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كلمة السيد عميد كلية الطب دكتور عمر الجيلي يوسف الحاج



اليوبيل الفضي لكلية الطب جامعة النيلين



بسم الله الرحمن الرحيم

والصلاة والسلام علي أشرف المرسلين

زملائي الأعزاء الطلاب والطالبات، ضيوفنا الكرام،

يسعدني ويشرفني أن أقف بينكم اليوم لنحتفي جميعاً بمرور خمسة وعشرين عاماً على تأسيس كلية الطب بجامعة النيلين، هذا الصرح العلمي الشامخ الذي كان ولا يزال منارة للعلم والمعرفة، ومصدراً للفخر والاعتزاز. في هذا اليوم المميز، نجتمع ليس فقط للاحتفال باليوبيل الفضي، بل أيضاً لإطلاق أعمال المؤتمر العلمي الأول للكلية، وهو حدث يعكس التزامنا بالبحث العلمي والابتكار، ويؤكد عزمنا على مواصلة الريادة في مجال التعليم الطبي لقد كان لهذه الكلية دور كبير في إعداد أجيال من الأطباء الأكفاء الذين ساهموا ويساهمون في تحسين صحة الإنسان وخدمة المجتمع في السودان وخارجه. ولم يكن ذلك ليتحقق لولا الجهود المخلصة التي بذلها الرواد المؤسسون، والأساتذة الأفاضل، والكوادر الإدارية والفنية، والطلاب المجتهدون. إن تنظيم هذا المؤتمر العلمي يعكس إدراكنا العميق لأهمية البحث العلمي في تطوير منظومة التعليم الطبي والرعاية الصحية. ونحن نأمل أن يكون هذا المؤتمر فرصة لتبادل الخبرات، ومناقشة الأفكار، وعرض الأبحاث التي ستسهم في تعزيز مكانة كليتنا بين المؤسسات الأكاديمية المرموقة. أود في هذه المناسبة أن أتوجه بجزيل الشكر والتقدير لكل من ساهم في تحقيق هذه الإنجازات، ولكل من شارك في تنظيم هذا الاحتفال والمؤتمر. كما أجدد الدعوة للجميع لمواصلة العمل بجد وإخلاص، من أجل رفعة هذه الكلية، وخدمة المجتمع السوداني، والارتقاء بمستوى التعليم الطبي في بلادنا. ختاماً، أبارك لكم هذا اليوبيل الفضي، وأتمنى لكم مؤتمراً علمياً مثمراً وناجحاً.

والسلام عليكم ورحمة الله وبركاته

د. عمر الجيلي يوسف الحاج

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AI Neelain Medical Journal (NMJ)

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It accepts high quality medical papers written in English language.

NMJ publishes original articles, case reports, letters to editor, commentaries and peer reviewed articles.

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- i. Abstract (Objectives, Materials and Methods, Results and Conclusion). It should not duplicate the introduction.
- ii. Introduction: Statement of the problem or study question.
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All persons designated as authors should qualify for authorship, and all those who qualify should be listed.

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References

References are to be cited according to the Vancouver style of referencing both in the text and the list of references. The number of references should not exceed ten. Relevant and recent references are preferred.

The only accepted references are the published information in accredited documents (Journals, books, official documents whether as hard copies or online).

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Journals

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Manuscripts including tables and figures should be type written double spaced on (17x24 cm) on size A4 paper with margins at least of 2 cm.

One original and two photocopies of the manuscript should be submitted.

Pictures (plain or coloured) may also accompany the manuscript in case they are necessary as clarification means.

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Each manuscript must be accompanied by a covering letter signed by all authors who will appear in the published paper.

Therapeutic and Prophylactic Antibiotic prescription pattern among Sudanese Dentists**Tawassul AbdulRaheem Mohammed¹ MPH, Lamis AbdelGadir Kaddam² PhD**

- 1- Department of community medicine, Faculty of Medicine Al Neelain University Khartoum, Sudan (tawassul.26@gmail.com)
- 2- Department of physiology Faculty of Medicine Al Neelain University Khartoum, Sudan. (lamiskaddam@hotmail.com)

Corresponding author:

Corresponding author: Lamis A. Kaddam email: lamiskaddam@hotmail.com

P.O. Box: 11121 Khartoum 12702 Al-Neelain University

Tel: +2499129797. Fax: +24983794422

Abstract

Background: Dentists prescribe antibiotics for many conditions. Antibiotics prescription becomes an essential aspect of dental practice. Most dental and periodontal diseases are managed by operative intervention and oral hygiene measures. Therefore, indications for systemic antibiotics in dentistry are limited. However, literature provides evidence of inadequate prescribing practices by dentists, which contributes to emergence of antibiotic-resistant bacteria. The aim of this study to investigate practice of antibiotics' prescription among Sudanese dentists.

Methodology: This study was conducted at Khartoum dental teaching hospital in 2017. A Self-administered, structured questionnaire was constructed and distributed to all dental practitioners (195 dentists). Data were computed and analyzed using SPSS 23 software.

Results: 123 questionnaires were filled and returned the response rate 63%. Majority of respondents were females. Thirteen % of respondents received postgraduate education. The most common prescription was the combination of amoxicillin and metronidazole and for patients with allergy to penicillin was erythromycin. 66% used to prescribe antibiotics regularly after extraction. Considerable responders prescribed antibiotics as prophylaxis and for non-clinical factors like unsure of diagnosis, patient expectation of antibiotic and Delay/ unable to complete treatment.

Conclusion: There is overprescribing of antibiotics, as documented earlier in comparable settings. Significant number of the practitioners surveyed prescribe antibiotic prophylaxis for clinical procedures and medical conditions for which there is little evidence.

Key words: Antibiotics, Prescription, General Dental, Sudanese

Background

Antibiotics are agents that inhibits bacterial growth or kills bacteria(1).WHO Global Strategy defines the appropriate use of antimicrobials as “the cost-effective use of antimicrobials which maximizes clinical therapeutic effect while minimizing both drug-related toxicity and the development of antimicrobial resistance”(1). While the rational use of medicines has been defined by the World Health Organization WHO in 1985 as: “requires that patients receive medicines appropriate to their clinical needs, in doses that meet their own individual requirements, for an

adequate period of time and at the lowest cost to them and the community”(2). The choice of antimicrobial should be guided by local or national resistance surveillance data and treatment guidelines. The reality is often far away from this ideal (3). Irrational use of medicines is a global crisis (4). WHO estimates that more than half of all medicines are prescribed, dispensed, or sold improperly and that half of all patients fail to take them appropriately (5). Inappropriate use of antibiotics is one of the key factors underlying the global uprising of antimicrobial resistance, it also reduce the availability of other vital medicines or increase treatment cost(6). Inappropriate prescribing, dispensing practices, and prevalence of self-medication with antimicrobials found to be distressingly high in Sudan. The indicators of rational use of medicines have deteriorated over the past decade even with the implementation of managerial, regulatory and training interventions.(7)

Dentists prescribe between 7% and 11% of all common antibiotics In the UK, for example, dentists accounted for 7% of all community prescriptions of antimicrobials. Alternatively, the National Center for Disease Control and Prevention estimate that approximately one-third of all outpatient antibiotic prescriptions are needless (8).Increasing resistance crises of recent years are probably related to over- or misuse of broad-spectrum agents(1). Nowadays some bacterial species are resistant to the full range of antibiotics presently available. These serious complications associated with antibiotics use have encouraged studies investigating antibiotic prescribing practices of dentists(8).

Several studies were conducted worldwide to assess the knowledge and habits of the dentists towards the antibiotics prescriptions; however, the information available on this issue is scarce. Previous studies reveled the need for urgent review of dental undergraduate and postgraduate education in antibiotic prescribing (9). And provision of prescribing guidelines may improve knowledge and encourage the proper use of antibiotics in dental practices(9).Another one demonstrated a lack of uniformity among the dental practitioners, and recommended dentists should make themselves aware of the current guidelines available, to ensure highest degree of patient care(10).

More common dental infections present in the form of pulpitis and periapical periodontitis, which necessitate only operative measures like fillings, root canal therapy, or extraction if the tooth is not restorable (8). Unfortunately, dentists still prescribe antibiotics for this condition(8). A distressing finding was that a number of dentists prescribe antibiotics for viral infections like herpes simplex virus-1 infections(11). Another aspect of antibiotic over-prescribing is prescribing based on non-clinical factors. Patient's expectation of an antibiotic prescription, convenience, and demand necessitated by the social background of the patients are considered unscientific reasons for antibiotic prescription. Dailey, and Martin study, provided support to the hypothesis that antibiotics are being inappropriately prescribed by the dental profession(12). This evidence supported by many other studies ;concluding that the dentists should know the scientific basis for the prescription of antibiotics during dental treatment (13).

The use of antibiotics as prophylaxis for focal infection is common practice, and has been widely accepted in the dental profession (14). Most studies on prophylactic antibiotic use carried out in developed countries, and the results generally indicated that dentists have a good knowledge of prescribing. Few studies done in developing countries reported abuse of prophylactic antibiotics to cover either a defect in aseptic clinical technique or improperly sterilized equipment(8). Previous study suggested Practitioners prescribe antibiotic prophylaxis for clinical procedures and medical conditions for which there is little evidence (15). Like surgical procedures for patients at risk from endocarditis (15,16)

In many developing countries –Like Sudan- antibiotics are delivered without a prescription, subsequently emergence of resistance is even worse. In addition, without standard treatment guidelines, antibiotics are often over-prescribed by health workers and over-used by the public. That is why we need appropriate measures to support rational prescribing to reduce emerging incidence of antibiotic resistance and other side effects of antibiotic misuse. Never the less scarce information regarding dentists' antibiotics prescription practice at developing countries are available. Therefore, our aim

from this research is to study the practice of general dental practitioners regarding prescription of antibiotics, in Khartoum dental teaching hospital.

Methodology:

The study was an observational descriptive cross-sectional study conducted at Khartoum dental teaching hospital, which consider the biggest dental hospital in Sudan. Accommodates a valuable number of dentists with different professional levels and receives a considerable number of

patients from all parts of the country. The hospital compose of many departments includes (oral and maxillofacial surgery, conservative treatment, periodontology, pediatric dentistry, prosthodontics, implantology and dental public health department. Our target was all dentists working in Khartoum dental teaching hospital at the time of study (195 dentists). This hospital was chosen for the study because it is the biggest training center in Sudan for dentists. In addition, most of certified dentists conducted their horsemanship in Khartoum Teaching hospital. Inclusion criteria: General dental practitioner, graduated from Sudanese universities, both genders. Exclusion criteria: Dental students, registrar and consultants, other health workers.

Data were collected using a structured, closed ended, Self-administered questionnaire, based on literature and previous studies (10,11,14-16). Questionnaire pre tested and validated by 5 dentists and the results were not included in the final analysis. The total population was 195

The data analysis: Data were analyzed using SPSS Version 23. Univariate and bivariate analysis were carried out. The univariate analysis focused on drawing percentages, proportions of the dentists as regards personal characteristics and practice. Each correct answer was given a score of 1 and incorrect answers were given 0.

Results

One hundred and ninety-five questionnaires were distributed to dentists. Those who agreed to participate in this study were 123 with Response rate of 63.08%. The majority of our respondents were females, younger than 29 years old and newly graduated doctors as presented in Table 1.

A few numbers of respondents received postgraduate education in antibiotic prescription. The most common antibiotics prescribed was the combination of amoxicillin and metronidazole followed by amoclan 625 mg (Figure 1). For patients with allergy to penicillin erythromycin followed by clindamycin 300 mg (Figure2). 65.9% used to prescribe antibiotics regularly after extraction (table 4). Among respondents 69.1% would prescribe prophylaxis for patients with prosthetic joint implant and 83.7% for patients with history of organ transplantation (Table 5). 71.5% would prescribe antibiotics for Irreversible Pulpitis, moderate/severe preoperative symptoms. A considerable number of responding dentist would prescribe antibiotics for Prevention of postoperative complications. About non clinical factors the rates were 26.0%, 33.3%, 16.3%, 56.1% for Unsure of diagnosis, Pressure of time and workload, Patient expectation of antibiotic and Delay/ unable to complete treatment respectively (Figure 4). Significant association between year of graduation and practice score among dentists (Figure5).

Discussion

This study is a hospital-based study targeted the GDPs to assess their practice regarding the prescription of antibiotics. The total population was 195 and the respondents were 123 giving a response rate of 63% which consider an acceptable rate hence some studies in literature showed less rates as 31.1%(16). Among respondents, 82.9% were female and 17.1% males. Most of them 55.3% were 20-24 years old. The majority were fresh graduated (table1). Generally GDPs that had graduated recently had slightly better practice compared to GDPs with more experience(Figure 5).These results concurred with a similar study performed in northeast of England(17). This is probably due to the more recent and fresh evidence-based information

of recent graduates. While there were no significant differences between respondents in relation to gender, age, and university (table 6).

[Table 2] shows that, GDPs prescribed antibiotics mostly due to clinical symptoms and general considerations. Over 70% used to prescribe antibiotics for swelling and postoperative complications. More than 30% of respondents for pain and presence of periapical pathology, and 14.6% when diagnosis is uncertain. These results are almost more than twice of those reported in India where 17.24% of participants prescribe antibiotics for swelling, 30.7% for pain, 0.3% for uncertain diagnosis, 6.0% for prevention of post operative complications, 1.3%, for presence of periapical pathology (10). Present study [Table 3] shows the percentages of respondents who prescribe the antibiotics for various endodontic conditions. The first condition of irreversible Pulpitis, mod/severe preoperative, although there is no indication for the prescription of antibiotics(13), More than 70% of respondents prescribe antibiotics which is unjustified and unnecessary. This finding shows negligence of scientific basis for antibiotics prescription. Irreversible Pulpitis with acute apical periodontitis, mod/severe preoperative symptoms, is a non-infected condition with vital pulp and without systemic involvement. Thus this condition does not need antibiotics, only the removal of cause and prescription of the analgesics(16). However, 57% of the respondents have prescribed the antibiotics for this condition, which is unjustified Table 4). Similar practice has been observed in previous studies ranged from 10-40 %of the respondents (10)(13)(16). In case of Necrotic pulp with chronic apical periodontitis, no swelling, no/mild preoperative symptoms, although there is no clear-cut indication for the prescription of antibiotic for this condition 22.8%of the respondents have prescribed antibiotics. Our results is comparable with previous survey done in north of Saudi Arabia (13).In case of Necrotic pulp with acute apical periodontitis, no swelling, mod/severe preoperative symptoms for which 45.5% of our responding dentists prescribe antibiotics.

It can be considered an over prescription as there is no need of antibiotic prescription in this condition and accurate treatment is non- surgical root canal treatment and analgesics. Our participants' response similar to the previous studies, having the response range from 30%-71% (18). Necrotic pulp with chronic apical periodontitis, sinus tract present, no/mild preoperative symptoms, the effective management of this condition without systemic involvement is, non-surgical endodontic treatment, to remove the cause with drainage and analgesics for pain if indicated(13). Antibiotic prescription is justified only when there is systematic

manifestations or non-healing sinus even so 55% of our dentists' prescribed antibiotics. This result is almost twice of the results revealed by Rodriguez-Núñez, et al(16) . The last endodontic condition in the current study is necrotic pulp with acute apical periodontitis, swelling present, mod/severe preoperative symptoms, when the condition shows systemic involvement then antibiotic prescription is acceptable along with nonsurgical debridement of the root canal system and incision and drainage. 87.0% response rate in the present study is comparable with response rates of 94.3% of the Spanish , 77% of Saudis and (56.4%)of Indians (16)(13)(10).

An interesting finding in this study is that 66% of our respondents used to prescribe antibiotics regularly after any extraction and 40.7% after any RCT, which is definitely unjustified, and the scientific guidelines are obviously neglected (table 4).

