at STIKES Dirgahayu Samarinda for the 2019/2020 academic year, with as many as 42 people as respondents.

2.4 Research Activities

The research activities are as follows: (1) preparation, (2) determination of respondents, (3) data collection through (a) examination of uric acid levels and (b) filling out questionnaires, (4) data analysis, and (5) reporting.

III. RESULTS AND DISCUSSION

3.1 Results of Measurement of Uric Acid Levels

The results of measuring uric acid levels from 42 respondents are presented in Table 1 below:

TABLE 1
RESULTS OF MEASUREMENT OF URIC ACID LEVELS

No	Gender	Uric Acid Level (mg/dL)	Status	Total	Percentage
1	Male	7,2 – 8,1	High	9	21,43
2	Female	6,7 – 8,4	High	6	14,29
3	Wanita	4,3 – 5,8	Normal	27	64,28
Jumlah				42	100,00

Source: Data Processed Results (2022)

The data in Table 1 above shows that all nine men have high uric acid levels, ranging from 7.2 – 8.1 mg/dL, and in women, out of 33 people, six people have uric acid levels. Classified ranged from 6.7-8.4 mg/dL, and 27 people had uric acid levels classified as usual, ranging from 4.3 to 5.8 mg/dL. WHO stated (2016) that normal uric acid levels in men range from 2.0 - 7.5 mg/dL, while in adult women, it is 2.0 - 6.5 mg/dL; in Men aged 40 years, average uric acid levels are 2.0 - 8.5 mg/dL and in women are 2.0 - 8.0 mg/dL; and in children aged 10-18 years, that is, for boys, the normal level of uric acid is 3.6 - 5.5 mg/dL, and for women, it is 3.6 - 4.0 mg/dL. Furthermore, Herliana (2013) stated that normal uric acid levels in adult men are 3.4 - 7.0 mg/dL, and in adult women, 2.4 - 5.7 mg/dL. Uric acid circulating in the blood will not cause disease if the levels are within normal limits.

3.2 Characteristics of Respondents

The results of completing the questionnaire by 42 respondents consisting of 9 men (21.40%) and 33 women (78.60%) are presented in Table 2.

TABLE 2
CHARACTERISTICS OF RESPONDENTS

No	Factors / Variable	Respondents' Answers			
		Yes		No	
		n	%	n	%
1	Symptoms of Gout				
	Pain	30	71,40	12	28,60
	Tingling	20	47,60	22	52,40
	Joint Stiffness	9	21,40	33	78,60
2	Soft drinks	11	26,20	31	73,80
3	Types of food				
	Seafood	24	57,10	18	42,90
	Offal	34	81,00	8	19,00
	Nuts	29	69,00	13	31,00
	Cassava leaves	12	28,60	30	71,40
	Kale	3	7,10	39	92,90
	Avocado fruits	15	35,70	27	64,30
4	Sports activity	28	66,70	14	33,30
5	Uric acid	15	35,70	27	64,30

Source: Data Processed Results (2022)

Based on the results of the data analysis presented in Table 2, it shows that:

- 1) out of 42 respondents who were classified as having high uric acid, there were 15 respondents (26.70%), and 27 respondents (64.30%) did not have gout.
- 2) the symptoms of gout experienced by respondents were: (a) 30 respondents (71.40%) felt pain, (b) 20 respondents (47.60%) felt tingling, and (c) felt stiff joints, as many as nine respondents (21.40%);
- 3) about food and beverages, it shows that: (a) respondents did not consume alcoholic beverages or soft drinks, namely 31 respondents (73.80%) and only 11 people (26.20%) consumed soft drinks; (b) 24 respondents (57.10%) consumed seafood and 18 respondents (42.90%) did not consume seafood, (c) 34 respondents (81.00%) consumed offal and did not consume offal eight respondents (19.00%), (d) consumed nuts as many as 29 respondents (69.00%) and did not consume nuts 13 respondents (31.00%), (e) consumed cassava leaves as many as 12 respondents (28.60%) and did not consume cassava leaves by 30 respondents (71.40%), (f) consumed kale by three respondents (7.10%) and did not consume kale by 39 respondents (92.90%), and (g) 15 respondents (35.70%) consumed avocado fruits and 27 respondents (64.30%) did not consume avocado fruits;
- 4) 28 respondents (66.70%) did sports activities, and 14 respondents (33.30%) did not do sport activity.

3.3 Variable Relationship with Uric Acid

The results of research regarding the relationship between factors of gender, type of food, and sports activities with gout are presented in Table 3 below:

TABLE 3
RESEARCH RESULTS REGARDING THE RELATIONSHIP BETWEEN ASPECTS OF GENDER, TYPE OF FOOD, SPORTS ACTIVITIES AND THE INCIDENCE OF GOUT

Nomor	Factors / Variable		Uric acid		n	%	P Value
			Yes	No			
1	Gender	Male	9	0	9	21,40	0,00
		Female	6	27	33	78,60	
	Total	15	27	42	100,0		
2	Soft drinks	Yes	11	0	11	26,20	0,00
		No	4	27	31	73,80	
	Total	15	27	42	100,0		
3	Seafood	Yes	15	9	24	57,00	0,00
		No	0	18	18	43,00	
	Total	15	27	42	100,00		
4	Offal	Yes	15	19	34	81,00	0,01
		No	0	8	8	19,00	
	Total	15	27	42	100,0		
5	Nuts	Yes	15	14	29	69,00	0,01
		No	0	13	13	31,00	
	Total	15	27	42	100,0		
6	Cassava leaves	Yes	12	0	12	29,00	0,00
		No	3	27	30	71,00	
	Total	15	27	42	100,0		
7	Kale	Yes	3	0	3	7,00	0,04
		No	12	27	39	93,00	
	Total	15	27	42	100,00		
8	Avocado Fruits	Yes	15	0	15	36,00	0,00
		No	0	27	27	64,00	
	Total	15	27	42	100,00		
9	Sports activity	Yes	15	13	28	67,00	0,00
		No	0	14	14	33,00	
	Total	15	27	42	100,00		

Source: Data Processed Results (2022)

Based on the data in Table 3 above, it can be stated that various relationships between factors that influence the incidence of gout are as follows:

3.3.1 Gender Relations and Gout Incidence

The number of respondents with male sex was nine respondents (21.40%), and all of them had high uric acid levels, while the female sex, there were 33 respondents, only six respondents had high uric acid levels (14.29%). The study results are in accordance with the results of the research reported by Firdayanti, Susanti & Setiawan (2019) that men tend to have higher uric acid levels than women before the age of 30.

The result of the bivariate test is a p-value of 0.00, indicating a relationship between gender and the incidence of gout. This is supported by the results of the research reported by Widyanto (2014), cited by Firdayanti, Susanti & Setiawan (2019), that the incidence of high uric acid in women tends to be found at the age of menopause because it is influenced by a decrease in the

hormone estrogen, whereas in men the risk is high. Experiencing high uric acid levels can occur at any age because hormones do not influence it.

3.3.2 The Relationship between Soft Drinks and Gout Incidence

The study results in Table 3 shows that 11 respondents (26.20%) who consumed soft drinks experienced high uric acid levels. The bivariate analysis results also showed that the p-value was 0.00, which means there is a relationship between the consumption of soft drinks and the incidence of gout. This is in accordance with the results of a study reported by Zhu, Pandya & Choi (2008), quoted by Thayibah, Ariyanto & Ramani (2018) that there is an increased risk of hyperuricemia directly proportional to the increase in consumption of carbonated drinks, compared to men who consume less than one serving carbonated beverages in a month, those who consume between 5-6 servings of carbonated drinks in a week have a 29% higher risk of developing hyperuricemia, those who consume two or more servings of carbonated beverages in a day, have a significantly higher risk of 85% of developing hyperuricemia.