Antibiotic prophylaxis prior to invasive dental treatment Should be given to patients with a history of prosthetic cardiac valve Cardiac transplantation recipients, who develop cardiac valvulopathy and some congenital heart disease (19). The National Institute for Health and Care Excellence (NICE) issued Clinical Guideline which states that antibiotic prophylaxis against infective endocarditis is not recommended for people undergoing dental procedures(20). There's no evidence that antibiotic prophylaxis prior to dental treatment is of any benefit to patients. In addition, there is no evidence that prophylaxis is beneficial for

patients with prosthetic joints(20). Unfortunately, 95 % of our participants in this study still believe in the prescription of antibiotics prophylactically for patients with a history of previous infective endocarditis, and 78.0% , 42.3% , believe in prophylaxis for patients with a history of previous rheumatic fever and angina respectively (table 5). Antibiotic prophylaxis is recommended in dental procedures that involve manipulation of gingival tissue or the periapical region of teeth or perforation of the oral mucosa, while prophylaxis for routine anesthetic injections through non-infected tissue, taking dental radiographs, placement of removable prosthodontic or orthodontic appliances, root canals treatment is not reasonable(21)(22). Though 54.5%, 12.2% used to give prophylaxis prior to RCT and routine anesthetic injections respectively (table 6)

The decision to prescribe antibiotics must be based on a thorough medical history, clinical examination, and accurate diagnosis. So, the last question in our questionnaire assigned to assess the non-clinical factors that cause GDPs to prescribe antibiotics, which include patient expectation of antibiotic 16.3%, Pressure of time and workload 33.3%, Unsure of diagnosis 26.0% and Delay/ unable to complete treatment 56.1% (Fig 4). Whereas N. Palmer et al reported that most of the practitioners in the survey (90%)

would not be influenced to prescribe antibiotics because of patient expectation, 30% would prescribe because of shortage of time and 47% if they were unable to make a definitive diagnosis (23), these results are comparable to our present study.

The evidence from this study suggests that a significant number of the practitioners surveyed prescribed prophylactic antibiotics inappropriately, both for surgical procedures and for patients at risk from endocarditis. Our results revealed that practitioner prescribed antibiotic prophylaxis for clinical procedures and medical conditions for which there is little evidence. The evidence from this study suggests that a

significant number of the practitioners surveyed prescribed prophylactic antibiotics inappropriately, both for surgical procedures and for patients at risk from endocarditis.

Keep in mind, this study conducted in teaching hospital setting where junior staff can consult seniors and peers. We could assume that the situation may be worse among community practitioners. This study should be replicated among community practitioners for more generalizable results.

Conclusion:

This study supports the assumption that there is overprescribing of antibiotics for both therapeutic and prophylactic conditions. Most of dentists surveyed use antibiotics routinely for conditions where local treatment would be adequate, large proportion prescribed antibiotics due to non-clinical factors.

We recommend to review undergraduate curriculum and increase the provision of postgraduate courses, training, workshops and other educational initiatives on antibiotic prescription practice. There is also an urgent need for consistent antimicrobial policies to be taught to dental undergraduates within schools and GDPs need clear guidelines on prescribing antibiotics.

Community awareness programs for the dentists and the community about the global problems of misuse of antibiotics and antibiotic resistance so that they can play a role in controlling these global problems.

Abbreviation

GDP: General Dental Practitioner

RCT: Root Canal Treatment

OMF: Oral Maxillary Facial

Ethics approval and consent to participate:

The study was approved by the Central Institutional Review Board IRB AI Neelain University. And by Research Ethics Committee Khartoum Teaching Dental Hospital. Written informed consent was obtained from each participant prior to enrollment.

Consent for publication:

Principal investigator obtained informed consent from each participant to publish the data without breaching confidentiality.

Availability of data and material:

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests:

We declare no conflict of interest

Funding:

No fund was obtained

Table (1) Frequency distributions of Demographic data

		Number	Percentage	Total
Age	20-24	68	55.3%	123
	25-29	51	41.5%	
	30 and more	4	3.3%	
Gender	Male	21	17.1%	123
	Female	102	82.9%	
Year of graduation	2016	19	15.4%	123
	2015	71	57.7%	
	2014	12	9.8%	
	2013	9	7.3%	
	<2013	12	9.8%	
Job description	House officer	90	73.2%	123
	Medical officer	33	26.8%	
Department	OMF surgery	90	73.2%	123
	conservative treatment	18	14.6%	
	pediatric dentistry	15	12.2%	
	Periodontology	0	0.0%	

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Table (2) When do you prescribe Antibiotics (most commonly), according to, clinical symptoms and general considerations?

Condition		NO	%	Total
Elevated temperature +	Wrong answer	10	8 %	100%
Evidence of systemic spread	Correct answer	113	92%	
For Swelling	Wrong answer	92	74.8%	100%
	Correct answer	31	25.2%	
For Pain	Wrong answer	39	31.7%	100%
	Correct answer	84	68.3%	
Diagnosis not certain	Wrong answer	18	14.6%	100%
	Correct answer	105	85.4%	
Prevention of postoperative complications	Wrong answer	87	70.7%	100%
	Correct answer	36	29.3%	
Presence of Periapical pathology in radiograph	Wrong answer	39	31.7%	100%
	Correct answer	84	68.3%	

Table (3): For which of the following endodontic conditions, do you prescribe antibiotics?

Condition		No	%	Total
Irreversible Pulpitis, mod/severe	wrong answer	88	71.5%	100%
preoperative symptoms	Correct answer	35	28.5%	
Irreversible Pulpitis with acute apical	wrong answer	70	57%	100%
periodontitis, mod/severe	Correct answer	53	43%	
preoperative symptoms				
Necrotic pulp with chronic apical	wrong answer	28	22.8%	100%
periodontitis, no swelling, no/mild	Correct answer	95	77.2%	
preoperative symptoms				
Necrotic pulp with acute apical	wrong answer	56	45.5%	100%
periodontitis, no swelling,		67	54.5%	
mod/severe preoperative symptoms	Correct answer			
Necrotic pulp with chronic apical	wrong answer	68	55.3%	100%
periodontitis, sinus tract present,				
no/mild preoperative symptoms	Correct answer	55	44.7%	
	answer			
Necrotic pulp with acute	wrong answer	16	13.0%	100%
apical periodontitis, swelling		107	87.0%	
present, mod/severe	Correct answer			
preoperative symptoms				

Table (4) Do you prescribe antibiotics post operatively for the following conditions?

		No	%	Total
Root Canal Treatment	wrong answer	50	40.7%	100%
	Correct answer	73	59.3%	
Tooth extraction	wrong answer	81	65.9%	100%
	Correct answer	42	34.1%	

Table (5) Do you recommend to prescribe antibiotic prophylactically for the following Conditions?

Conditions		No	%	Total
Prosthetic cardiac valve	Wrong answer	11	8.9%	100%
	Correct answer	112	91.1%	
Previous infective endocarditis	Wrong answer	6	4.9%	100%
	Correct answer	117	95.1%	
Cardiac transplantation recipients, who develop cardiac valvulopathy	Wrong answer	21	17.1%	100%
	Correct answer	102	82.9%	
Previous Rheumatic Fever	Wrong answer	96	78.0%	100%
	Correct answer	27	22.0%	
Angina	Wrong answer	52	42.3%	100%
	Correct answer	71	57.7%	
Cardiac Failure	Wrong answer	58	47.2%	100%
	Correct answer	65	52.8%	

Table (6): For which of the following dental procedures prophylaxis is recommended in cardiac cases:

		No	%	Total
Dentoalveolar surgery/Periodontal surgery	Wrong answer	6	4.9%	100%
	Correct answer	117	95.1%	
Apical surgery	Wrong answer	20	16.3%	100%
	Correct answer	103	83.7%	
Biopsy	Wrong answer	33	26.8%	100%
	Correct answer	90	73.2%	
Matrix bands or rubber dam clamp (subgingival)	Wrong answer	83	67.5%	100%
	Correct answer	40	32.5%	
Orthodontic bands (subgingival)	Wrong answer	82	66.7%	100%
	Correct answer	41	33.3%	
Subgingival scaling/probing	Wrong answer	61	49.6%	100%
	Correct answer	62	50.4%	
Taking dental radiographs	Wrong answer	7	5.7%	100%
	Correct answer	116	94.3%	
Dental impressions	Wrong answer	5	4.1%	100%
	Correct answer	118	95.9%	
Routine dental anesthetic injections through non-infected tissue	Wrong answer	15	12.2%	100%
	Correct answer	108	87.8%	
Root canal treatment	Wrong answer	67	54.5%	100%

Correct answer

56

45.5%

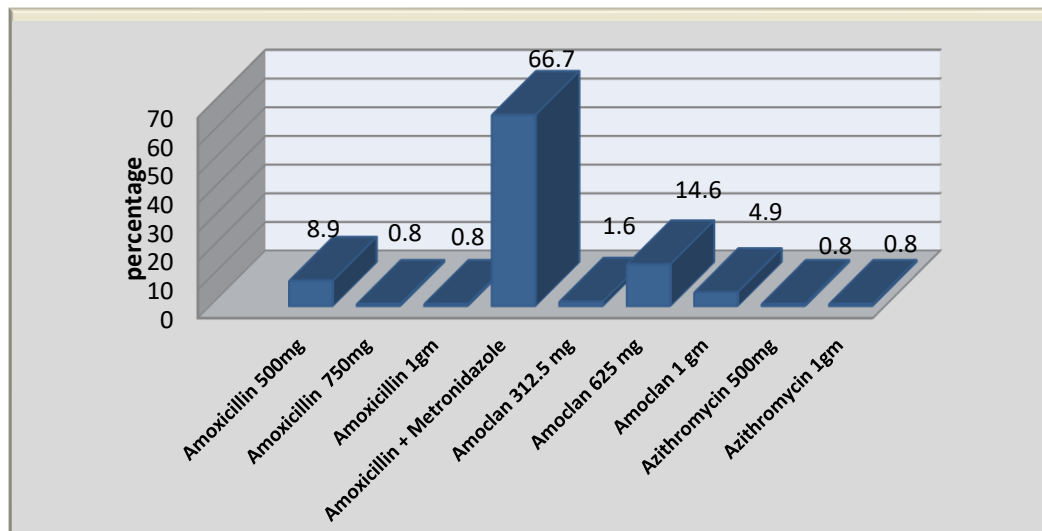


Figure (1): The most common type of antibiotic prescribed, with no medical allergies

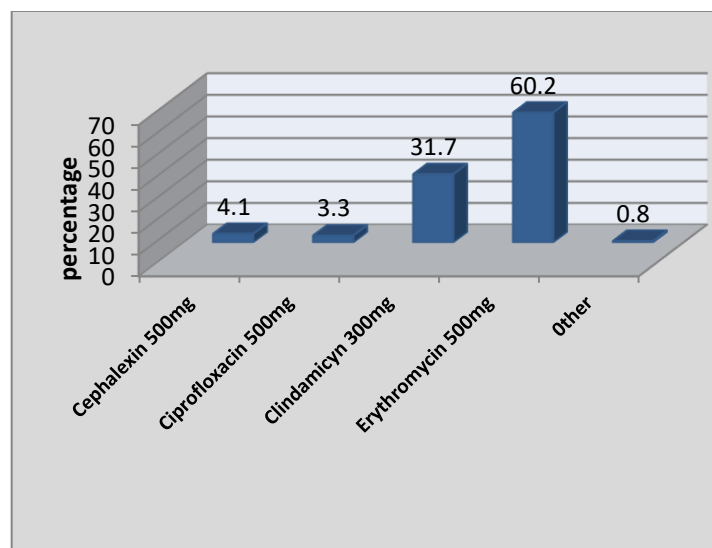


Figure (2): The most common type of antibiotic prescribed in case of penicillin allergy

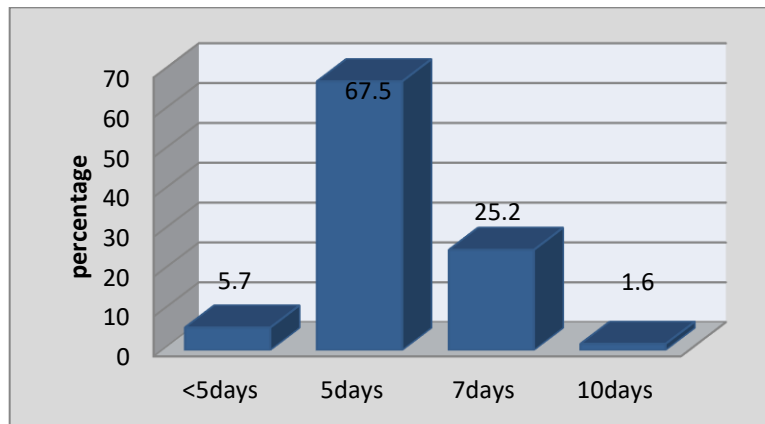


Figure (3) How long do you prescribe antibiotics?

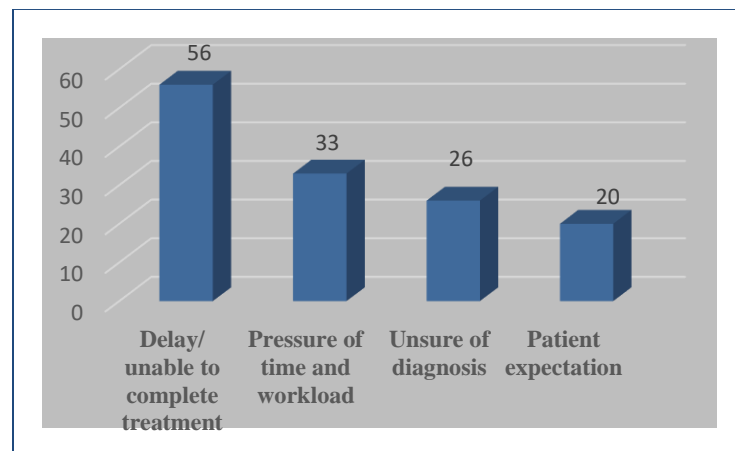


Figure (4): Prescribing antibiotics for non-clinical factors

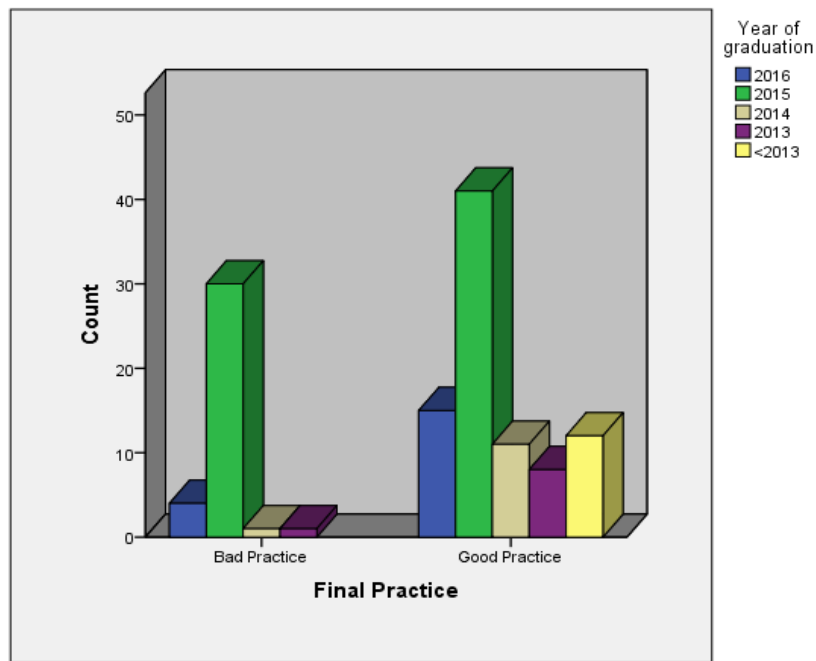


Figure (5) Cross table of Final Practice * Year of graduation

chi-square value= 15.11

P-value of association test = .003

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**Credit Transfer: a strategy for African medical schools during wartime, epidemics, and natural disasters
Sudan's plight is an example.**

Mohamed Elimam Mohamed Ahmed¹, Mohamed Elamin Ahmed Mohamed¹, MD. Wail Nuri Osman Mukhtar¹ MD MScHPE. <https://orcid.org/0000-0003-1758-1713> Gamal Mustafa Abdallah Ahmed¹ MD MScHPE, Khansa Kamal Ahmed Omed¹, MD. MohamedAhmed M Ibnouf², FRCSEd, PhD.