3.3.3 Relationship between High Purine Foods and Gout Incidence

The study results in Table 3 show that 15 respondents who consumed seafood, offal and nuts had high uric acid levels. The bivariate analysis showed that the p-value was below 0.05, namely seafood and uric acid levels (p-value 0.00) and the relationship between organ meats and nuts and uric acid levels (p-value 0.01). This is supported by the results of Nursilmi's research (2014) in Listiani (2020) that purine acids contained in food will be converted into uric acid. Purines are one of the essential organic compounds that make up the nucleic acids or the nucleus of cells that are included in the amino acid group, the building blocks of protein. Consumption of foods high in purines triggers increased uric acid levels in serum and foods rich in purines, namely seafood, organ meats, and nuts. Furthermore, it was stated by Saraswati (2009), which was also supported by the research results of Amiruddin, Nuddin & Hengky (2019), that foods containing high purines (> 150 mg/100 g of food ingredients), namely liver, kidneys, and brain, heart, lungs, other offal, shrimp, mussels, clams, sardines, herring, meat/broth extract, duck, sardines, mackerel, mussels and clams could increase uric acid levels.

3.3.4 The relationship between the Types of Vegetables and Gout Incidence

The study results in Table 3 shows that 12 respondents who consumed cassava leaves experienced gout. The bivariate analysis showed a relationship between cassava leaf consumption and gout incidence with a p-value of 0.00. For the consumption of kale, the data indicates that only three respondents who consumed kale had high uric acid levels. Interestingly, 12 respondents did not consume kale but had high uric acid levels. This could be due to their habit of consuming foods high in purines other than kale. The results of the bivariate analysis showed a p-value of 0.04 which means that there is a relationship between the consumption of kale and the incidence of gout. As stated by Kaneko et al. (2012); Yenrina et al. (2014); and Fithri, Probosari & Nissa (2018) that tofu, tempeh (fermented soybean), mushrooms, green beans, tolo beans, spinach leaves, cassava leaves, kale leaves, leaves and seeds of melinjo (*Gnetum gnemum*), and broccoli beans, as well as all animal food ingredients, are good fresh and processed foods are foods that have a high purine content. Based on the results of the semi-quantitative FFQ conducted during the interview, most respondents with high uric acid levels also consumed foods high in purines. apart from offal (liver, gizzard, tripe and intestines), food ingredients such as leaves and seeds of *Gnetum gnemum*, cassava leaves, tofu, and tempeh also contain high purines affect high uric acid levels (Wahyuni & Novianti, 2020).

3.3.5 Relationship between Avocado Fruit and Gout Incidence

The study results in Table 3 show that as many as 15 respondents who consumed avocado fruits had high uric acid levels, whereas 27 respondents who did not consume avocado fruits had low uric acid levels. The bivariate analysis showed a significance test of p-value 0.00, namely that there was a relationship between avocado fruits consumption and uric acid levels in a person's blood. As stated by Fauzan (2016), high fat or oil consumption such as fried foods, coconut milk, margarine or butter, and fruits containing high fat, such as durian and avocado fruits, also affect uric acid expenditure.

3.3.6 Relationship between Sport Activity and Gout Incidence

The study results in Table 3 show that the 15 respondents who did sports had high uric acid levels. The results of the bivariate analysis showed that there was a relationship between exercise and uric acid levels (p-value 0.00), similar to the effects of previous studies at the Tanjungsari Pacitan Health Center, which showed that there was a relationship between exercise and the incidence of gout arthritis (p<0.001). This incident was explained by Aspiani (2014) that activities carried out by humans are related to uric acid levels in the blood. Physical activity such as sports or physical movement will reduce the excretion of

uric acid and increase the production of lactic acid in the body. The results of the research reported by Mayers (2003) and cited by Fauzan (2016) show that strenuous activity can exacerbate gout or uric acid disease, which is characterized by increased uric acid levels in the blood. Exercise or physical movement will cause an increase in lactic acid levels. An increase in lactic acid in the blood will cause a decrease in uric acid excretion by the kidneys. The increase in lactic acid levels cannot be measured with certainty because we cannot be sure when the body's muscles contract anaerobically. This is why activity does not significantly affect uric acid levels in the blood.

IV. CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

Based on the results of research and discussion, it can be concluded, namely as follows:

- 1) The number of respondents with urate levels is classified as consisting of 9 males sex (21.40%) and only six female respondents (14.28%).
- 2) Types of food that affect the incidence of high uric acid are seafood, organ meats and nuts.
- 3) Sport activities can also cause high uric acid events.

4.2 Suggestion

It is necessary to carry out further research that is carried out in more detail and depth by involving many respondents, especially on the factors that most influence the incidence of gout.

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Acute Gastric Ulcer with Massive Upper Gastrointestinal Hemorrhage: An Autopsy Case Report

Kinako Sam Ewune¹, Izein Narugayam Claudius²

¹Department of Anatomical Pathology, Rivers State University, Nkpolu-Oroworukwo, P.M.B 5080, Port Harcourt, Rivers State, Nigeria

²Department of Anatomical Pathology, Federal Medical Centre, P.M.B 502, Yenagoa, Bayelsa State, Nigeria

*Corresponding Author

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Abstract— *The case fatality rate of acute gastric ulcer with massive upper gastrointestinal hemorrhage is high. We report a case of a 50-year-old male who admitted due to bleeding per urethra after he pulled out his catheter. He was managed for acute retention of urine secondary to benign prostatic enlargement but unfortunately, he was self-administering ibuprofen without the knowledge of his physicians. He started passing massive dark blood per rectum few minutes before he was certified dead. The autopsy examination showed massive gastrointestinal hemorrhage, acute gastric ulcer, shocked kidneys and benign prostatic enlargement.*

Keywords— *Autopsy, acute gastric ulcer, massive upper gastrointestinal bleeding.*

I. CASE REPORT

A 50-year-old male presented at the Emergency unit with complaint of bleeding per urethra of a day duration after he pulled out his catheter. He was catheterized two weeks prior to presentation due to acute retention of urine secondary to benign prostatic enlargement in the same Hospital.

On clinical examination, he was a middle-aged man, conscious in time, person and place. He was not in any obvious distress. He was mildly pale, anicteric and had no pedal oedema. He was afebrile and with a pulse rate of 85bpm (Reference Value {RV} 85-145bpm). His blood pressure was 110/70mmHg and with a respiratory rate of 18 cycles per minute (RV: 12-20 per minute). The abdomen moved with respiration and was not tender. The liver and spleen were not palpable and the kidneys were not ballotable. Other systems were essentially normal.

His laboratory work-up disclosed hemoglobin of 8g/dl (RV:11.5-16.5g/dl), leukocytes of $16.12 \times 10^9/L$ (RV:3.5 – 10.0 x 10⁹/L), platelet count of $157 \times 10^9/L$ (RV:100 – 400 x 10⁹/L), serum sodium of 142.6mmol/L (RV:135 – 155mmol/L), serum chloride of 101.8mmol/L (RV: 96 – 110 mmol/L), serum potassium of 3.8mmol/L (RV: 3.5 – 5.4mmol/L), serum creatinine of 78.2mmol/L (RV: 60 – 120mmol/L), serum urea of 3.7mmol/L (RV: 2.5 – 6.5 mmol/L). His urine culture and sensitivity revealed *Escherichia coli* organisms.

He received antibiotics, intravenous fluids and a pint of blood while he was hospitalized. His caregiver revealed he was on self-administered tablets of ibuprofen and at about thirty hours after admission, he passed massive dark blood per rectum and he was found to be severely pale. His hemoglobin was 6g/dl (RV:11.5-16.5g/dl). He was noticed to be gasping for breath and efforts at resuscitation was unsuccessful. He was certified dead 10 minutes after passing massive dark blood per rectum and the body was sent to the morgue for autopsy. He was managed as a case of urosepsis on a background benign prostatic enlargement and upper gastrointestinal hemorrhage.

II. AUTOPSY FINDINGS

The corpse weighed 65kg and measured 170cm in length, the body mass index is 22.5kg/m and during the external examination he is severely pale and jaundiced. The internal examination revealed no pneumothorax and all the internal organs are in their

normal position. The oral cavity and the oesophagus appear normal. The stomach contains a litre of blood mixed with friable reddish-tan coloured material. The mucosa appear grossly normal except in the antrum which shows a sharply demarcated ulcer with widest diameter measuring 1.2cm (see figure 1).

The floor is yellowish to reddish-brown in areas. The surrounding tissues appear red. The entire lumen of both small and large intestine contains about 2 litres of altered blood mixed with faeces. The small and large intestine shows no mucosal lesions grossly.

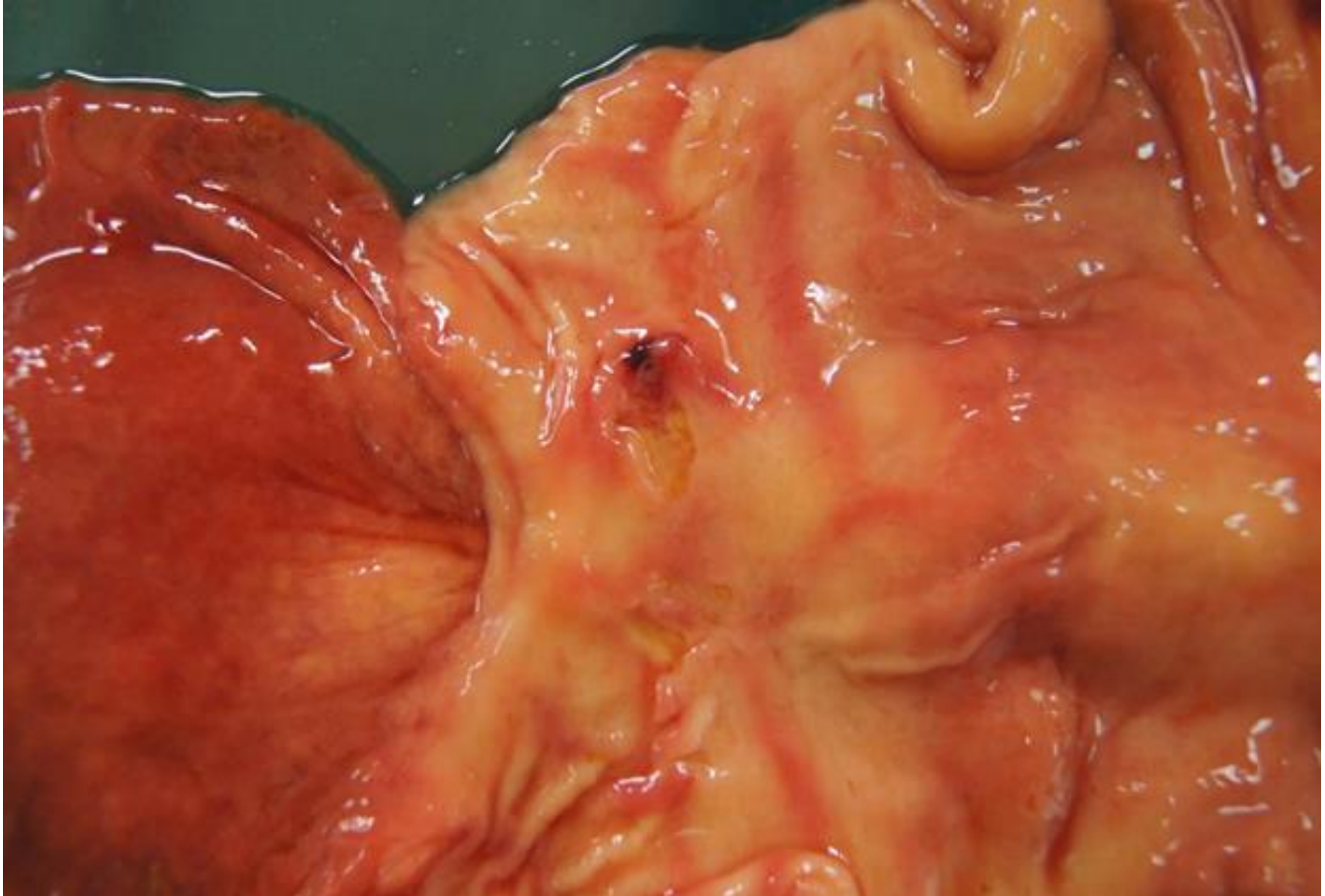


FIGURE 1: Showing a sharply demarcated antral ulcers.

The right kidney weighs 130gms while the left kidney weighs 120gms (normal is 120 -160gms). The capsules of both kidneys strip with ease and revealed a smooth and pale cortical surface. The cut surfaces of both kidneys show cortical pallor and a congested medulla. The cortical thickness of 7mm on the right and 8mm on the left (RV for each kidney: 7.0 –10.0mm). The medulla of both kidneys is similar and show normal appearing papillae and some adipose tissue within the hilum. The pelvicalyceal system of both kidneys appear normal. The ureter of both kidneys appears normal and empty into the bladder at the trigone bilaterally. The urinary bladder and urethra are essentially normal. The renal arteries show no stenosis. The prostate lies beneath the bladder and weighs 50gms (normal is 25 – 30gms). The cut surface is tan-white with well circumscribed nodules. The testes are normal and are in their normal anatomical positions. Other organs appear normal.

His histology from the stomach revealed mucosal ulceration. There are moderate to severe acute inflammatory cell infiltration of the subserosa, muscularis propria and the serosa. These features are consistent with an acute gastric ulcer. The histology of the right and left kidneys is similar and revealed patchy areas of necrosis of the tubular epithelial cells and eosinophilic cast in some of the tubules (see figure 2 & 3). The glomeruli, interstitium and vessels appeared normal. These features in the right and left kidney are consistent with acute tubular necrosis.

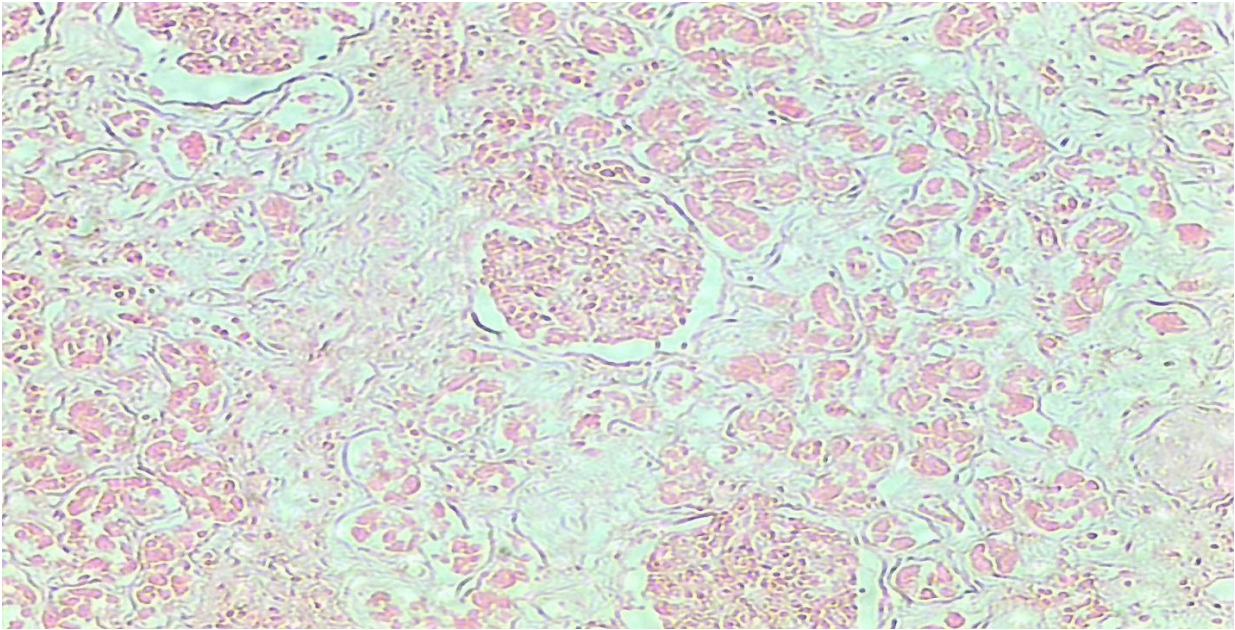


FIGURE 2: Photomicrograph of the left kidney showing acute tubular necrosis (H&E, 400x)