1- EDC committee for credit transfer, Faculty of Medicine, University of Gezira,
2- Professor of Surgery, Faculty of Medicine and Health Sciences, Omdurman Islamic University, Sudan.
<https://orcid.org/0000-0001-8231-9899> e-mail: maibnouf@gmail.com

Corresponding author

Prof Mohamed Elimam Mohamed Ahmed, MBBS, MSc HPE, MD, FRCS, SIUF

mohammedelimam@gmail.com Tel: 00201115556385, +249912362293
<https://orcid.org/0000-0002-7164-8387>

Keywords; credit transfer, war, epidemic, medical education

Introduction

The Universal Declaration of Human Rights guarantees the right to education without discrimination. However, this right is usually violated in wartime. In 2020 In2 2021, the Global Coalition to Protect Education reported over 5,000 military attacks on schools and universities. In Sudan, the ongoing devastating war since April 15, 2023, has led to major forceful displacement of citizens, and schools in the semi-safe areas were used as concentration camps over congested with displaced families. In this context, introducing credit transfer (CT) in Sudanese universities is crucial to ensure the progression of students' academic journeys. In this editorial we highlight this vital issue and present the initiative of the Faculty of Medicine, University of Gazira, Sudan where this issue was studied and a proposal was formulated to be forwarded to the deans of the Sudanese medical schools, the Sudan Medical Council and the Ministry of Higher Education and Scientific Research.

Objectives:

To explore the potential benefits and challenges of the credit transfer system in higher education in Sudan for its relevance and applicability in the ongoing conflict and afterward. Also, to present a summary of the initiative of the Faculty of Medicine, University of Gazira in this issue.

Definition: Credit transfer is a process that allows students to transfer credits earned from one institution to another for accomplishing the requirements for graduation ^(1, 2). This process is relevant for students who wish to change their academic environment for justified reasons ⁽³⁾.

Calculation of the credit transfer:

A credit hour is a standard measurement of the academic work as in the course lectures, discussions, and assignments, plus the estimated study time spent on reading, solving assignments and preparing for exams. One credit hour represents one hour of direct instruction or two to three study hours outside the classroom per week ^(4, 5).

- 1- Compile the contact hours of lectures, labs, tutorials, etc. with the estimated hours for preparing assignments, research and studying for the exam and round the sum to the nearest complete number.
- 2- To get the average week load, divide the sum of these hours by the number of the semester weeks and round the sum to the nearest complete number.

Summary of the 'PROPOSAL OF CREDITS TRANSFER REGULATIONS:

Methods for development of CT proposal:

The Dean of the Faculty of Medicine, University of Gezira has assigned a committee. Several meetings were held. Interviews and personal communication with the academic administrators, education experts, faculty members, and students were conducted and surveys for introducing credit transfer in the education practices were distributed. Quantitative and qualitative data were gathered and analyzed. A document of the proposed regulations was written, discussed and passed in consensus. The proposal will be endorsed to key stakeholders in the Faculty Board, Gezira University Senate and the Sudanese higher education sector to ensure its relevance and applicability.

Definitions

Name of the regulation: The Credit Transfer Regulations.

The University: Refers to the University of Gezira (U of G.)

The faculty: Refers to the Faculty of Medicine (U of G.)

Credit Transfer: Refers to the process of transferring credits earned from the results of teaching, training and evaluation of an academic semester(s), subject(s) matter or course(s) work within the context of the faculty curriculum in the enlisted educational institution(s) recognized the FMUG.

Credit transcript: Refers to a summary of individual learner achievements expressed in terms of credit equivalence or credit award and grade.

Objectives of credit transfers are to:

- 1.1- Facilitate transitions for students who wish to change their educational environment.
- 1.2- Recognise and evaluate prior learning experiences to avoid duplication of coursework.
- 1.3- Provide opportunities for students to accomplish their academic goals.
- 1.4- Save timing for education in epidemics and or national disasters.
- 1.5- Reduce the risk of student drop-out, and avoid repeating learning already undertaken and creating re-entry possibilities.
- 1.6- Offer greater choice and flexibility in choosing courses and institutions. If the medical school has elective courses (vocational, work-based and academic), better career decisions and choices will be expected.

The consensus summarised the advantages of CRT as follows:

A/ 1- Learners will be able to:

- recognize and progress in achievement, according to their needs in similar schools of medicine located in safe areas.
- accumulation and transfer results of their academic attainment to their medical school
- students can continue planning for them for their future their goals

2-Distant learning programs: encourage more people for further professional development without sticking to fixed classrooms.

- make clear the amount and level of learning already achieved by enrolled employees,
- help employers compare the achievements and plan future training for other employees

3- Partners and stakeholders of high education

- are inspired to show more solidarity and engagement with the needs of the university.

4. Prerequisites for credit transfers in medical education:

- 4.1- The school of medicine should be enlisted in the Sudan Medical Council (SMC), Ministry of Higher Education and Scientific Research and other accrediting bodies.
- 4.2- Ensuring that the curriculum in the credit transfer system is comparable to the intended learning outcomes (ILOs) and the core curriculum objectives.

5. Precautions for implementation of the credit transfer:

- 5.1 The limit of credit transfer: The initial maximum period is one semester with its designed credit hours; however, this can be increased after monitoring and evaluation.
- 5.2 The Credit Transfer Committee with the course committee and the concerned department, is entitled to manage the credit transfer, make the final decision, revise the credit transfer, and evaluate the student's results.
- 5.3- Evaluation of the course equivalence: the department in concern can conduct a thorough evaluation to determine the equivalence of courses, and grade the student evaluation in the same batch standards. This may involve reviewing the course syllabus, the learning objectives, and the assessment methods to ensure that the content and competencies are comparable and match the faculty standard settings.
- 5.4- Documents and transcripts: The students should be given an official transcript and documentation of their coursework from both medical schools. This document should include detailed information on the completed courses, awarded grades, and other relevant details. It should contain information on course codes, title duration, grades received, honours awarded, and degrees conferred.

6. Monitoring and evaluation: are functions of the faculty board and the course committee. This may involve evaluating the transfer credit policies and procedures and making decisions based on the university evaluation system.

7. Endorsement and amendment:

7.1- Transparency and communication: Maintain transparency throughout the credit transfer process communicating the requirements, procedures, and outcomes and providing student guidance and support to make the right decision.

7.2- Representations: The responsible initiating person for endorsement of the reciprocal credit transfer agreements is the Faculty Board or the delegated body.

7.3- Validation: Implementation of credit transfer should be in keeping with the academic bylaws of the university and its regulations to be approved by the university senate.

7.5- The costs of tuition: exam and other costs are the responsibility of the student applying for credit transfer, the faculty can assist within its financial capability.

8. Cancellation or withdrawal of Credit Transfer: This is subject to refusal by the opposite partners, or failure to comply with the regulation of the university, SMC and the accrediting professional bodies.

Discussion:

Credit hours measure the time commitment and depth of each course. Credit transfer is not widely accepted in the UK, where there is little research evidence of institutional practice and students requesting transfer arrangements. In contrast, in Norway, Sweden and the USA, transfer to another course, or even another high education institute is very common ⁽⁶⁾. The European Credit Transfer and Accumulation System (ECTS) is transparent and smooth in its processes of transfer and evaluation of credits ⁽³⁾. Some education providers vary in their recognition of credit transfer ⁽⁷⁾.

Students often need to plan their coursework carefully to graduate on time. The number of credit hours for a Bachelor of Medicine and Bachelor of Surgery (MBBS) programme varies depending on the university and country. University College London offers an integrated MBBS program that takes either five years (if you already have a BSc) or six years (if you don't). The programme is 4.688 study hours to be accomplished in 191 weeks including the examinations ⁽⁸⁾. On the other hand, credit transfer in Scotland between vocational education and training and university degrees is more frequent but often problematic ⁽⁹⁾. Although CATS is important to achieve lifelong learning policies, research showed that it is still lagging in the UK's high educational system ⁽¹⁰⁾. It is important to note that credit hour calculation can vary across institutions and programs due to differences in academic structures and curriculum designs. To make the credit transfer system feasible, reliable and applicable in Sudan we need:

- 1- **Online framework** to help search for comparable courses between the schools of medicine in Sudan to help the students and their supervisors before making a decision.
- 2- **Intercollege Reciprocity Agreements for credit transfer** ^(1, 11). Therefore, as in the literature universities in Sudan should develop systems which provide uniform course designations for transfer credit across institutions⁴ because it is a system not only for domestic use but, it facilitates international student mobility, as it allows for the recognition of qualifications and study periods ⁽¹⁾.

Potential benefits and strengths of Credit transfer:

- 1- Students can benefit from CT courses in enrolment in short, compacted courses that condense the knowledge and skills in a shorter timeframe, to earn credit hours within a short period, to facilitate their academic progress. This is probably in line with the goals of students having substitute and supplementary results.
- 2- Some students can enrol in two courses at a time to earn transfer credits and some may join flexible **online courses** in the same time frame, to gain credits. To succeed in such a plan; students must keep contacting their mentors. Credits are only to be transferred from one medical school to the medical school which awards the final degree.

Challenges in Credit Transfer:

- 1- Discrepancy in the curriculum designs across different medical schools ⁽³⁾.
- 2- Credit Limits: Many schools limit the number of credits that can be transferred. Therefore, students need to select the courses to transfer.
- 3- GPA Impact: Transferred grades may affect a student's GPA. If a student performs poorly in a course, they might consider retaking it instead of transferring the grade.
- 4- Major-Specific Requirements: Some programs have specific prerequisites or core courses that must be taken at their institution.
- 5- Transferring credits can save you time and money, but figuring out each school's policies can be a massive headache ⁽¹¹⁾.

A university may consider where the credits are to be earned, the grade received in the course, how long since the credits were earned, and how similar the coursework compared to its counterpart course ⁽¹¹⁾. The general requirement is to complete at least one academic year (in most cases) with an academic transcript. The transfer should be for a good reason, like being unable to complete the degree at first medical school, and not because the student has failed or was dismissed, but because the student is unhappy with the current teaching system or the environment that he/she lives in, and that has a bad impact on his/her performance. Students who want to see the list of medical schools that accept credit transfers can check out the link “[How To Transfer Between Medical Schools](#)”⁽¹²⁾. Nonetheless, evidence showed that the university's investment in developing the staff capabilities, and improving the social and academic environment including the student hostels has very low student transfer and dropouts ⁽¹³⁾. Such capabilities might not be available for universities in Sudan, which renders the introduction of CT crucial.

Most North American transfer systems are built on the basic model of bilateral course-to-course articulation, however, jurisdictions in Australia, and Europe, are working on developing transfer credit models that suit their contexts. Currently, the European Credit Transfer and Accumulation System adopt a workload one year of 1500 to 1800 study hours equivalent to 60 credits ⁽⁶⁾.

Conclusion:

The ongoing devastating war since April 15, 2023, in Sudan, has led to the forceful displacement of citizens and major sabotage of all public and private institutions. In this context, introducing credit transfer in Sudanese universities becomes crucial to ensure the seamless progression of students' academic journeys. In peace, this process would fairly reduce part of the financial problems and help maintain the continuity of education in underprivileged and underfunded, understaffed universities. Scholars in Sudan should work out a unified system that weighs cost/benefit and balances student needs with future national needs.

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Quality of Life Aspects Associated with Diabetic Foot Ulcer Patients at Alzomra Medical Center, Shendi Teaching Hospital, and Almak Nimir Hospitals (March to August 2024)

Awad Elkareem M. A. Ahamed¹, Amaal M. M. Elhassan¹, Ayat O, A, Abdelrhma¹, Omer E. Y. Elhag², Abo ubaida Yassin³, Waseem S. Kwami⁴, Abdelsamei A.A. Hamad¹, Mazin Ahmed⁵, Mojahed B. M. Saeid¹, Motwakil I. A. Imam¹, Ahmed M. A. Ali, Mohammed O. Abass¹, Nihal F. M. Ahmed¹, Saeeda T. J. Algoni¹, Hani F. A. Khalil⁵, Mahmoud Hussein, Salah M. I. Mohamed⁶, Tarig A. A. Alfadol¹, Amro O.F. Mohammed², Khalid M.E. Eltalib⁷, Ali.M. A. Imam²

- 1- Shendi university faculty of medicine
- 2- Al Neelain university faculty of medicine
- 3- Jazan university faculty of medicine
- 4- Shedi university faculty of medical laboratory sciences
- 5- The national center of gastrointestinal and liver diseases
- 6- The national university faculty of medicine
- 7- Kordofan university faculty of medicine

Corresponding author: Awadelkareem masaad Awadelkareem Ahmed The.sky1991@hotmail.com

Abstract

Background: Diabetic foot ulcers (DFUs) are a serious complication of diabetes mellitus, leading to high morbidity, frequent hospitalizations, and a significant decline in quality of life (QoL). This issue is particularly pronounced in resource-limited settings like Sudan, where underdeveloped healthcare infrastructure complicates effective management.

Objectives: This study aims to evaluate the QoL of patients with DFUs and identify factors influencing QoL in the physical, psychological, social, and environmental domains among patients treated at Alzomra Medical Center, Almak-Nimir Hospital, and Shendi Teaching Hospital.

Methods: A cross-sectional study was conducted from March to August 2024 at Alzomra Medical Center, Almak-Nimir, and Shendi Teaching Hospital, involving 102 diabetic foot ulcer patients. Data were gathered using validated QoL assessment tools, including the Diabetes Foot Ulcer Scale (DFS) and the Short Form Health Survey (SF-36). Additional data on demographics, duration of diabetes, wound characteristics, and treatment regimens were collected. Statistical analysis explored correlations between QoL outcomes and factors such as gender, age, wound severity, and the hospital of treatment.

Results: Most patients were male (71%) and aged between 41–60 years, with Type 2 diabetes being the predominant form (81%). A majority of patients had lived with diabetes for less than 10 years. Pain interference, activity limitations, and

frustration were the primary factors negatively impacting QoL. The domains most affected were physical functioning and psychological well-being, with mobility limitations and pain playing significant roles. Despite these challenges, no statistically significant differences were observed in QoL outcomes based on gender, age, or hospital of treatment, indicating consistent care across facilities.

Conclusion: Diabetic foot ulcers significantly impair quality of life, particularly in physical and psychological domains. Pain management, improved mobility support, and psychological counseling are essential to enhancing patient outcomes. The consistent quality of care provided at Alzomra Medical Center, Almak-Nimir, and Shendi Teaching Hospital highlights the importance of a multidisciplinary approach in managing DFUs in resource-limited settings. Future research should concentrate on long-term strategies for recurrence prevention and overall patient well-being improvement.

Research questions

What is the overall quality of life (QoL) of diabetic foot ulcer patients treated at Alzomra Medical Center, Almak Nimir Hospital, and Shendi Teaching Hospital?

How do diabetic foot ulcers impact the physical, psychological, social, and environmental domains of quality of life among patients?