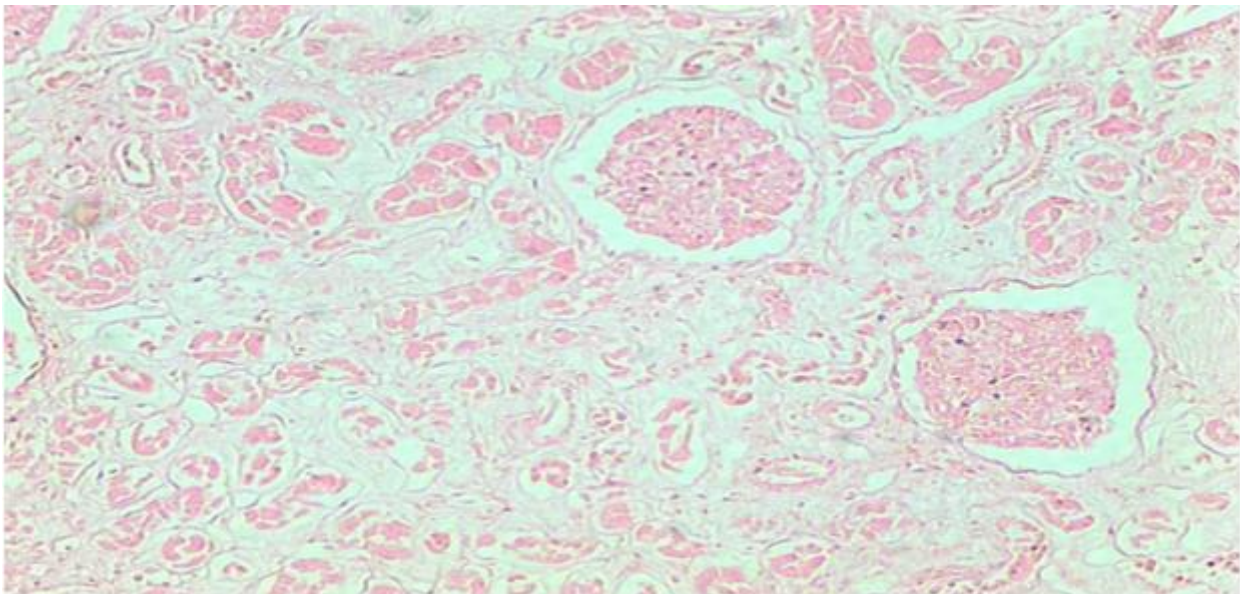


FIGURE 3: Photomicrograph of the right kidney showing acute tubular necrosis (H&E, 400x)

The histology from the prostate shows variably sized glands arranged in nodular pattern. These glands contain corpora amylacea and lined by double layers of epithelial cells. These features are consistent with benign nodular hyperplasia. The histology of other organs revealed a normal morphology. The finding from the autopsy point towards massive upper gastrointestinal hemorrhage due to acute gastric ulcer.

III. DISCUSSION

In most cases, the post mortem finding of active gastric ulcer is usually a terminal event and this case is not contrary. It illustrates a fatal outcome of acute gastric ulcer in a middle-aged patient. The patient was been managed for acute retention of urine and ended up passing massive dark blood per rectum which was discovered few minutes before he was certified dead.

Acute gastric ulcer may also be seen during any debilitating illness, in sepsis, following surgery or trauma (stress ulcer), in patients with central nervous system injury or disease (Cushing's ulcer), as a complication of long-term steroid therapy (steroid ulcer), in association with aspirin ingestion, in patients with excessive burns (curling ulcer), as a complication of radiation therapy or hepatic arterial chemotherapy and following the introduction of tubes into the stomach.^{1,2,3,4,5} Also non-steroidal

anti-inflammatory drugs may also predispose to acute gastric ulcer⁶ as was seen in this case. He was on self-administered tablet Ibuprofen which may have contributed to the onset and progression of the acute gastric ulcer either by any of or a combination of any of these mechanisms; 1) irritant effect on the gastric epithelial. (2) Impairment of the barrier of the mucosa. (3) Suppression of gastric prostaglandin synthesis. (4) Reduction of the gastric mucosal blood flow and interference with the repair of superficial injury.

The clinical history of passage of massive dark blood from the rectum shortly before he was certified died is consistent with the post mortem findings revealing a gastric ulcer located in the antrum. The post mortem findings revealing benign nodular hyperplasia is consistent with his history of retention of urine relieved by urethral catheterization. He died from massive upper gastrointestinal tract hemorrhage due to acute gastric ulcer.

IV. CONCLUSION

Acute gastric ulcer may become complicated due to massive gastrointestinal hemorrhage. In such scenarios the fatality rate is high and it carries ominous prognostic implication. The patient was admitted into the hospital, but he was self-administering non-steroidal anti-inflammatory drugs. This case highlights the importance of continuous and vigilant drug history review among patients on admission in a health facility. The postmortem examination was essential to clarify the cause of death.

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Acute Pyogenic Meningitis: An Autopsy Case Report

Kinako Sam Ewune^{1*}, Izein Narugayam Claudius², Wala kelachi Thankgod³,
Solomon Obioha⁴

¹Department of Anatomical Pathology, Rivers State University, Nkpolu-Oroworukwo, P.M.B 5080, Port Harcourt, Rivers State, Nigeria

²Department of Anatomical Pathology, Federal Medical Centre, P.M.B 502, Yenagoa, Bayelsa State, Nigeria

³Department of Chemical Pathology, Rivers State University, Nkpolu-Oroworukwo, P.M.B 5080, Port Harcourt, Rivers State, Nigeria

⁴Department of Anatomical Pathology, Rivers State University, Nkpolu-Oroworukwo, P.M.B 5080, Port Harcourt, Rivers State, Nigeria

*Corresponding Author

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Abstract— *Acute pyogenic meningitis may be complicated by tonsillar herniation and this makes the clinical management of the patient very arduous and may lead to death. We report a case of a 13-year-old female admitted to the children emergency unit due to meningitis secondary to lobar pneumonia. The autopsy showed central cyanosis, lobar pneumonia, cerebral oedema, exudate around the brain, cerebral oedema and tonsillar herniation. Brain smear revealed numerous gram-positive cocci in chains. The cause of death was tonsillar herniation secondary to acute pyogenic meningitis.*

Keywords— *Autopsy, lobar pneumonia, acute pyogenic meningitis, cerebral oedema, tonsillar herniation.*

I. CASE REPORT

A 13-year-old-female who was admitted to the Emergency ward with complaints of non-paroxysmal cough, difficulty in breathing and fever of a week duration. She also complaint of headache of two days duration and loss of consciousness of a day duration. There is no history of trauma.

She was acutely ill-looking, anicteric, moderately pale and with central cyanosis. Her neck was stiff and her respiratory rate was 14cpm (20-25 breaths/minute), pulse rate 66bpm (75-110bpm), temperature 39 degrees celcius (35.9-37.6° Celcius) and blood pressure was 140/100mmHg. She was unconscious and with a glassgow coma scale of 4/15(eye opening=1, best motor response=2, best verbal response=1). She was in marked respiratory distress. There was reduced air entry over the lung fields and few basal crepitation which were more prominent over the left lungs. Physical examination of other systems was normal.

The laboratory work up revealed a hemoglobin of 9.0g/dl (Reference Value {RV}: 11.5-16.5g/dl). Her random blood sugar was 8.0mmol/l (RV: below 11.1mmol/l). Her thick and thin blood film for malaria parasite was negative.

She received start doses of intravenous mannitol, ceftriazone, paracetamol and artesuanate. She was intubated and placed on mechanical ventilation. She also received intranasal oxygen. Her clinical condition kept on deteriorating and with a glasgow coma scale of 3/15. Her respiration was also deteriorating and she was gasping for air. She was noticed to have stopped breathing about 90 minutes after admission and despite attempts at resuscitation. She was certified dead and her body was moved to the morgue for autopsy. She was managed as a case of meningitis on background lobar pneumonia.

II. AUTOPSY FINDINGS

The corpse weighed 28kg and measured 140cm in length, the body mass index is 14.3kg/m. Her mid-upper arm circumference is 12.5cm. She is anicteric, mildly pale and with central cyanosis. The external ear appear normal. There is no lymphadenopathy and no oedema. Her external genital appear normal and the internal examination revealed no pneumothorax and all organs are in their normal anatomical positions. The pleural, pericardial and peritoneal cavities appear normal. The laryngeal cartilage, hyoid bone and soft tissues of the neck are normal. The mucosa of the oropharynx, nasopharynx, laryngopharynx, trachea and

bronchi are normal. The right lungs weigh 180gms (RV: 170-180gms) the cut surface appear normal. The left lungs weigh 220gms (RV: 160 – 170gms). The cut surface of the lower lobe is reddish-brown, firm, friable and appears liver- like consistency (red hepatization). There is also scattered fibrinous exudate on the cut surface (figure 1).

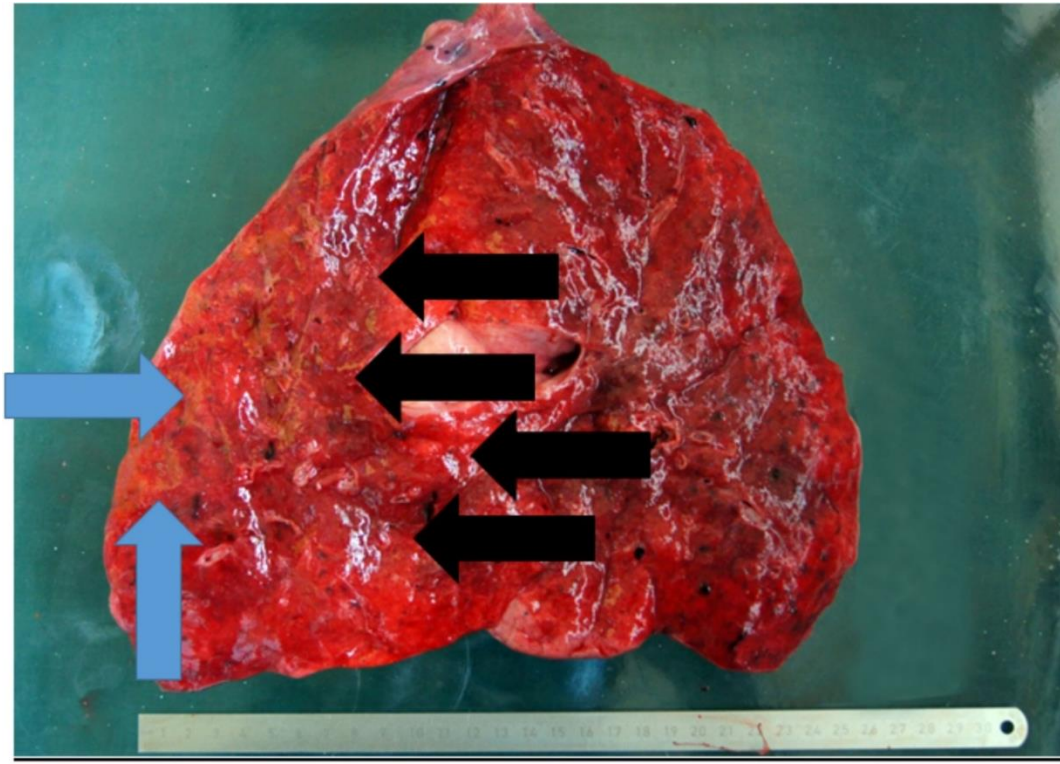


FIGURE 1: Showing the cut surface of the right lungs; (a) the blue arrows show areas with fibrinous exudate. (b) the black arrows show areas with red hepatization.

The scalp, skull and dura are normal. The brain weighs 1400gms (RV: 1260 – 1300gms). The leptomeninges were opaque in arrears and is due to the presence of a whitish-yellow exudate (figure 2).

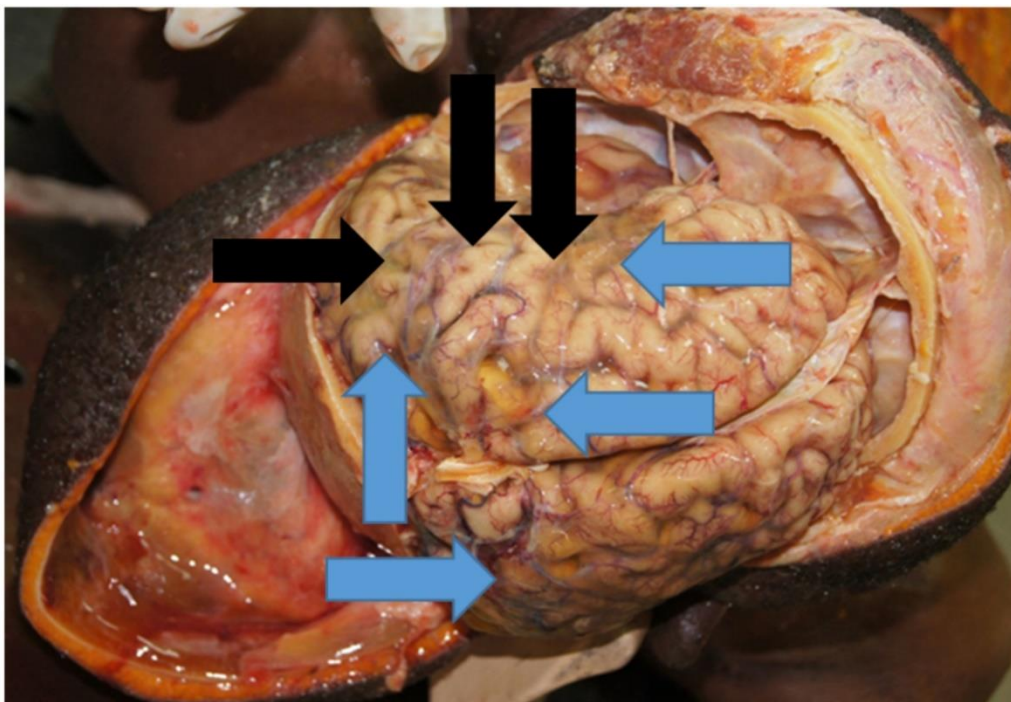


FIGURE 2: (a) blue arrow; Showing opaque meninges due to the presence of a whitish–yellow exudate. (b) black arrow; showing widened of the gyri and some of the gyri appear flat.

There are also engorged vessels in the leptomeninges. There are areas showing narrowing of the cerebral sulci and widened of the gyri. Some of the gyri appear flat (see figure 2) and this is due to the persistent compression of that part of the cerebrum on the skull. The serial coronal sections of the cerebrum revealed seepage of fluid from the cut surface and easily stripped leptomeninges from the surface of the cerebrum. The gray and white matter show no other lesions or hemorrhage. There are whitish-yellow exudate and blood clots around the brain stem (figure 3).