Research Justification

In Africa, an estimated 14 million individuals currently have diabetes mellitus (DM), with projections suggesting this figure will double to 28 million by 2030. In Sudan, recent data on the incidence and prevalence of DM and its complications, as well as patients' awareness and lifestyle practices, is lacking. Previous studies have indicated that DM in Sudan is often associated with poor glycemic control, a high prevalence of complications, reduced quality of life, and increased morbidity.

Among Sudanese adults, diabetic foot is reported as the leading diabetes-related cause of hospitalization, with major lower limb amputations and mortality rates of 19.2% and 6.7%, respectively. These complications highlight significant gaps in the management and lifestyle adaptation of diabetic patients, particularly those suffering from diabetic foot ulcers (DFUs).

Given the severe impact of DFUs on morbidity and quality of life, this study aims to explore the quality-of-life aspects in DFU patients, assessing the factors that contribute to poor outcomes and identifying potential interventions. Understanding the challenges faced by patients with DFUs is crucial to improving clinical management, promoting diabetes-friendly lifestyles, and ultimately enhancing the quality of life in this vulnerable population.

Objectives

General Objective:

To assess the quality-of-life aspects associated with diabetic foot ulcer patients at Alzomra Medical Center, Shendi Teaching Hospital, and Almak Nimir Hospitals from March to August 2024.

Specific Objectives:

- 1- To assess the overall QoL of DFU patients using validated QoL assessment tools.

- 2- To identify specific domains of QoL (physical, psychological, social, and environmental) most affected by DFUs.
- 3- To explore the factors influencing QoL in DFU patients, such as wound characteristics, comorbidities, and socio-demographic factors.
- 4- To compare the QoL outcomes between patients treated at Alzomra Medical Center, Almak Nimir Hospital, and Shendi Teaching Hospital.

Literature Review

Diabetic foot ulcers (DFUs) represent a significant health burden globally, particularly in regions with limited healthcare resources. In Africa, approximately 14 million individuals have diabetes mellitus (DM), and this number is expected to double by 2030 [1]. DFUs are among the most severe complications of DM, often leading to prolonged hospitalizations, amputations, and increased mortality. In Sudan

diabetic foot ulcers are a leading cause of diabetes-related hospital admissions, contributing to major lower limb amputations and high mortality rates [2,3]. These complications underscore the substantial impact of DFUs on patient quality of life (QoL).

Quality of life is considerably reduced in patients with DFUs due to chronic pain, mobility restrictions, and emotional stress. Studies in various settings have consistently reported that the physical and psychological domains of QoL are particularly affected [4,5]. In a cross-sectional study conducted in Egypt, patients with DFUs reported lower QoL scores compared to diabetic patients without foot complications, with physical limitations and psychological distress being the most significantly impacted domains [6]. This trend aligns with global observations, suggesting that DFUs profoundly impair both physical functioning and mental well-being [7].

The severity and duration of DFUs, along with patient demographics, play crucial roles in determining the QoL outcomes for diabetic patients. Research from Nigeria has highlighted that factor such as age, ulcer severity, duration of diabetes, and the presence of comorbidities (e.g., hypertension, neuropathy) significantly influence QoL [8]. Socioeconomic status, education level, and access to healthcare are also key determinants that affect the overall well-being of DFU patients [9,10]. Effective management of these factors is essential to improve QoL and reduce the complications associated with DFUs.

Multidisciplinary care approaches are critical in managing DFUs, as they involve coordinated efforts from healthcare professionals, including podiatrists, endocrinologists, nurses, and mental health specialists. Evidence suggests that multidisciplinary management, which includes wound care, pain control, psychological counseling, and regular monitoring, improves QoL among DFU patients [11,12]. A systematic review by Goodridge et al. emphasized the benefits of early and comprehensive intervention in preventing DFU complications and enhancing QoL [13].

Managing DFUs in resource-limited settings like Sudan presents unique challenges, including inadequate access to specialized care, limited availability of advanced diagnostic tools, and insufficient patient education. The International Diabetes Federation has highlighted the need for strengthening primary healthcare systems, promoting diabetes-friendly lifestyles, and increasing awareness of foot care to address the high burden of DFUs in low-income regions [14]. Effective preventive strategies are crucial to mitigating the impact of DFUs and improving long-term outcomes in resource-constrained environments [15].

Patient education is a pivotal component in the management of diabetes and the prevention of DFUs. Studies indicate that a lack of knowledge about foot care, poor glycemic control, and non-compliance with treatment regimens are prevalent among diabetic patients in Sudan and other low-resource countries [16,17]. Educational programs that emphasize proper foot hygiene,

regular monitoring, and adherence to treatment plans have been shown to significantly reduce the risk of DFUs and improve QoL

Methodology

Study Design

This study adopts a cross-sectional design to assess the quality of life (QoL) of diabetic foot ulcer (DFU) patients. Data will be collected at a single point in time within the study period to capture a comprehensive snapshot of the QoL of DFU patients in the selected healthcare facilities. A quantitative approach will be utilized, employing standardized QoL assessments and structured questionnaires to gather quantifiable data.

Study Area

The research will be carried out in three key healthcare settings in Shendi, Sudan:

Shendi Teaching Hospital: A large and comprehensive healthcare institution offering a wide spectrum of medical services, including specialized diabetes care.

Almak Nimir Hospital: Another major hospital in Shendi, offering similar healthcare services as Shendi Teaching Hospital, with the potential to serve a different patient demographic.

Alzomra Medical Center: A newer medical facility with a dedicated foot care clinic, allowing for the inclusion of patients with potentially more specialized needs or complex DFU cases.

Study Duration

The study will span a period of six months, from March 2024 to August 2024. This timeframe is designed to allow for the recruitment and assessment of a representative sample of DFU patients in the targeted healthcare facilities.

Study Population

The study population will consist of adult patients (18 years and above) diagnosed with DFUs, attending any of the three selected healthcare facilities. This targeted population allows the study to specifically focus on the QoL aspects of DFU patients in the region.

Sample Size

A total of 100 DFU patients will be recruited from the three healthcare facilities. This sample size is deemed sufficient to provide meaningful insights into the QoL of DFU patients in Shendi and to enable a preliminary analysis of the factors impacting their QoL.

Sampling Technique

A convenience sampling technique will be employed, meaning that all DFU patients encountered at the three facilities during the study period will be included. Although this approach is not random, it is practical given the study's time constraints and aims to capture a representative sample of the population.

Tools of Data Collection

Data collection will rely on a structured questionnaire administered through personal interviews. This approach ensures consistent data collection and minimizes bias or misinterpretation during the data gathering process.

Data Collection Technique

Two primary data collection techniques will be used:

Quality of Life Assessment:

Diabetes Foot Ulcer Scale (DFS): A specialized tool to assess the impact of DFUs on a patient's physical functioning, pain, social activities, and emotional well-being.

Short Form Health Survey (SF-36): A widely used survey that measures overall health-related QoL across eight dimensions: physical functioning, role limitations due to physical problems, bodily pain, general health, vitality, social functioning, role limitations due to emotional problems, and mental health.

Clinical Data Collection:

Medical Records: Relevant clinical data will be extracted, including demographics (age, gender, etc.), diabetes history (duration, blood sugar control, complications), wound characteristics (location, size, depth, presence of infection), and treatment regimens.

Patient Interviews: Direct questions will be asked to participants to collect information on their wound care experiences, satisfaction with treatment, and perspectives on the impact of DFU on their daily lives.

Data Analysis

Data will be compiled from a master sheet and analyzed using the Statistical Package for the Social Sciences (SPSS). Analysis will include descriptive and inferential statistics to examine the relationships between QoL outcomes and variables such as demographic factors, clinical features, and wound characteristics. Results will be presented in the form of tables, graphs, and figures.

Data Management

The data will be presented in a clear and organized manner, using tables and figures to illustrate key findings.

Ethical Considerations

Ethical approval for the study will be obtained from the Research Ethics Committee of Shendi University. All participants will provide informed consent, and confidentiality will be maintained throughout the study. The ethical guidelines set by the committee will be strictly adhered to, ensuring the protection of participants' rights and well-being.

Results

The primary objectives of this study were to assess the overall Quality of Life (QoL) of diabetic foot ulcer (DFU) patients using validated QoL assessment tools, identify specific domains of QoL (physical, psychological, social, and environmental) most affected by DFUs, explore factors influencing QoL such as wound characteristics,

comorbidities, and socio-demographic factors, and compare QoL outcomes between patients treated at different hospitals. This chapter presents the comprehensive data analysis conducted to achieve these objectives, including exploratory data analysis (EDA), hypothesis testing, multivariate analysis, and visualizations.

Data Overview and Descriptive Statistics

The dataset comprised demographic information, health conditions, and various QoL measures for DFU patients. The analysis included 102 patients with data on age, gender, education level, occupation, type and duration of diabetes, and history of diabetic ulcers.

- **Demographics:** Most patients were middle-aged, with the highest counts in the 41-50 and 51-60 age groups. The gender distribution showed a predominance of male patients (71 males vs. 30 females). The majority of patients had secondary education or lower, with a significant portion unemployed.
- **Education Level:** Most patients had secondary education (31) or primary education (28). A notable number of patients were illiterate (14), which may impact their ability to manage diabetes effectively.
- **Occupation:** A significant portion of patients were unemployed (42), followed by those engaged in free work (41), and a smaller number in sedentary jobs (18). The occupational distribution suggests potential socioeconomic challenges impacting diabetes management.

Diabetes Characteristics:

- **Type of Diabetes:** Type 2 diabetes was the most prevalent, with 83 patients, followed by Type 1 diabetes (13 patients). A few patients (5) had other types of diabetes.
- **Duration of Diabetes:** Most patients had been living with diabetes for less than 10 years (44 patients), while 38 patients had diabetes for 10-20 years. A smaller group had diabetes for more than 20 years (6 patients), and 13 patients were not diagnosed with diabetes before presenting with foot ulcers.

- Diabetes Management: Insulin therapy was the most common management method (56 patients), followed by oral medications (42 patients). Only a few patients managed diabetes through diet and exercise (3 patients).

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Ulcer Characteristics:

- History of Diabetic Ulcers: A majority of patients (57) had a history of diabetic ulcers, indicating recurring issues.
- Number of Ulcers: The number of ulcers varied, with 25 patients reporting a single ulcer, 14 reporting two ulcers, 11 reporting three ulcers, and 7 having more than four ulcers.
- Wound Site and Depth: The forefoot was the most common wound site (59 patients), followed by the midfoot (22 patients) and hindfoot (20 patients). Deep wounds were most prevalent (54 patients), with a smaller number having superficial wounds (26) or wounds involving bone (21).
- Previous Treatments: Treatment approaches commonly included dressing changes, antibiotics, surgical debridement, and, in some cases, amputation. A combination of all these treatments was reported by 48 patients, indicating severe ulcer cases

Discussion

The results of this study underscore the significant impact of diabetic foot ulcers (DFUs) on patients' Quality of Life (QoL), aligning with findings from previous research that demonstrated the debilitating effects of DFUs on multiple aspects of well-being. This section interprets the study's key findings, discusses their implications in the context of existing literature, and offers recommendations for clinical practice and future research.

The analysis identified pain interference as the most substantial predictor of QoL impact among DFU patients. This finding is consistent with previous studies, which noted that pain is a major factor influencing physical and emotional well-being in patients with chronic wounds like DFUs [19,21]. Pain not only limits daily activities but also exacerbates emotional distress, leading to frustration and diminished overall QoL. These results emphasize the necessity for targeted pain management strategies, such as multimodal analgesia and advanced wound care, to improve QoL outcomes in DFU patients [20].

Frustration levels also significantly affected QoL, indicating that psychological factors play a crucial role in the lived experience of DFU patients. Similar findings have been reported in the literature, highlighting that the emotional burden of chronic diabetic complications often contributes to lower QoL [22,23]. Psychological distress can stem from the chronic nature of DFUs, frequent medical visits, and the impact on personal and social life. This stresses the need for comprehensive care approaches that include psychological support and counseling as part of the DFU management protocol, which could help in mitigating the emotional challenges faced by these patients [24].

Activity limitation emerged as a significant contributor to QoL impact, underlining the importance of maintaining physical functionality for DFU patients. The literature supports this finding, suggesting that physical limitations due to pain and wound severity often lead to decreased independence and mobility, further affecting social engagement and mental health [19,25]. Rehabilitation services, including physical therapy and tailored exercise programs, could enhance mobility and reduce activity-related restrictions, thereby improving the QoL for DFU patients [26].

Contrary to some previous studies, gender, type of diabetes, and treatment location did not show statistically significant differences in QoL outcomes among the DFU patients studied. These results suggest that the burden of DFUs is largely independent of these demographic and treatment factors, possibly indicating that the core impact on QoL is more related to the severity of the condition itself rather than these individual variables [27,28]. This could be a reflection of the consistent quality of care provided across the different healthcare settings studied, as well as the similarities in the progression and management of DFUs across genders and diabetes types.

Conclusion

In conclusion, DFUs have a profound impact on the QoL of affected individuals, with pain, frustration, and physical limitations being the primary drivers of this burden. Addressing these factors through comprehensive, multidisciplinary care approaches—encompassing physical, emotional, and social dimensions—could significantly enhance the overall well-being of DFU patients. Clinicians should adopt an integrated model of care that prioritizes pain management, psychological support, and rehabilitation,

Recommendations

1. Integrated Care Model: Develop a comprehensive care pathway that combines medical, psychological, and social support services. Coordination among healthcare providers, mental health professionals, and social workers is essential to address the multifaceted needs of patients.
2. Patient Education: Create educational programs focusing on diabetes management, psychological resilience, and effective use of social support networks. These programs should be delivered through various formats (e.g., workshops, pamphlets, videos) to cater to different learning preferences.
3. Continuous Monitoring and Feedback: Establish a system for ongoing monitoring of patient well-being, using digital health tools to track progress, provide reminders for healthcare visits, and offer resources for support. Regular feedback from patients can help refine intervention strategies.
4. Early detection of wound and intervention. Patients should schedule regular visits and learn the need for medical intervention in early detection of wound infection with urgency to avoid further complications and burden procedure in a long-term chronic disease.
5. Spreading awareness about occupational hazards. In diabetic patients in regards of the equipment and man labor in demanding jobs, handling sharp objects or operating heavy machinery. attentive fields security as well as providing safety gears for them.
6. Financial aid and charity association support. providing the diabetic patients with financial high struggles funding programs in health care based on their current socioeconomic status, especially the population left unemployed after the displacement due to the war and political stance of unfortunate events unfolding in Sudan.

Limitation

Some of the patients refused to participate in our study due to exhaustion from the treatment, few patients were suffering from hypoglycemia. A large sum of the patients were elderly with a low understanding of survey set of questions and rating of

their emotions as well as feeling compelled to agree with certain question due to lack of privacy and relative surrounding the ensuring a holistic approach to improving outcomes for this vulnerable patient population.

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Assessment of Antibiotics Usage Patterns and Practices within Elmiek Nimer University Regional Hospital in the period from January 2024 to April 2024

Awad Elkareem M. A. Ahamed¹, Omer E. Y. Elhag², Abo ubaida Yassin³, Waseem S. Kwami⁴, Abdelsamei A.A. Hamad¹, Mazin Ahmed⁵, Mojahed B. M. Saeid¹, Motwakil I. A. Imam¹, Ahmed M. A. Ali , Mohammed O. Abass¹, Nihal F. M. Ahmed¹, Saeeda T. J. Algoni¹,Hani F. A. Khalil⁵, Mahmoud Hussein, Salah M. I.Mohamed⁶, Tarig A. A. Alfadol¹, Amro O.F. Mohammed², Khalid M.E. Eltalib⁷, Ali .M.A.Elimam²

- 1- Shendi university faculty of medicine
- 2- Al Neelain university faculty of medicine
- 3- Jazan university faculty of medicine
- 4- Shedi university faculty of medical laboratory sciences
- 5- The national center of gastrointestinal and liver diseases
- 6- The national university faculty of medicine
- 7- Kordofan university faculty of medicine

Corresponding author: Awadelkareem masaad Awadelkareem Ahmed The.sky1991@hotmail.com

Abstract

Introduction: Antibiotics are vital for treating bacterial infections, but misuse has contributed to antibiotic resistance, a global health threat. Understanding healthcare professionals' prescribing practices and adherence to guidelines is essential for effective antibiotic stewardship.

Objective: This study assesses healthcare professionals' knowledge, attitudes, and practices regarding antibiotic use at Elmiek Nimer University Regional Hospital, identifying barriers to guideline adherence.

Methods: A cross-sectional study was conducted using a structured questionnaire among healthcare professionals. It covered demographics, knowledge of guidelines, prescribing practices, participation in stewardship programs, and perceived barriers. Descriptive statistics were used for analysis.

Results: Most participants were registrars (41.5%) and medical officers (34.1%), with 35.7% having 5-10 years of experience. Despite moderate to high self-rated antibiotic knowledge (60.2% moderate, 40% high), 78% were unaware of hospital guidelines. 77.2% frequently prescribed antibiotics, guided mainly by clinical symptoms (85.4%) and lab results (69.1%). Only

15.4% had engaged in stewardship programs, finding them effective. Barriers included financial constraints (47.2%) and medication-related issues (46.3%).

Conclusion: There are gaps in guideline awareness and adherence, even with moderate knowledge of antibiotics. Enhanced stewardship programs, targeted training, and hospital-specific guidelines are necessary to curb antibiotic resistance. Addressing financial and medication-related barriers is crucial for better adherence.

Recommendations: Implement comprehensive stewardship programs with tailored training. Collaborate with policymakers and pharmaceutical providers to alleviate financial and medication barriers. Develop and disseminate hospital-specific guidelines for consistent practice.

Justification:

This study is vital for enhancing antibiotic use at Elmiek Nimer University Regional Hospital, as it tackles the critical issue of antibiotic resistance—a growing global health concern. Antibiotic resistance leads to longer hospital stays, increased medical costs, and higher mortality rates. By systematically evaluating antibiotic prescription patterns, the study aims to determine the most commonly used antibiotics and assess whether their usage aligns with clinical guidelines. This assessment is crucial for understanding the adherence to standards, which has a direct impact on patient outcomes and the development of resistance.

Additionally, by analyzing local antibiotic resistance prevalence, the study will provide essential data on resistance trends among patients. This information will equip healthcare professionals with insights into the efficacy of frequently prescribed antibiotics and the rise of resistant bacterial strains. Such findings are crucial for making evidence-based recommendations to improve prescribing practices, ensuring antibiotics are utilized effectively and only when necessary. This approach is key to reducing the risks associated with antibiotic resistance and promoting better patient care.

Study Objectives

General Objective

- 1- To assess the overall patterns of antibiotic prescription and administration within Elmiek Nimer University Regional Hospital.
- 2- To identify the most commonly prescribed antibiotics, their indications, and the duration of treatment.

Specific Objectives

- 1- To evaluate adherence to established guidelines for antibiotic usage.
- 2- To assess the prevalence of antibiotic resistance in bacterial isolates from patients within the hospital.

- 3- To provide evidence-based recommendations for improving antibiotic prescribing practices.

Literature Review

Antibiotics have been the cornerstone of modern medicine, revolutionizing the treatment of bacterial infections. However, the misuse and overuse of antibiotics are major contributors to the emergence of antibiotic resistance, a serious global public health issue. Antibiotic resistance occurs when bacteria evolve mechanisms to withstand the drugs designed to kill them, leading to longer hospital stays, increased healthcare costs, and higher mortality rates [1,2]. Addressing the problem requires a detailed understanding of local prescribing patterns, the common types of antibiotics used, and how well healthcare professionals adhere to clinical guidelines.

Several studies have examined antibiotic prescription practices in hospital environments. Research indicates that prescribing practices often do not align with established guidelines, contributing to inappropriate use [3]. A study conducted in a tertiary hospital in sub-Saharan Africa found that empirical antibiotic prescriptions were prevalent, with limited adherence to standard treatment protocols [4]. Factors influencing prescribing patterns include clinical experience, diagnostic uncertainty, and perceived patient expectations [5].

In Sudan, like in many low- and middle-income countries, antibiotics are frequently prescribed for non-specific respiratory symptoms and diarrheal diseases, sometimes without laboratory confirmation [6]. These practices have led to the widespread use of broad-spectrum antibiotics, which accelerate the development of resistant strains [7].

Adherence to clinical guidelines is crucial for rational antibiotic use. Guidelines offer standardized recommendations that improve patient outcomes and limit resistance development. A systematic review of guideline adherence in low-resource settings revealed significant gaps, with barriers including a lack of awareness, financial constraints, and limited access to updated guidelines [8]. In another study, healthcare professionals reported difficulties in following guidelines due to resource limitations and the absence of antibiotic stewardship programs [9]. These challenges highlight the need for targeted interventions and training to improve adherence.

Globally, antibiotic resistance patterns vary, influenced by regional prescription habits, infection control practices, and antibiotic availability. A study in East Africa showed high levels of resistance to commonly used antibiotics such as amoxicillin and ciprofloxacin, particularly among hospitalized patients [10]. Local studies in Sudan have reported similar trends, with high resistance rates for first-line antibiotics like ampicillin and co-trimoxazole among community-acquired infections [11]. Monitoring local resistance patterns is critical for informing antibiotic prescribing practices and ensuring effective treatment [12].

Antibiotic stewardship programs are evidence-based interventions designed to promote optimal antibiotic use. Studies indicate that these programs effectively reduce unnecessary antibiotic prescriptions and improve guideline adherence [13,14]. In a hospital in Nigeria, implementing a stewardship program led to a significant decrease in antibiotic misuse and resistance rates [15]. Despite the proven benefits, many healthcare settings, including those in Sudan, have limited or no formal stewardship initiatives [16]. Expanding these programs is crucial for combating antibiotic resistance and optimizing clinical outcomes.

Improving antibiotic prescribing practices requires a multifaceted approach, including enhancing guideline awareness, increasing participation in stewardship programs, and addressing barriers to adherence. Evidence suggests that tailored

education and training, along with the development of local, context-specific guidelines, can significantly improve antibiotic use [17]. Additionally, collaboration with policymakers to address financial and medication-related challenges is essential for effective guideline implementation [18].

Methodology

Study Design: A cross-sectional study was conducted to evaluate antibiotic use patterns among healthcare professionals at Elmiek Nimer University Regional Hospital, focusing on prescribing behaviors, adherence to guidelines, and barriers to optimal use.

Study Area: The study took place at Elmiek Nimer University Regional Hospital in Shendi, Sudan. Established in 2002, the hospital is a major healthcare provider, known for its quality care and modern medical facilities. It also serves as a training center for medical and health sciences students.

Study Population: Healthcare professionals involved in direct patient care, including medical officers, registrars, specialists, and consultants, were the target population.

Duration of Study: Conducted over four months (January to April 2024), with one month each dedicated to data collection, analysis, and report compilation.

Sample Size: A total of 123 healthcare professionals from diverse specialties and varying experience levels participated.

Data Collection Tools: A structured questionnaire was used, capturing demographics, knowledge of antibiotic guidelines, prescribing practices, and perceived barriers. It included both closed and open-ended questions for quantitative and qualitative data.

Data Analysis: Descriptive statistics summarized antibiotic usage patterns, guideline adherence, and factors affecting prescribing decisions. Frequencies and percentages were used for categorical data, while means and standard deviations were calculated for continuous data.

Ethical Considerations: Informed consent was obtained from all participants, and confidentiality was maintained. Ethical approval was granted by the institutional review board of Elmiek Nimer University Hospital.

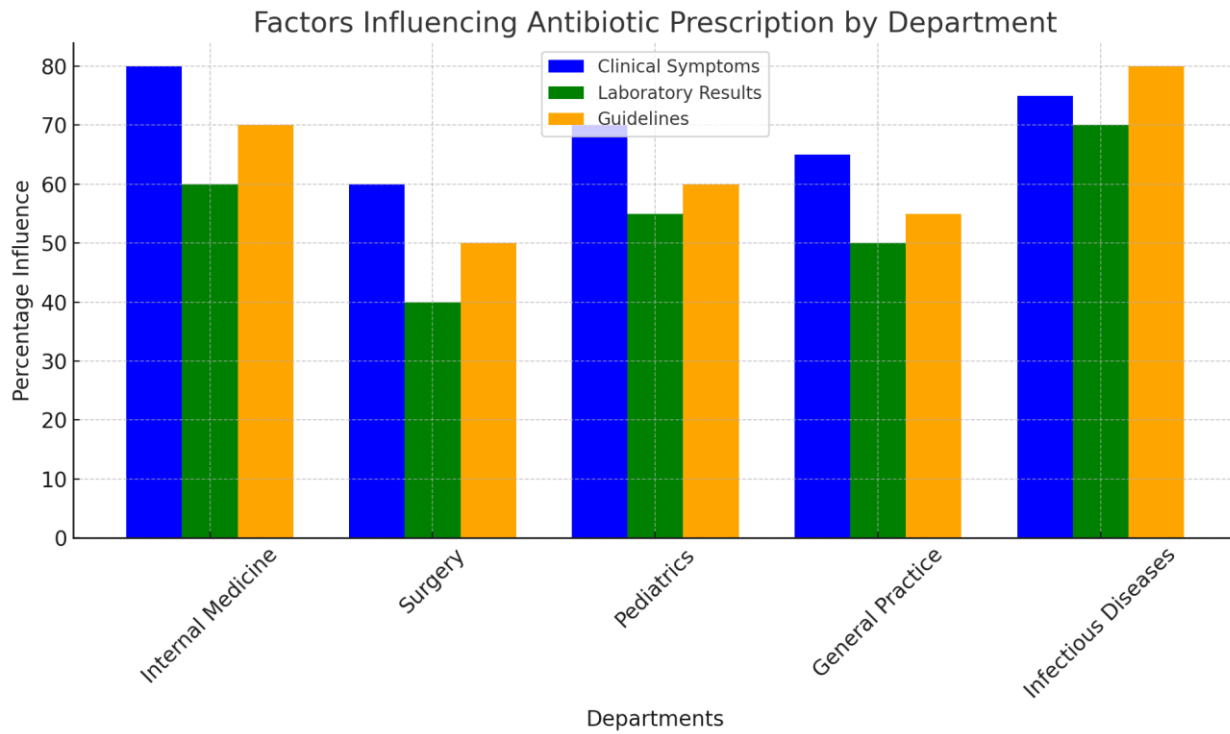
Results

Factors Influencing Antibiotic Prescription by Department: This bar chart displays how clinical symptoms, laboratory results, and guidelines affect prescribing decisions across various departments.

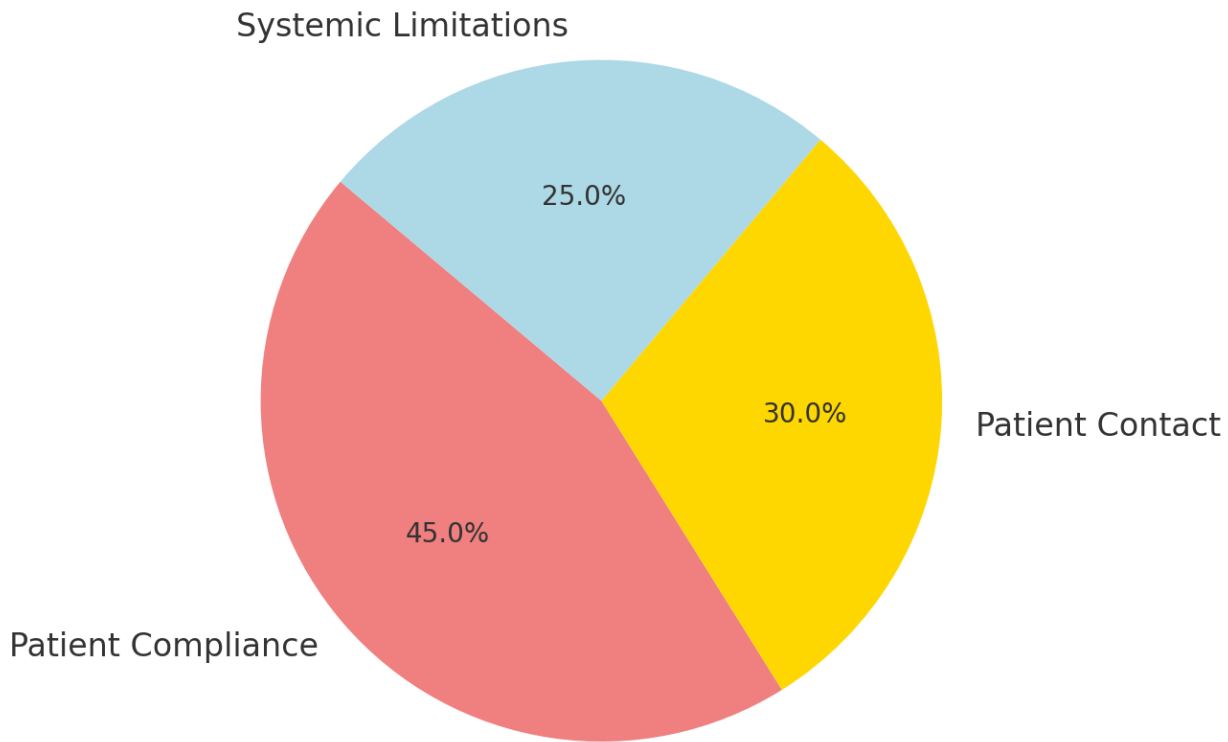
Barriers in Monitoring Patient Outcomes: This pie chart illustrates the primary barriers in monitoring patient outcomes, highlighting issues like patient compliance and maintaining contact.

Concern About Antibiotic Resistance by Department: This grouped bar chart shows the level of concern regarding antibiotic resistance in different departments, categorized as low, moderate, and high.

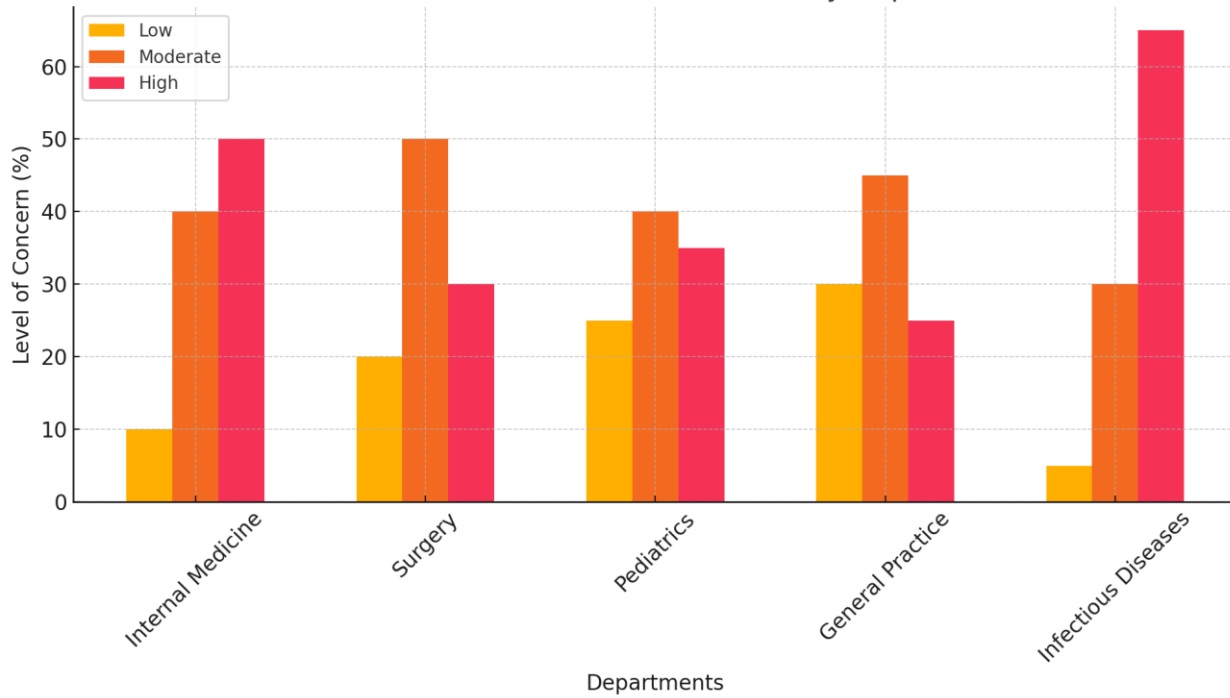
Collaboration Among Healthcare Professionals by Experience: This line chart tracks the frequency of interdisciplinary collaboration based on the years of experience, indicating an increase with more experienced professionals.