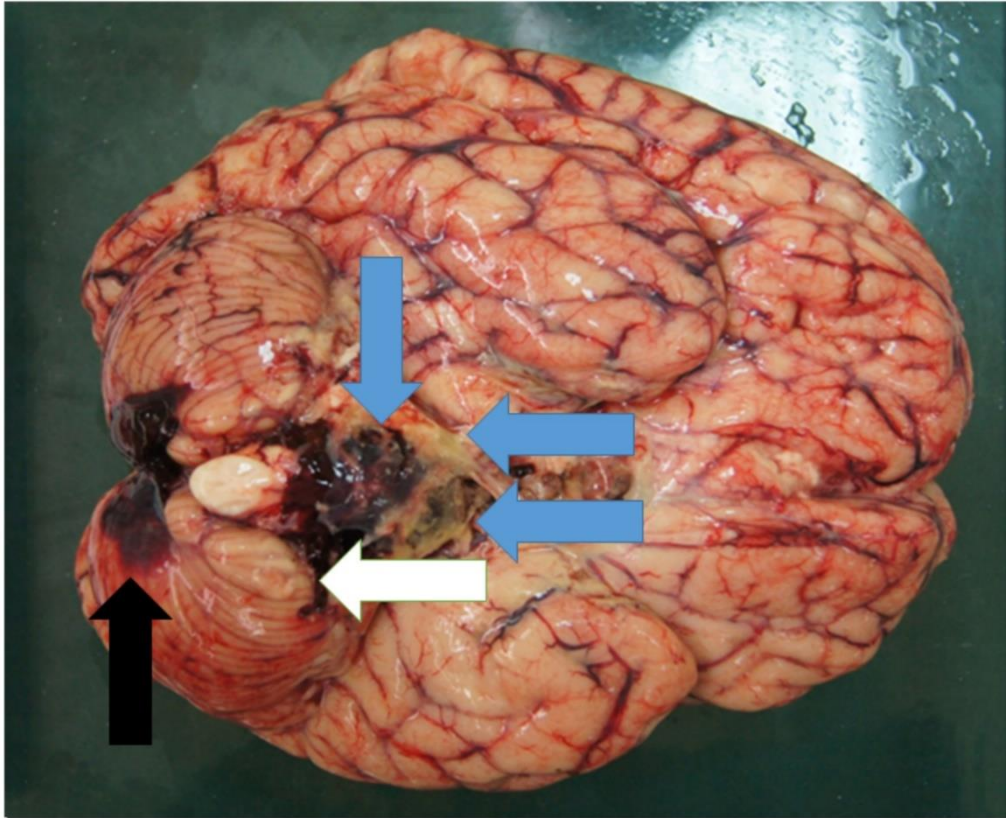


FIGURE 3: His brain. (a) blue arrows; showing whitish-yellow exudate and blood clots around the brain stem. (b) black arrow; showing blood clots around the posterior aspect of the cerebellum. (c) white arrow; showing a groove seen on cerebellar tonsils.

The serial cut sections through the brain stem show no lesions on gross. There are blood clots around the posterior aspect of the cerebellum. There is also a groove around the cerebellar tonsils (this is suggesting cerebellar tonsillar herniation). The serial cut sections through the cerebellum show normal gray and white matter differentiation. The vessels that form the arterial circle of Willis and the internal carotid arteries appear normal. The spinal cord has been not examined.

The right and the left middle ear and inner ear show no lesions on gross. The paranasal sinuses appear normal. The peripheral nerves were exposed during routine dissections and appear normal. Other organs appear normal.

The histology of the left lungs shows massive confluent exudation with neutrophils and red cells filling the alveolar spaces. The alveolar wall shows congested blood vessels. The histology of right lungs shows normal alveoli spaces and wall. These features are consistent with lobar pneumonia of the left lung. The cerebrum shows neuronal cell body within an eosinophilic fibrillary background. There is widening and aggregates of neutrophils in the Virchow-robin's perivascular space. There are abundant neutrophils and exudates within the meninges. The histology of the brainstem shows neutrophils and exudates within the overlying meninges. The histology of the midbrain and the pons show few congested vessels. The histology of the medulla oblongata shows numerous congested vessels, areas of hemorrhage and necrosis. The histology of the cerebellum show neutrophils within the overlying meninges. There are congested vessels. These features are consistent with cerebral oedema, meningitis and suggesting tonsillar herniation. The histology of other organs is essentially normal. The brain smear stained with gram stain show numerous gram positive cocci in chains. The brain smear stained with haematoxylin and eosin stain is hypercellular and show aggregates of neutrophils within a background of amorphous eosinophilic materials. These features are consistent with purulent exudate. The findings from the autopsy points towards tonsillar herniation due to acute pyogenic meningitis as the cause of death.

III. DISCUSSION

The case herein describes a fatal outcome of acute pyogenic meningitis in a thirteen-year-old female. Acute pyogenic meningitis remain a devastating disease¹ and it is still responsible for substantial morbidity and mortality in both developing and developed countries.^{2,3} The mortality rate is approximately 5%, and the long-term morbidity, mainly consisting of persistent neurological sequelae, is fifteen percent.³

Her clinical history, revealing cough and difficulty in breathing correlates with the post mortem finding revealing consolidation in the left lower lobe. Also, the history of convulsion is consistent with the post mortem findings revealing meningitis, cerebral oedema and tonsillar herniation.

The presence of bacteria within the meninges can induce inflammation and subsequently lead to increased intravascular permeability and disruption in the blood brain barrier. This will eventually lead to an increase in the brain volume (cerebral oedema) as was seen in the index case. Also, persistent an increase in the volume of the brain beyond the limit permitted may cause compression of veins, reduce perfusion of the brain and displacement of cerebrospinal fluid which will eventually lead to an increase in the intracranial pressure. If this is not properly managed as was seen in the index case. This raise in pressure within the fixed capacity of the skull may commute into displacement of some parts of the brain through the openings within the skull (herniation) as was seen in this case. The index case illustrates tonsillar herniation which is a life-threatening event because there is compression of brainstem and also compromise of the vital respiratory and cardiac centers in the medulla oblongata.

IV. CONCLUSION

Acute pyogenic meningitis may lead to death, especially in the presence of a fatal complication like tonsillar herniation which obviously played key role in the demise of the patient. The autopsy was essential to clarify the cause of death in this young patient.

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A Study to Assess the Effectiveness of Self-Instructional Module on Knowledge regarding HIV/AIDS among Barbers in Selected Saloons of Haridwar

Kamlesh Singh¹, Dr. Vikas Choudhary²

¹PG Nursing Tutor, College of Nursing, Theerthanker Mahaveer University, Moradabad

²Professor cum Ph D Supervisor, Seedling School of Nursing, Jaipur National University, Jaipur

*Corresponding Author

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Abstract— *The objectives of the study are:*

1. To assess the pre-test knowledge score regarding HIV/AIDS among Barbers at selected Saloons of Haridwar.
2. To assess the post test knowledge score regarding HIV/AIDS among Barbers at selected Saloons of Haridwar.
3. To compare pre-test and post-test score regarding knowledge about HIV/AIDS among Barbers after administering SIM at selected Saloons of Haridwar.
4. To find out the effectiveness of SIM on knowledge regarding HIV/AIDS among Barbers at selected Saloons of Haridwar.
5. To determine the association between selected demographic variables and pre-test knowledge score of Barbers regarding HIV/AIDS among Barbers at selected Saloons of Haridwar.

Keywords— *HIV/AIDS among barbers, HIV/AIDS in Haridwar saloon.*

I. INTRODUCTION

1.1 Background of the study:

Health was defined as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity". Human immunodeficiency virus (HIV) is a lentivirus (a member of the retrovirus family) that causes acquired immunodeficiency syndrome (AIDS), a condition in humans in which the immune system begins to fail, leading to life-threatening opportunistic infections. Infection with HIV occurs by the transfer of blood, semen, vaginal fluid, pre-ejaculate, or breast milk. Within these bodily fluids, HIV is present as both free virus particles and virus within infects immune cells. The four major routes of transmission are unsafe sex, contaminated needles, breast milk, and transmission from an infected mother to her baby at birth (perinatal transmission). Screening of blood products for HIV has largely eliminated transmission through blood transfusions or infected blood products in the developed world.

Human immunodeficiency virus (HIV) the agent responsible for causing AIDS is known to be transmitted from one person to another through the use of non-sterile needles, syringes and other skin piercing equipment such as blades and scissors. Proper sterilization of all such instruments is therefore important in order to prevent HIV transmission. Fortunately, HIV is very sensitive to standard methods of sterilization. However, barber's shop is a place where there is frequent use of the same blade, trimmers and scissors, often without proper sterilization or disinfection. The use of these sharp instruments may represent an HIV hazard to the general population due to skin piercing injuries. In India, two types of barber shops are available; one is the road side barber where there is no proper infrastructure and other is an enclosed shop. Hence the present study was carried out to assess the awareness and reported practices of barbers with respect to HIV and also to see if there were any differences based on the type of shop.