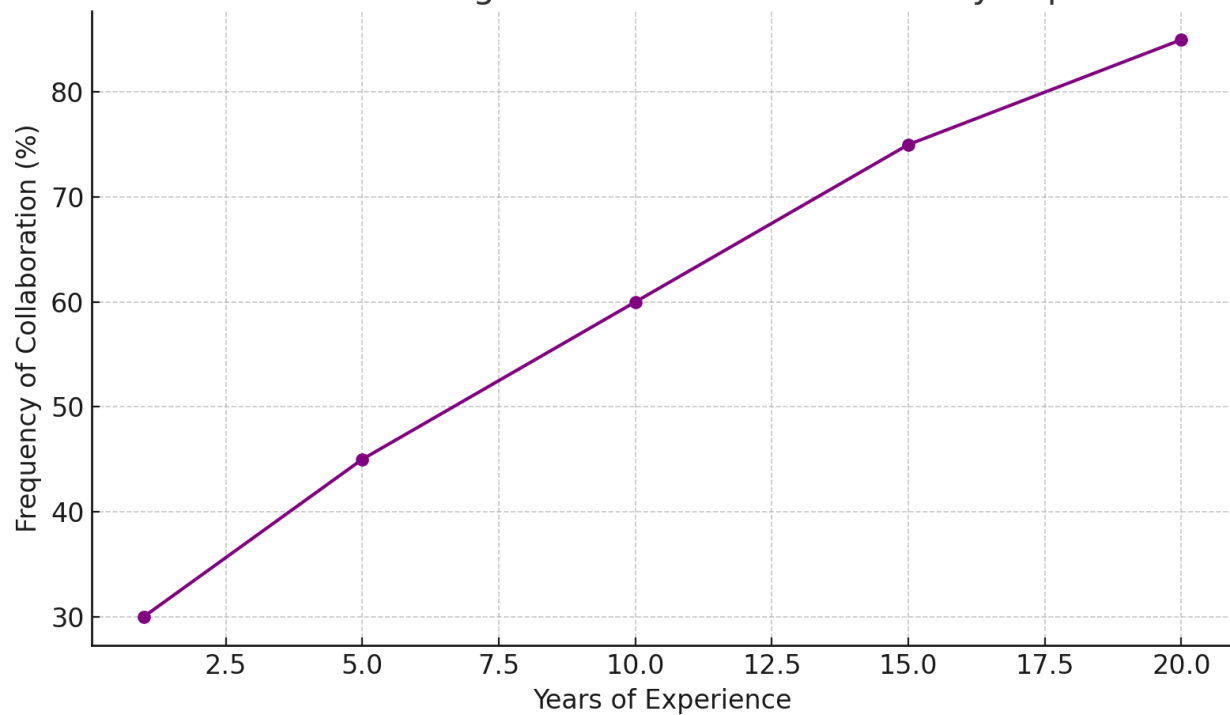
Barriers in Monitoring Patient Outcomes



Concern About Antibiotic Resistance by Department



Collaboration Among Healthcare Professionals by Experience



Discussion

The findings of this study highlight several critical aspects of antibiotic use and stewardship at Elmie Nimer University Regional Hospital. These observations are consistent with previous research in similar contexts and emphasize the importance of targeted interventions to enhance antibiotic practices.

The study revealed that a significant portion of healthcare professionals at Elmie Nimer University Regional Hospital are unaware of hospital-specific guidelines for antibiotic use, despite reporting moderate to high knowledge of antibiotics. This gap between knowledge and practice is a common issue in low-resource settings. Similar studies, such as those conducted in Sudan and other sub-Saharan African countries, have noted that empirical antibiotic prescriptions often take precedence over adherence to clinical guidelines [4, 6]. This misalignment can result in inappropriate use of antibiotics, increasing the risk of resistance.

Enhanced awareness and adherence to guidelines are essential for optimizing antibiotic use. Evidence suggests that targeted education and the development of accessible, locally relevant guidelines can significantly improve compliance [8, 17]. Incorporating hospital-specific protocols, regular training, and updates can ensure that healthcare professionals are better equipped to make evidence-based decisions.

The study found that only 15.4% of participants had engaged in antibiotic stewardship programs, although those who did participate reported their effectiveness. Globally, stewardship programs are recognized as one of the most effective strategies for promoting rational antibiotic use and combating resistance. Research indicates that such programs can reduce unnecessary antibiotic prescriptions, improve patient outcomes, and decrease resistance rates [13, 15]. In Nigeria, for instance, implementing stewardship initiatives led to significant improvements in prescribing practices [15]. This underscores the need for Elmie Nimer Hospital to strengthen and expand its stewardship efforts.

Key components of effective stewardship programs include multidisciplinary teams, regular audits, feedback mechanisms, and ongoing education [14]. Integrating these elements into Elmie Nimer's practices could foster more consistent antibiotic use and adherence to guidelines.

Financial constraints and medication-related issues emerged as significant barriers to appropriate antibiotic prescribing in this study. These challenges are not unique to Elmie Nimer Hospital; similar barriers have been reported in other developing countries, where limited resources and the high cost of medications hinder optimal prescribing [8, 9]. Addressing these barriers requires collaboration between healthcare institutions, policymakers, and pharmaceutical companies to ensure the availability of affordable and essential medications.

Additionally, resource limitations can impact the ability of healthcare professionals to follow guidelines strictly, as diagnostic tests and alternative treatments may not always be accessible. Therefore, efforts to overcome these obstacles should involve the provision of necessary resources and the establishment of systems that support evidence-based decision-making.

The study noted a prevalent use of empirical antibiotic prescriptions based on clinical symptoms and laboratory results. While clinical judgment is vital, reliance on empirical treatment without adequate diagnostic support can contribute to the development of resistance. Previous studies in East Africa and Sudan have shown high resistance levels to commonly used antibiotics, such as amoxicillin and ciprofloxacin [10, 11]. This trend underscores the importance of local surveillance of antibiotic resistance patterns.

By monitoring local resistance trends, healthcare professionals can make informed decisions regarding the most effective antibiotics for specific infections, thereby reducing the risk of resistance. This aligns with the recommendations of global health organizations, which emphasize the need for localized data to guide antibiotic prescribing [12].

Although healthcare professionals at Elmie Nimer Hospital report moderate to high knowledge of antibiotics, there is a clear need for more comprehensive education and training. Continuous professional development (CPD) focusing on rational antibiotic use, resistance prevention, and adherence to guidelines is critical. Tailoring training programs to address specific departmental needs can enhance their effectiveness. Studies have shown that such targeted interventions improve prescribing practices and increase guideline compliance [17].

Educational initiatives should not only focus on healthcare professionals but also extend to patients, highlighting the importance of completing prescribed antibiotic courses and understanding the risks of misuse. This two-pronged approach can foster a more informed patient population and support better health outcomes.

Conclusion

This study provides an in-depth analysis of antibiotic prescribing practices at Elmie Nimer University Regional Hospital, revealing a substantial gap between healthcare professionals' awareness of antibiotic resistance and their adherence to hospital-specific guidelines. The findings underscore a pattern of frequent antibiotic prescriptions based primarily on clinical symptoms and laboratory results, pointing to the necessity for better education on evidence-based guidelines and more consistent adherence to them.

Enhanced antibiotic stewardship programs are essential to improve antibiotic use and combat resistance. Addressing barriers such as financial and medication-related challenges will be critical to achieving better patient outcomes and curbing the spread of resistance. Although healthcare professionals report moderate to high knowledge of antibiotics, the lack of consistent practice and guideline adherence indicates that targeted interventions are necessary.

Recommendations

To address the identified gaps and improve antibiotic prescribing practices, the following actions are recommended:

Strengthen Antibiotic Stewardship Programs: Introduce comprehensive antibiotic stewardship initiatives with mandatory participation from healthcare professionals. This should include routine audits, feedback on prescribing patterns, and the formation of multidisciplinary teams to support appropriate antibiotic use.

Increase Guideline Awareness and Compliance: Create and distribute hospital-specific antibiotic guidelines, ensuring clarity and accessibility. Conduct regular training sessions to familiarize all healthcare staff with these guidelines and promote adherence.

Enhance Education and Training: Implement continuous professional development programs focused on rational antibiotic use, resistance prevention, and the importance of completing prescribed courses. Tailor educational content to address the specific knowledge gaps within different departments and specialties.

Address Financial and Access Barriers: Work with policymakers, pharmaceutical companies, and hospital administrators to minimize financial and access-related obstacles to proper antibiotic prescribing. Ensure the availability of affordable and essential medications.

Bolster Patient Education and Follow-Up: Develop educational initiatives for patients to emphasize the importance of adhering to prescribed antibiotic regimens. Establish follow-up systems, especially in departments like surgery and general practice, to monitor treatment efficacy and outcomes.

Foster Interdepartmental Collaboration: Encourage collaboration between various departments to facilitate comprehensive decision-making in complex cases involving antibiotics. Utilize regular interdisciplinary meetings to enhance communication and improve the quality of care.

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Massive retrosternal goitre in a patient with neck swelling and dyspnoea

Ahmed M Nour.⁽¹⁾ Dabeluchi C. Ngwu.⁽²⁾ Mohammed Saad Aldarahmi⁽³⁾

1. Consultant General, Endocrine and Breast Oncosurgeon, King Abdullah, Bisha, Kingdom of Saudi Arabia.

, Email: dra.nour@yahoo.com

2.. Consultant Thoracic Surgeon, King Abdullah Hospital Bisha, Kingdom of Saudi Arabia.

Email: doctordabs@gmail.com

3. General Surgery Resident(R2), King Abdullah Hospital Bisha, Kingdom of Saudi Arabia. Email: msaldarami@gmail.com

Abstract

Introduction

Simple Multinodular goitre is common cause of huge thyroid and surgery is indicated when it causes dyspnoea and extends retrosternally.

Case presentation

We present a 54 -year old male, who had long standing goitre, that enlarged markedly over the last two years causing dyspnoea.

Blood investigations showed normal thyroid function. CT scan of the neck and chest with contrast revealed huge thyroid in the neck and left intrathoracic extension lying on the aortic arch. Fine needle aspiration and Histopatholgy of the gland revealed benign multindular goitre.

Total thyroidectomy was done through cervical incision without complications.

Discussion

Total thyroidectomy is the primary treatment of retrosternal goitre.

Conclusion

Surgery for huge retrosternal multinodular is a challenging procedure that needs careful dissection and identification of surrounding structures to prevent postoperative morbidities.

Key words: Multinodular goitre, Retrosternal goitre, Total thyroidectomy

Introduction:

Retrosternal goitre (RSG) is defined as thyroid enlargement with the largest mass along dermal sternum from the neck to the substernal part progressing below the thoracic inlet and is biologically inseparable from nodular goitre.⁽¹⁾ Although there are different definitions for RSG, the currently accepted definition is the presence of more

than 50% of the thyroid gland mass below the thoracic inlet.⁽²⁾ Depending on the criteria used to define RSG, its incidence varies from 0.2% to 45% of thyroidectomy patients.⁽³⁾ Goitres are diffuse at first, but over time, factors cause them to become nodular. Iodine, genetic factors and other environmental factors are generally accepted as major factors that contribute to the increase in thyroid nodulation. Various environmental and genetic factors, each with their own effects, play a role in the abnormalities of the thyroid gland, but contribution of various factors ultimately trigger nodular formation.⁽⁴⁾ In huge goitres, there is a greater possibility of mediastinal extension, and this is more likely to happen in the fifth and sixth decades of a person's life. RSG is more likely to be on the left side, and rarely left cervical goitres descend to the right side of the chest.⁽⁵⁾ This manuscript reports a rare case of 54-year-old male who had a huge RSG which has rarely been observed. The patient was finally treated with cervical thyroidectomy.

2 Case presentation (Case History, Examination and investigations):

A 54 years old male with past medical history of hypertension was presented to our hospital with chief complaint of long standing neck swelling, dyspnoea on lying flat and neck tightness and discomfort that increased over the past two years.

Examination revealed a large multinodular Goitre, soft, not attached to skin or deep structures, And with dull percussion not over the left upper chest.(Fig.1)

Thyroid Function tests were Normal, Ultrasound neck revealed large multinodular goitre with cysts degeneration, worse in the right and left retrosternal extension, no tracheal compression and no evidence of cervical lymph nodes enlargement with lateral displayed great vessels of the neck. Fine needle Aspiration cytology from the prominent nodules came as benign cutology.

CT Scan: Neck mass (520.0 gm) extending to the chest displacing the left brachiocephalic downwards and just above the arch of the aorta. With areas of calcifications and benign looking cervical lymph nodes. mild shift of the left trachea by the mass to the right. Common carotid arteries and jugular veins were displaced laterally but were not compressed.(Fig.2) We consulted the thoracic surgeon to join us in the operation in case we encounter difficulties in the operation.

The patient was booked for surgery and ENT consultation for vocal cords examination which revealed bilateral mobile vocal cords.



Fig.1 Shows huge cervical right lobe of the thyroid

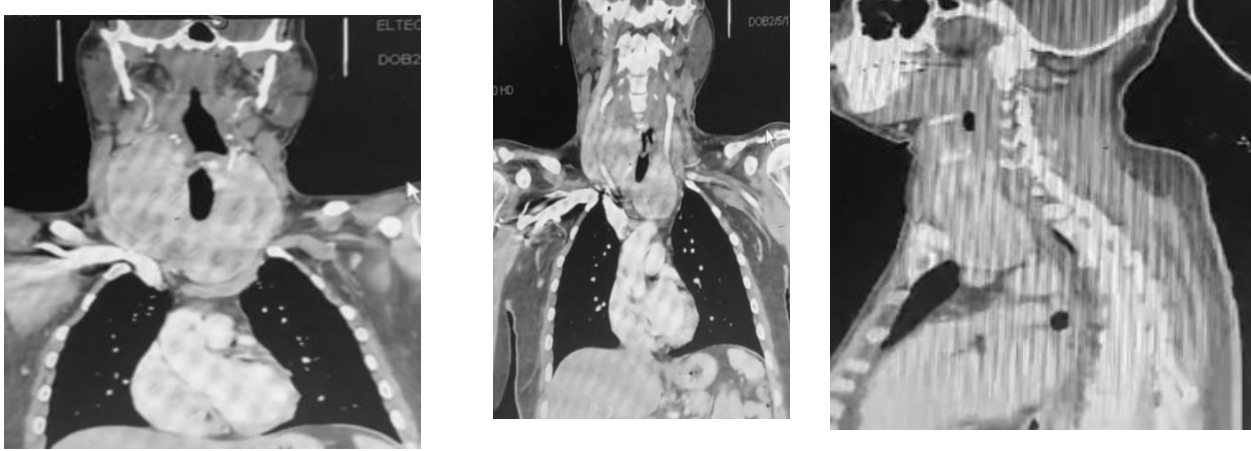


Fig. 2 CT scan of the neck and chest shows huge right thyroid lobe and left intrathoracic lobe over the arch of the aorta.

Surgery was achieved via formal transcervical incision, started with cervical right lobe. The strap muscles in the right side were thin and very adherent to the right thyroid lobe, they were divided high up. Dissection of the upper pole and division of the superior thyroid artery and vein using ligasure. The right lobe was delivered to the wound. Total thyroidectomy was performed after ligation of the inferior thyroid vein and artery. The right recurrent laryngeal nerve and parathyroids were identified and preserved. Then the big left retrosternal lobe was removed by after division of the superior thyroid artery. The left recurrent laryngeal nerve and parathyroids were identified and preserved.(Fig.3)

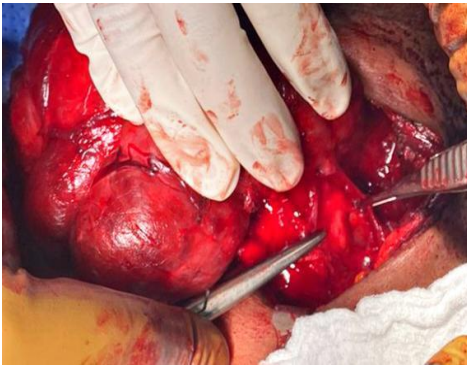


Fig 3 Identification of left recurrent laryngeal nerve(Left)t and total thyroidectomy(Right)



Fig. 3 Totally removed thyroid

The patient was extubated in the operation room with bilateral moving vocal cords which were checked by video laryngoscope. Postoperatively has normal voice and no difficulty in breathing, He was transferred to ICU for 24 hours observation,

Post operatively day 1 patient had Serum calcium 2.3 mmol/L and PTH 39.1 pg./ml. With neck drain removed on the second day (20 ml serous fluid). and discharged home in a good condition.

The patient seen in the clinic and histopathology was benign multinodular goitre.(Fig.4 and 5)



Fig.4 wound after 5 days

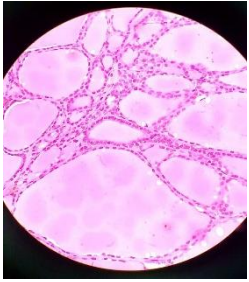


Figure. 5 Histopathology. Multindular goutre

3. Discussion:

Surgery is the treatment of choice for retrosternal goitre with or without clinical symptoms. The case reported by us used a single neck collar-shaped incision for huge retrosternal goitre (performed total resection) with good outcome (less trauma and quicker recovery).

The literature is consistent in stating that most 7substernal goitre cases may be resected through one neck incision. The need for sternotomy or thoracotomy ranges between 0% and 13% ⁽⁶⁾ while some authors claim such rate to be as high as 50%one author reported rates of 29% ⁽⁷⁾ Arici C et al. believed that the cervical collar incision is nearly always adequate, with few exceptions ⁽⁸⁾ In reality, patients with retrosternal goitre can and should be safely treated through the neck approach with good outcome, while sternotomy or thoracotomy should be reserved for selected cases.

Though retrosternal goitres are classified as either primary or secondary, the primary goitre is an exceptional finding and this group represents approximately 1% of retrosternal goitre. The vast majority of retrosternal goitre are secondary, which originate from the downward extension of the gland along the planes of the cervical and mediastinal fascia. ⁽⁹⁾ The blood supply arises principally from the inferior thyroid arteries and most of the venous return is through the inferior thyroid veins. The surgical strategy for treating retrosternal goitre is somewhat different from the one used for the goitre due to anatomic and physiologic dissimilarities. Once the following situations appear, sternotomy or lateral thoracotomy should take into account. 1)retrosternal goitre is too large to be removed through thoracic inlet; 2)the

retrosternal goitre blood supply originates in the chest. 3)retrosternal goitre growing into the mediastinum causes anatomic variations in the location of the recurrent laryngeal nerve and the parathyroid glands; 4)Venous congestion due to compromised drainage may cause severe bleeding.

Conclusion:

Surgery is the treatment of choice for retrosternal goitre with or without clinical symptoms and should be performed as soon as possible. The procedure can be performed through a single neck incision in most patients with retrosternal goitre, which is less trauma and has quick postoperative recovery.

Ethical approval:

Approval of the study was obtained from the Institutional Review Board. King Abdullah Hospital, Bisha, Saudi Arabia on 28/7/2024

Conflict of interest:

No competing interests.

Consent:

Written informed consent was obtained from the patient to publish this report .

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Direct Comparison of Pneumatic and Laser Lithotripsy in the Management of Lower Ureteric Stone, in Ibn Sina hospital and Omdurman military hospital

Abdallah G A Mohammed "1", alaeldin mohammed "2", Abra Hegazi "3" Shaimaa O M Alaraby
"4" Elalim ELtayeb Abdelrhman

"5

(1, 2, 3) Urology Specialist, SMSB

4 consultant general surgery and pediatric surgery, SMSB

5 Red Sea University, Faculty of Medicine

Abstract

Background: A variety of treatments are available for ureteral calculi, including ureteroscopic lithotripsy, shock-wave lithotripsy, laparoscopic lithotomy, and percutaneous nephrolithotomy. **Aim:** Direct comparison of pneumatic and laser lithotripsy in the management of lower ureteric stone, in Ibn Sina hospital and Omdurman military hospital. **Methods:** This was an analytic cross-sectional hospital-based multicenter study, conducted in Ibn Sina and Omdurman military hospital within the period from July up to December 2022. A hundred patients who presented with lower ureteric stone, during study period were included. Direct interviewing questionnaire was utilized. **Results:** The majority of patients (76%) had stone size between 11-15 mm and 24% with stone size between 7-10 mm. There was a higher proportion of stone-free rate intraoperatively in ureteroscope laser (90%) compared to ureteroscope pneumatic (84%) however this was not statistically significant. The odds of stone-free rate intraoperatively was increased by 1.7 folds in ureteroscope laser management option (OR=1.7; 95% CI (.5-5.6). Significantly less operation pain was found in ureteroscope pneumatic 76% versus 92% in ureteroscope laser. The probability of post-operative pain was reduced by 3.6 times (OR=3.6, 95%

CI (1.1-12.2)) in uretroscope pneumatic. Also, significantly less post- operative fever was found in URS pneumatic 70% versus 88% in uretroscope laser. The risk of reduced post-operative fever in URS pneumatic was 3.1 folds (Or=3.1; 95% CI (1.1-8.9)). There was highly significant association between duration of operation and management options, $p=.001$. Less than one-hour duration time of operation was significantly achieved in URS pneumatic 80% versus 16% in URS laser management option. **Conclusion:** The study concluded that both URS laser and URS Pneumatic laser are effective and safe modalities in treating lower ureteric stones, URS pneumatic is superior in reducing complications in terms of pain and fever in addition to less duration time of operation (less than one hour), therefore it is recommended.

Keywords: *Pneumatic lithotripsy, Laser Lithotripsy, Lower Ureteric Stone, Ibn Sina hospital, Omdurman military hospital*

Introduction

Ureteric stones are a common presentation in urological practice. In recent years, progressive miniaturization and technical improvements of ureteroscopes and auxiliary devices have revolutionized their management. Stone free rates well above 90% can, thus, be achieved [1]. Ureteroscopy is one of the most commonly performed procedures by the general urologist. The advancement of ureteroscopy and related working instruments to manipulate or fragment ureteral calculi has significantly increased treatment options. A variety of lithotripters can be used for stone fragmentation, including ultrasonic, electrohydraulic, pneumatic, and laser lithotripters. For many years, favorable outcomes were reported with the use of pneumatic lithotripsy (PL), which uses the simple principle of the jackhammer that is an effective and safe method for stone treatment [2]. Thus, the Lithoclast has become a widespread tool for fragmentation of urinary stones all over the world. Holmium: YAG lithotripsy employs photothermal energy for stone fragmentation [3]. The holmium: YAG laser is now a well-established modality of intracorporeal lithotripsy with an increasing popularity due to its excellent stone-fragmenting properties [4]. Impacted ureter stones present a challenge to the Urologist as the best modality of treatment is still controversial. Impacted stones are defined as calculi that have remained in the same position for at least 2 months [5], failure to pass a guide wire by the side of the stone, failure to visualize contrast medium beyond the stone [6]. Extracorporeal shockwave lithotripsy (SWL) is a non-invasive modality but the stone-free rate falls dramatically for impacted calculi [7, 8] because of lack of natural expansion space around the stone [9, 10]. With the development of smaller caliber semi-rigid and flexible ureterorenoscopes and the introduction of improved instrumentation, including the holmium: yttrium–aluminum–garnet (Ho: YAG) laser, ureteroscopy has evolved into a safer and more efficacious modality for treatment of impacted stones in all locations of the ureter. Ureteroscopic intracorporeal lithotripsy has now become the first-line therapy for chronically impacted stones [11]. Although flexible ureteroscopy is associated with improved access to the proximal ureter and superior stone-free rates, there are many papers advocating that semi rigid ureteroscope is safe and successful treatment modality even for proximal ureteral stones [12, 13]. In recent years, there have been studies comparing the effectiveness of various lithotripters and other minimal invasive methods (e.g., percutaneous antegrade removal) in the management of impacted upper ureteral stones [14–15]. These studies have only evaluated upper ureteral stones; in addition, they have not presented long-term follow-up results.

Although both, laser and pneumatic lithotripsy, have stood the test of time, laser lithotripsy is significantly costlier, not only because of the necessary initial capital investment for a laser machine but also because of the need to constantly

procure replacement laser fibers, whether disposable or with a limited reuse option. Because of these associated costs and its high efficacy and low maintenance, many urologists do prefer the pneumatic lithotripter. Its inflexibility and a higher risk of retro-pulsion may make it slightly less suitable for stones higher up the ureter. However, for stones in the distal ureter, both treatment options can be regarded as almost equal, except for the costs. Pneumatic lithotripsy being the less cost-effective option, at least in our setting, the question

remains whether both options, given our limited resources, are equally effective and beneficial to our patients in our healthcare setting and whether switching to a more economical solution would affect the outcomes.

This study aimed to direct comparison of pneumatic and laser lithotripsy in the management of Lower Ureteric Stone, in Ibn Sina hospital and Omdurman military hospital. (Effectiveness of each other in management of LUS , outcomes and complications)

Materials and Method

Study Population and Design: Was conducted analytic cross-sectional hospital based multicenter study, conducted in Ibn Sina and Omdurman military hospital within the period from July up to December 2022.

Inclusion and Exclusion Criteria: Patients who presented with lower ureteric stone, during study period, distal ureter stone between 7 and 20 mm, Patient age >18 years, No anatomical abnormalities, and A previous attempt of medical expulsive therapy in uncomplicated stones less than 1cm

Any patient outside the above criteria, Pregnancy, Signs of urinary infection, and Elevated Cr >2 mg/dL was excluded from this study.

Sample Size, Data Collection and Analysis:

Hundred patients, 50 patients underwent URS laser and 50 patients underwent pneumatic URS. Direct interviewing questionnaire was used to collect data. Data entered, cleaned, and analyzed using Statistical Package of Social Science (SPSS) computer program, version 24.0. Descriptive statistics in term of frequency tables with percentages and graphs. Means and standard deviations, presented with relevant graphical representation for quantitative data. Chi square test was used to test the relationship between the variables, P value was considered significant if $p \leq 0.05$ (CI 95%).

Ethical considerations: Written ethical clearance and approval for conducting this research was obtained from Sudan Medical Specialization Board Ethical Committee, written permission was obtained from the administrative authority of Ibn Sina hospital and Omdurman military hospital, and written consent was obtained from all participants. Confidentiality was considered intentionally, data was used anonymously by using identity numbers instead of names in order to protect participants' identity and keep securely, and information will be used for research purpose only. No reference to any individual participant was made in study reports.

Results:**Personal characteristics of patients:**

Regarding the age groups, most of patients were aged 18-30 years (58%), 25% aged between 46-65 years, 13% aged between more than 70 years and only 4% aged less than 31–45-year-old. Male patients dominated study population as they constituted 61% of patients with a male to female ratio of 1:1.6). Regarding the studied anthropometric measures, 58% of patients weighed 61-80 kg, 24% weighed 41-60 kg, 14% weighed more than 80 kg and only 4% weighed less than 40 kg. Height of 48% of patients was between 101-150 cm, and another 48% ranged between 151-200 cm while only 4% were less than 100 cm. (Table1).

Personal characteristics		Percentage %	p.value
Age	18-30 year	58	p ≤ 0.05 (CI 95%).
	31-45 year	4	
	46-70 year	25	
	More than 70 years	13	
Gender	Male	61	
	Female	39	
Weight	Less than 40 kg	4	
	41-60 kg	24	
	61-80 kg	58	
	More than 80 kg	14	
Height	Less than 100 cm	4	
	101-150 cm	48	
	151-200 cm	48	
Total	100		

Table. 1. Personal characteristics of Lower Ureteric Stone patients Ibn Sina hospital and Omdurman military hospital (n=100)

Stone characteristics:

The majority of patients (76%) stone size ranged between 11-15 mm and reminder had stone size between 7-10 mm. Number of stones at time of diagnosis, it was almost equal in cases of solitary or two stones with the percentages of 45% and 46% respectively, and only 9% had more than two stones. On looking to stone density on CT KUB, more than two thirds of patients (66%) had stone density of 500-1000 HU, 33% more than 1000 HU and only 1% less than 500 HU.

Management

Equal number of patients were managed by URS laser and URS pneumatic. The intra-operative proportion of stone free rate intraoperative was 87%. (Table 2)

				Option of management			P	OR	95% CI	
					URS				value	Lower
				URS laser	pneumatic	Total				
Stone Free Rate intraoperative	Yes	n	45	42	87	.277	1.7	.5	5.6	
		%	90.0%	84.0%	87.0%					
	No	n	5	8	13					
		%	10.0%	16.0%	13.0%					
Total			n	50	50	100				
			%	100.0%	100.0%	100.0%				

Table 2. Association between patients stone free rate intraoperative and management options

In half of the patient, operation lasted 1-2 hours, in 48% less than one hour and only 2% of patients lasted more than 2hours and 78% of them required DJS insertion.

Comparison between URS laser and URS pneumatic

The intraoperative stone free rate was higher in URS laser as it reached 90% compared to 84% in URS however this was not statistically significant ($p=.277$). The odds of stone free rate intraoperatively were increased by 1.7 folds in URS laser management option ($OR=.17$; 95% CI (.5-5.6). Taking into account operative complications, there was significantly less intra-operative pain ($p=.027$) and, postoperative fever in patients treated with URS pneumatic ($p=.024$) in, but there was no significant association between complications in terms of post-operative urgency, ($p=.079$) and post-operative hematuria ($p=.210$) between the two management options. The probability of post-operative pain was reduced by 3.6 times ($OR=3.6$, 95% CI (1.1-12.2)) in URS pneumatic and the risk of reduced post-operative fever in URS pneumatic was 3.1 folds ($OR=3.1$; 95% CI (1.1-8.9)). **(Table 3)**

Complications			Option of management			P-value	OR	95% CI	
				URS laser	URS pneumatic			Total	Lower
Post-Operative pain	yes	N	46	38	84	.027*	3.6	1.1	12.2
		%	92.0%	76.0%	84.0%				
	no	N	4	12	16				
		%	8.0%	24.0%	16.0%				
Total		N	50	50	100				
		%	100.0%	100.0%	100.0%				
Post-Operative fever	yes	N	44	35	79	.024*	3.1	1.1	8.9
		%	88.0%	70.0%	79.0%				
	no	N	6	15	21				

		%	12.0%	30.0%	21.0%				
Total		N	50	50	100				
		%	100.0%	100.0%	100.0%				
Post-Operative urgency	yes	N	26	18	44	.079	1.926	.865	4.290
		%	52.0%	36.0%	44.0%				
	no	N	24	32	56				
		%	48.0%	64.0%	56.0%				
Total		N	50	50	100				
		%	100.0%	100.0%	100.0%				
Post-Operative haematuria	yes	N	31	26	57	.210	1.506	.679	3.339
		%	62.0%	52.0%	57.0%				
	no	N	19	24	43				
		%	38.0%	48.0%	43.0%				
Total		N	50	50	100				
		%	100.0%	100.0%	100.0%				

*Significant

Table 3. Association between complications and management options

Duration of surgery was significantly less in patients who underwent URS pneumatic ($p=.000$) as in 80% of patients their procedure lasted in less than one hour compared to only 16% in URS laser.