1.2 Need for the study:

National AIDS Control Policy (1999e2004) of India has recognized AIDS as not “merely a public health challenge,” but also a political and social development issue.¹ By doing so, National AIDS Control Organization (NACO) has officially recognized that the epidemic has moved from vulnerable or ‘high risk’ groups to the general population. This has occurred through the various modes of transmission, one of which may be through the cuts and abrasions at the much neglected barbers shop. One goal of the policy has therefore been to ensure the safe use of sharp equipments. The barbers shop is a place for the regular visit by people from all the sections of the society including those from high-risk behavior group for HIV like laborers, rickshaw-pullers, truck-driver, migrants and slum dwellers. It therefore serves as a conglomeration place for the transmission of various infections.⁶ Though many studies related to knowledge, attitude and practices and their effect on HIV transmission have being conducted among various sectors of society, little attention has been paid to the profession of hair cutting and the use of sharp equipments in the profession of barbering.

There were approximately 37.6 million people across the globe with HIV in 2020. Of these, 35.9 million were adults and 1.7 million were children (<15 years old). An estimated 1.5 million individuals worldwide acquired HIV in 2020, marking a 30% decline in new HIV infections since 2010. (New HIV infections, or “HIV incidence,” refers to the estimated number of people who newly acquired the HIV virus during given period such as a year, which is different from the number of people *diagnosed* with HIV during a year. (Some people may have HIV but not know it.

II. METHODOLOGY

2.1 Research Approach

Research approach is an important element of the research design which governs the research study. A research approach tells the researcher what data to collect and how to analyse it. It also suggests possible conclusions to be drawn from the data. Evaluative research is an applied form of research that involves finding out how well a programme, practice or policy is working. Its goal is to assess or evaluate the success of the programme. In view of the nature of the problem, to accomplish the objectives and to test hypotheses, an evaluative research approach was used for this study. The main goal is to evaluate the effectiveness of self instructional module on knowledge regarding HIV/AIDS among barbers.

2.2 Research Design

Research design is the framework or guide used for the planning, implementation and analysis of a study. Research design basically provides an outline of how the research will be carried out and the methods that will be used.

In the present study, pre-experimental (One group pre- test and post-test research design) was selected to assess the effectiveness of self instructional module on knowledge regarding HIV/AIDS among barbers in selected saloons at Haridwar”.

2.3 Population

The population is referred to as the entire set of individuals having the common characteristics. In this study accessible population are all the Barbers residing in Haridwar.

2.4 Sample Size

Sample size was 60 Barbers living in Bhadrabad, Haridwar.

2.5 Sampling technique

The investigator planned deliberately to select Barbers in selected rural area, Haridwar, who were available during the time of data collection and who fulfill the inclusion criteria. Sample in this study were selected by using Purposive Non-Probability sampling technique.

2.6 Sampling Criteria

2.6.1 Inclusion criteria:

The study includes the

- Barbers residing in rural areas of Haridwar.
- Barbers who are available at the time of study.
- Barbers who are willing to participate in the study.
- Barbers who can read and write.

2.6.2 Exclusion criteria:

The study excludes the

- Barbers who are not willing to participate.
- Barbers who are not available at the time of study

2.7 Spearman Brown's prophecy formula:

$$r_{1/2} = N \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[(N \sum X^2 - (\sum X)^2)(N \sum Y^2 - (\sum Y)^2)]}}$$

The reliability co-efficient of the scale was found to be 0.87 revealing the tool is feasible for administration for the main study. Since the level of knowledge co-efficient for the scale $r > 0.70$, the tool was found to be reliable and feasible for conducting the study.

2.8 Development of Self Instructional Module:

The following steps were adopted to prepare the self instructional module:

- Development of content blue print.
- Preparation of final draft of self instructional module.
- Content validity of draft of self instructional module.
- Description of self instructional module.

III. RESULTS

This chapter deals with the analysis and interpretation of data collected from 60 samples of Barbers at selected Saloon area of Haridwar to assess the effectiveness of Self instructional module on knowledge regarding HIV/AIDS and to determine the association between their knowledge with their selected demographic variables. The data was computed for analysis. Entire data transferred to master data sheet, tabulated and analyzed. Manual, MS Excel and Graph Prism package were used to analyze the data. The data was analyzed according to the stated objectives and hypothesis of study by using descriptive and inferential statistics.

3.1 Hypothesis

3.1.1 P- value will be tested at the level of significance .05

H1:- There is significant difference between the pre and post-test knowledge score among Barbers regarding vaginal candidiasis.

H2:- There is significant association between the pre-test knowledge score with their selected demographic variable.

3.1.2 Description of the Socio demographic variables of the subjects.

It deals with demographic data which consists of 08 items to collect the sample characteristics, which comprises Age in years, Duration of marriage, Education status of Barbers, Religion of Barbers, Category of work, family income, years of service, source of information (HIV/AIDS and its prevention).

TABLE 1
DISTRIBUTION OF BARBERS ACCORDING TO AGE (N=60)

Age in years	Frequency	Percentage (%)
18-24 yrs	11	18.3 %
25-31 yrs	23	38.3 %
32-38 yrs	20	33.3 %
39-40 yrs	06	10.0%
Total	60	100%

Table-1 shows the distribution of Barbers according to age. The data revealed that 23 (38.3%) were in the age group of 25-31 years followed by 20 (33.3%) were in the age group of 32-38 years, 11 (18.3%) were in the age group of 18-24 years and 06(10%) were in the age group of 39-40 years.

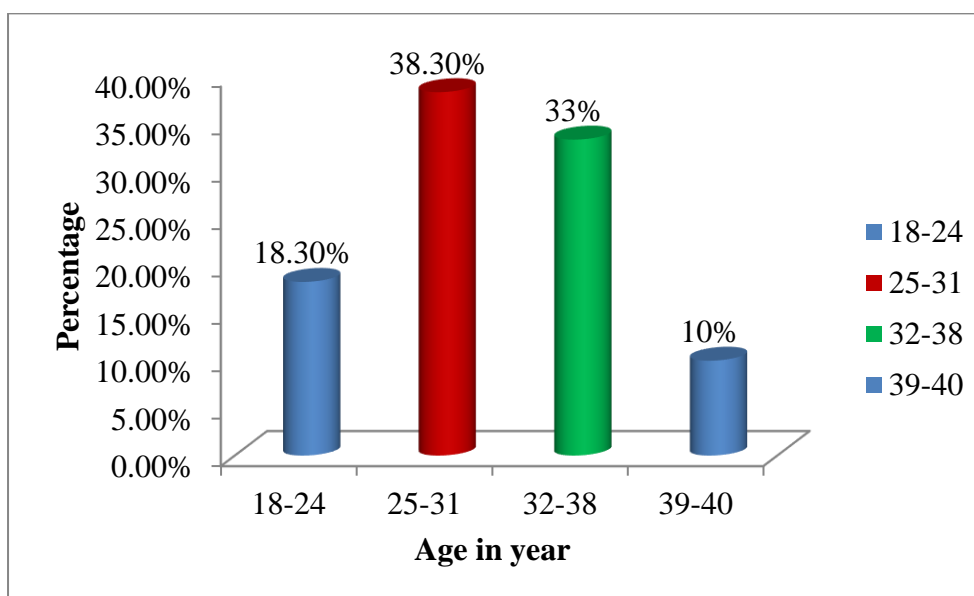


FIGURE 1: Distribution of Barbers by age

TABLE 2
DISTRIBUTION OF BARBERS ACCORDING TO DURATION OF MARRIAGE (N=60)

Duration of marriage	Frequency	Percentage (%)
1-4 years	28	46.7%
5-8 years	20	33.3%
8-11 years	07	11.7%
Above 11 years	05	8.3%
Total	60	100%

3.2 Findings related to level of pre-test and post-test knowledge regarding HIV/AIDS among Barbers

TABLE 09
FINDING RELATED TO KNOWLEDGE LEVEL (N=60)

Sl. No	Area wise	Score	Pre-test		Post-test	
			F	%	F	%
1.	Inadequate knowledge	0-17	41	68.33%	0	0%
2.	Moderate knowledge	18-26	19	31.67%	14	23.33%
3.	Adequate knowledge	19-35	00	00%	46	76.67%
Total			60	100%	60	100

Table 09 depicts that majority 41 (68.33%) of the Barbers had inadequate knowledge, 19 (31.67%) had moderate knowledge and none of them had adequate knowledge towards HIV/AIDS in pre-test knowledge. Majority 46 (76.67%) of the Barbers had adequate knowledge, 14 (23.33%) had moderate knowledge towards HIV/AIDS in post-test knowledge.

3.3 Findings related to compare the pre test and post test level of knowledge regarding HIV/AIDS among Barbers

TABLE 10
COMPARISON OF OVERALL KNOWLEDGE SCORE (N=60)

Area of Knowledge	Pre-test		Post test		Mean % Enhancement
	Mean score	Mean %	Mean score	Mean %	
Over all	7.97	31.88%	19.32	77.28%	45.4%

Table 10 shows the comparison between pre-test and post-test knowledge score of Barbers regarding HIV/AIDS. It was observed that pretest mean percentage score was 31.88 and post test mean percentage score was 77.28 which shows that the overall enhancement was 45.4%, Hence, the research hypothesis H_1 stated that there is significant difference between the pre and post-test knowledge score among Barbers regarding HIV/AIDS is accepted and null hypothesis is rejected.

3.4 Findings shows the effectiveness of Self instructional module on knowledge of HIV/AIDS among Barbers.

TABLE 11
EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE OF BARBERS REGARDING HIV/AIDS (N=60)

Component	Group	Mean	Mean difference	Standard deviation	't' value
Overall	Pre-test	7.97	11.35	1.583	38.753 Df=59
	Post-test	19.32		2.013	

*- Significant at 0.05 level

Table 11 represents the aspect wise knowledge mean of Barbers regarding HIV/AIDS. The results showed the enhancement of knowledge with an overall enhancement of mean score i.e 11.35.

The 't' test value was observed and showed a significant in all the aspect of knowledge area. The combined 't' test value was significant i.e 38.753 at $P < 0.05$ level. Which indicate Self-instructional module was effective in improving knowledge of the Barbers regarding the HIV/AIDS.

3.5 Deals with association between selected demographic variables with pre test knowledge of HIV/AIDS among Barbers.

TABLE 12

ASSOCIATION BETWEEN SELECTED DEMOGRAPHIC VARIABLES WITH PRE TEST KNOWLEDGE LEVEL (N=60)

Variable	Inadequate	Moderate	Adequate	Chi-square value Df	P value	Inference
Age in year						
18-24	8	3	0	1.109 Df=3	0.775	NS
25-31	14	9	0			
32-38	15	5	0			
39-40	4	2	0			
Total	41	19	0			
Duration of marriage						
1-4 years	16	12	0	4.016 Df=3	0.26	NS
5-8 years	16	4	0			
8-11 years	6	1	0			
Above 11 years	3	2	0			
Total	41	19	0			
Educational status of Barbers						
Higher secondary education	1	1	0	2.352 Df=3	0.503	NS
Secondary education	12	4	0			
Primary education	25	14	0			
Illiterate	3	0	0			
Total	41	19	0			
Religion						
Hindu	19	5	0	3.89 Df=3	0.274	NS
Muslim	13	8	0			
Christian	2	0	0			
Others	7	6	0			
Total	41	19	0			
Category of work						
Attender	18	12	0	4.39 Df=2	0.111	NS
Skilled	20	4	0			
Unskilled	3	3	0			
Others	0	0	0			
Total	41	19	0			
Family income						
<5000	1	1	0	7.409 Df=3	0.06	NS
5000-10000	0	2	0			
11000-15000	6	0	0			
>15000	34	16	0			
Total	41	19	0			

Years of Service						
1-3 years	38	18	0	3.554 Df=2	0.169	NS
4-6 years	0	0	0			
7- 9 years	3	0	0			
Above 10 years	0	1	0			
Total	41	19	0			
Sources of information						
No source of information	26	9	0	2.559 Df=4	0.407	NS
Television	2	0	0			
Peer Group	7	4	0			
Internet	5	4	0			
Others	1	2	0			
Total	41	19	0			

*Significant at 0.05 level.

S = Significant, NS = Not – Significant

Table No. 12 depicts that the obtained chi – square value for Age ($\chi^2 = 1.109$, $p > 0.05$), Duration of marriage ($\chi^2 = 4.016$, $p > 0.05$), Educational status of Barbers ($\chi^2 = 2.352$, $p > 0.05$), Religion of Barbers ($\chi^2 = 3.890$, $p > 0.05$), Category of work ($\chi^2 = 4.390$, $p > 0.05$), family income ($\chi^2 = 7.409$, $p > 0.05$), Years of service ($\chi^2 = 3.554$, $p > 0.05$), and Source of information ($\chi^2 = 2.559$, $p > 0.05$) shows no significant association between Knowledge of Barbers regarding HIV/AIDS. Hence, the research hypothesis H_2 stated that there is significant association between the pre-test knowledge score with their selected demographic variable is rejected and null hypothesis is accepted.

IV. DISCUSSION

A report of findings is never sufficient to convey their significance. The meaning that researchers give to results plays a rightful and important role in the report. The discussion section is devoted to a thoughtful and insightful analysis of the finding, leading to a discussion of their clinical and theoretical utility.

This chapter deals with the discussions in accordance with the objectives of the study and hypothesis. The statement of the problem was a study to assess the effectiveness of self instructional module on knowledge of HIV/AIDS among Barbers in selected saloons, Haridwar.

V. CONCLUSION

Majority 41 (68.33%) of the Barbers had inadequate knowledge, 19 (31.67%) had moderate knowledge and none of them had adequate knowledge towards HIV/AIDS in pre-test knowledge. Majority 46 (76.67%) of the Barbers had adequate knowledge, 14 (23.33%) had moderate knowledge towards HIV/AIDS in post-test knowledge.

The results showed the enhancement of knowledge with an overall enhancement of mean score i.e 11.35.

The 't' test value was observed and showed a significant in all the aspect of knowledge area. The combined 't' test value was significant i.e 38.753 at $P < 0.05$ level. Which indicate Self-instructional module was effective in improving knowledge of the Barbers regarding the HIV/AIDS.

The comparison between pre-test and post-test knowledge score of Barbers regarding HIV/AIDS. It was observed that pretest mean percentage score was 31.88 and post test mean percentage score was 77.28 which shows that the overall enhancement was 45.4%.

Hence, the research hypothesis H_1 stated that there is significant difference between the pre and post-test knowledge score among Barbers regarding HIV/AIDS is accepted and null hypothesis is rejected.

The results of chi square analysis presented the obtained chi – square value for Age ($\chi^2 = 1.109$, $p > 0.05$), Duration of marriage ($\chi^2 = 4.016$, $p > 0.05$), Educational status of Barbers ($\chi^2 = 2.352$, $p > 0.05$), Religion of Barbers ($\chi^2 = 3.890$, $p > 0.05$), Category of work ($\chi^2 = 4.390$, $p > 0.05$), family income ($\chi^2 = 7.409$, $p > 0.05$), Years of service ($\chi^2 = 3.554$, $p > 0.05$), and Source of information ($\chi^2 = 2.559$, $p > 0.05$) shows no significant association between Knowledge of Barbers regarding HIV/AIDS.

Hence, the research hypothesis H₂ stated that there is significant association between the pre-test knowledge score with their selected demographic variable is rejected and null hypothesis is accepted.

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