The post-operative day 1 stone free rate by KUB was significantly higher in URS laser patients ($p=.004$) as 84% of patients were stone free vs only 54% in URS pneumatic patients. The probability of post-operative day 1 stone free rate by KUB was increased by 3.8 times ($OR=3.8$; 95% CI (1.5-9.7)) among patients with URS laser.

There was no statistically significant difference between the two management modalities in terms of number of stones and intra-operative stone free rate ($p=.335$). The risk of stone free rate intraoperative was increased by .971 folds (OR=.971; 95% CI (.2-.9)) among patients with two stones in URS pneumatic patients versus URS laser

(85% vs.84.6%). (Table 4). Furthermore, there was no significant association between density on CT KUB, duration of operation and management options ($p=.338$). (Table 5)

Number of Stone				Option of management		Total	P-value	OR	95% CI	
				URS laser	URS pneumatic				Lower	Upper
Single	Stone Free Rate intraoperative	yes	N	14	25	39	.335	2.8	.3	26.4
			%	93.3%	83.3%	86.7%				
		no	N	1	5	6				
			%	6.7%	16.7%	13.3%				
	Total		N	15	30	45				
			%	100.0%	100.0%	100.0%				
Twice	Stone Free Rate intraoperative	yes	N	22	17	39	.650	.971	.2	4.9
			%	84.6%	85.0%	84.8%				
		no	N	4	3	7				
			%	15.4%	15.0%	15.2%				
	Total		N	26	20	46				
			%	100.0%	100.0%	100.0%				

More than Two	Stone Free Rate intraoperative	yes	N	9	0	9	NSC				
			%	100.0%	0.0%	100.0%					
		Total	N	9	0	9					
			%	100.0%	0.0%	100.0%					

Table 4. Associations between numbers of stones, stone free rate intraoperative and management options

Again, there was no significant association between post-operative pain, DJ insertion and management option. The post-operative pain was not significantly high among DJ insertion in URS pneumatic (81.6%) with probability of .8 times (OR=.8; 95% CI (.3-2.4)). (Table 10) There was no significant association between post-operative fever, DJ insertion and management option. The post-operative fever was not significantly high among DJ insertion in URS pneumatic (85.7%) with probability of .6 times (OR=.6; 95% CI (.2-1.8)).

With regard to post-operative complications, there was no significant association between post-operative urgency, DJ insertion and management option. The post-operative urgency was not significantly high among DJ insertion in URS laser (92.3%) with probability of 1.5 times (OR=1.5; 95% CI (.2-11.8)). Moreover, there was no significant association between post-operative haematuria, DJ insertion and management option. The post-operative haematuria was not significantly high among DJ insertion in URS laser (90.3%) with probability of 2.8 times (OR=2.8; 95% CI (.612.5)).

Discussion

Data from the Urologic Diseases in America project show that rates of URS have risen among Medicare beneficiaries and privately insured individuals over time. [18] A study examining stone management in Australia shows similar

findings; the proportion of stones treated with URS has doubled in the past decade. [19] Additionally, it has been shown that physicians who have recently entered practice or recently completed training are more likely to use URS. [20, 21].

The present work aimed to make a direct comparison of Pneumatic and Laser Lithotripsy in the management of Lower Ureteric Stone, in Ibn Sina hospital and Omdurman military hospital. Our study showed that there was no significant association between stone free rate intraoperative and management options ($p=.277$). The intraoperative stone free rate was higher in URS laser as it reached 90% compared to 84% in URS however this was not statistically significant ($p=.277$). The odds of stone free rate intraoperatively were increased by 1.7 folds in URS laser management option ($OR=.17$; 95% CI (.5-5.6). This finding is in line with the statements that Laser and pneumatic are the most dependent lithotripters [22,23]. Also in accordance of Degirmenci *et al.* compare laser and pneumatic lithotripsy for treating impacted ureteric stones and reported a distal ureteral stone-free rate of 96.8% and 91.7% for laser and pneumatic, respectively [24].

Duration of surgery was significantly less in patients who underwent URS pneumatic ($p=.001$) as in 80% of patients their procedure lasted in less than one hour compared to only 16% in URS laser. Many authors reported shorter lithotripsy time of pneumatic relative to laser; however, regarding the operative time [25, 26]. Taking into account operative complications, there was significantly less intra-operative pain ($p=.027$) and, postoperative fever in patients treated with URS pneumatic ($p=.024$) in, but there was no significant association between

complications in terms of post-operative urgency, ($p=.079$) and post-operative haematuria ($p=.210$) between the two management options. The probability of post-operative pain was reduced by 3.6 times ($OR=3.6$, 95% CI (1.1- 12.2)) in URS pneumatic and the risk of reduced post-operative fever in URS pneumatic was 3.1 folds ($Or=3.1$; 95% CI (1.1- 8.9)). The operative complications were higher in the laser versus the combined group, 11.11% vs. 4.4%, respectively, which is statistically significant ($p\geq 0.05$); this is may reflect the safety of the heatless mechanism of pneumatic lithotripsy device when the working filed is narrow due to stone impaction. [17]. The operative complication rate is comparably not well with that reported in the literature which ranged widely from 4 to 28.4% [27, 28]. However, in other studies the most common complications of stone surgery are pain and infection, followed by organ injury (urethra, bladder, ureter or kidney) and bleeding [29]. This study, showed that URS pneumatic is treatment of choice in reducing complications in terms of pain and fever in addition to less duration time of operation (less than one hour). In contrast to our study findings a previous study showed that both groups did not show statistically significant differences in patient stone size, operation time, complications, and stone-free rates ($p > 0.05$) [22]. In concordance with our study many studies showed

that both PL and LL are effective and safe modalities in treating large ureteric stones with minor insignificant differences. [16]

Regarding the post-operative day 1 stone free rate by KUB, it was significantly higher in URS laser patients ($p=.004$) as 84% of patients were stone free vs only 54% in URS pneumatic patients. The probability of post-operative day 1 stone free rate by KUB was increased by 3.8 times ($OR=3.8$; 95% CI (1.5-9.7)) among patients with URS laser. This agreed with the fact that the radiation dosage for a CT-KUB has been sharply reduced, and control CT-KUB even more (≈ 1.5 mGy, absorbed dose ≈ 0.7 -08 mSv, this is a low dose) with maintained and sometimes even better results [30].

In our study there was no significant association between density on CT KUB, duration of operation and management options, $p=.338$. Also there was no significant associations between stone size, density on CT KUB and gender, $p=.091$ for density of CT KUB between 500-1000 HU and density of CT KUB more than 1000 HU, $P=.321$. Massoud *et al.* [31] stated that in patients who have stones of 500 to 1000 HU, factors such as body mass index of more than 30 kg/m² and a lower calyceal location make them less suitable for SWL. On the other hand, the study showed that the majority of patients (76%) with stone size between 11-15 mm and 24% with stone size between 7-10 mm. The success rate (stone free rate) of URS has been around 80% in the proximal ureter. It is seen in literature that URS has a higher stone-free rate for stones smaller than or equal to 10 mm in the distal ureter and stones bigger larger than 10 mm in the proximal ureter. [32]. However, Stone size is a significant factor affecting the stone-free state following any intervention for the treatment of ureteral stones. [33]

CONCLUSION

The study concluded that both URS laser and URS Pneumatic are effective and safe modalities in treating lower Ureteric Stone, in Ibn Sina hospital and Omdurman military hospital but the URS pneumatic is better in reducing complications in such as pain and post-operative fever in addition to less operative time (less than one hour).

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Abstracts

Impact Of War On Burnout Among Medical Students At Al-Neelain University In Sudan 2024

Assma Musa Abbas Hassan, Enas Kamal Abdalaziz Seyed, Mohammed Yhya Ramadan sadig ,Noha
sofyan Ali khalid ,Ruaa El.walid Bakhit Mohammed, Abrar Abd Alfattah Ahmed

AL-Neelain University faculty of Medicine

Abstract

Background: Burnout, characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, is relatively frequent among medical students due to the demanding nature of medical education. In conflict zones, such as Sudan, the challenges are exacerbated by war, which disrupts training and increases psychological stress. Despite its potential long-term consequences on individuals and healthcare systems, burnout among medical students in these settings remains underexplored.

Objective: This study aims to assess the prevalence of burnout among medical students at Al-Neelain University, Sudan, focusing on the impact of war on burnout levels. Additionally, it evaluates the students' coping mechanisms and resilience in overcoming the challenges posed by conflict and academic disruptions.

Methodology: A cross-sectional study was conducted among 259 medical students at Al-Neelain University, selected using a stratified sampling technique. Data were collected through an online close-ended questionnaire comprising three sections: sociodemographic and training-related questions, burnout assessment using the Maslach Burnout Inventory-Student Survey (MBI-SS), and evaluation of resilience using the Brief Resilient Coping Scale (BRCS). The collected data were analyzed using Microsoft Excel and the Statistical Package for the Social Sciences (SPSS).

Results: Of the total of 259 medical students at Al-Neelain University, the prevalence of burnout using the two-dimensional definition was 18.5%, while 8.1% met the criteria for three-dimensional burnout. High emotional exhaustion and cynicism were observed in 31.7% and 32.8% of students, respectively, whereas 30.1% had low academic efficacy. Factors, such as poor academic performance, unsatisfactory

social support, and lack of internet access for online learning, significantly increase burnout levels. The Brief Resilient Coping Scale (BRCS) showed that only 19.3% of students had high resilient coping, while 45.9% had low resilient coping. Resilience showed a statistically significant moderate positive correlation with academic efficacy ($r = 0.487$, $p < 0.001$) and a weak negative correlation with cynicism ($r = -0.226$, $p < 0.001$). While burnout had limited direct impact on clinical training for fifth-year students, conflict-related disruptions, such as reduced access to hospitals and inconsistent mentorship, posed significant challenges to their educational experiences.

Conclusion: The study revealed a concerning prevalence of burnout, compounded by academic and conflict-related challenges. It demonstrated the need for interventions to reduce burnout, enhance resilience, and improve resource access, which are essential to support students' well-being and ensure training continuity, especially in conflict zones like Sudan.

A Glass Microfiber Histamine Release Method To Study The Modulation Of The Host Response In Onchocerca Volvulus

Prof -Mohamed Z. Satti

Michigan State University (MSU- USA)

Abstract:

A glass microfiber histamine release method was used to study the modulation of the host response in human onchocerciasis volvulus to improve our understanding of the role of the different antibody isotypes in the development of immunity and/or clinical symptoms in *Onchocerca volvulus* infected individuals. The histamine release from umbilical cord blood basophils sensitized with sera from Sudanese individuals infected with *Onchocerca volvulus* was measured. The Study

groups consist of individuals who were infected and originally from the endemic area (n=69), individuals who are not infected and had been living in the endemic area for over 5 years (n=8), expatriate patient who are originally from outside the endemic area (n=8), negative control from outside the endemic area (n=12). There was a significant difference in the amount of histamine released by the study groups examined suggests an important role for the IgE antibodies during the infection ($P<0.01$). The expatriate patients had the highest amount of histamine, especially in the absence of microfilariae, suggests the possible involvement of IgE in microfilariae killing in this group. The specific IgE and IgG4 levels in the different onchocerciasis groups as well as in the endemic negatives (putatively immune?) suggest the importance of the balance between IgE & IgG4 in the modulation of the immediate hypersensitivity reaction and in protection against the disease. Both functional IgE (as measured through its basophil sensitizing ability and the subsequent histamine release) and quantitative IgE (as measured by ELISA) explain the severe skin reaction seen in the expatriate patients. The method of the glass microfiber histamine release used in this study provides a useful tool to study the host-infectious diseases relationship, with the aim of identifying the immune responses that might help in the protection against the infection and those that might contribute to the pathogenicity of the disease.

1. Knowledge , Attitude, and Barriers Toward Medical Research Among Al-Neelain Medical Students 2023

MAGID OMER MAHMOUD ABDALLA

5th year Student , AL-Neelain University Faculty of Medicine

Abstract:

Background : Early involvement of medical students in research during school years has led to excellence in the research field and clinical practice during their careers.

There are previous studies that try to evaluate knowledge and attitudes toward medical research in medical students in many countries.

Limited studies are conducted in Sudan. In This study, we aimed to assess knowledge, attitudes towards and identify barriers to medical research among medical students at Al-neelain University.

Methods : The cross-sectional study was conducted among medical students of Al-Neelain University. This survey involved medical students in 4th and 5th academic years. An online self-administered questionnaire was used to assess knowledge related to and attitude towards and identify barriers to medical research. SPSS version 26 was used to analyze the data.

Results: The study included 139 students. 95(68.3%) of them are female.

61 (43.9%) of them were final-year students. The mean age was (22.95 ± 1.1) .

Most students were single 135 (97.1%). Students showed an average attitude score of mean (3 ± 1.2) (out of 5). Meanwhile, a low knowledge score is revealed with (45.9%) the percentage of correct answers. Younger students had better knowledge (spearman's $\rho = -0.228$, $p=0.006$). Students with higher GPAs in their previous year had better knowledge (spearman's $\rho = 0.293$, $p=0.000$). The following barriers were the most agreed upon by students: lack of time due to being overburden with educational activities (64.8% agreed)

Lack of knowledge and skills(64.1% agreed), lack of facilities (60.4% agreed), lack of research funding (56.1% agreed).

Conclusion : This study showed a low level of knowledge and an average attitude toward medical research. Many perceived barriers were also addressed. Curriculum change and raising awareness about the importance of research among students are mandatory to ensure the improvement of the quality and quantity of research among medical students.

Predictors of Food Security and Dietary Diversity among the Internally Displaced Sudanese Children (6 – 59 months): A National Study

Gasm Alseed Abdelmonim Gasm Alseed Fadlalmoula

Shendi University Faculty of Medicine, Shendi, Sudan

Abstract:

Introduction: Sudan's ongoing conflict detrimentally impacts child nutrition. Amid 4.8 million displaced, 29% under 18 years old. By September, 3.5 million under-five children experience acute malnutrition, with 700,000 in severe condition, elevating mortality risk 11-fold. Monthly, 55,000 children necessitate malnutrition treatment since April. This study aimed to determine the prevalence and predictors of food insecurity and dietary diversity among internally displaced children from 6 to 60 months.

Methodology: A cross sectional observational analytical community-based study was conducted on 582 children aged 6–60 months. A multistage cluster sampling technique was used to select the study participants. A validated structured questionnaire was used to collect data on; sociodemographic characteristics, food security, and dietary diversity. Predictors of food insecurity and dietary diversity were identified using logistic regression. The findings of study were presented using adjusted odd ratio (AOR) with 95% confidence interval (CI).

Results: The study findings revealed that the level of household food insecurity was (84%), at risk of experiencing hunger (9%) and food secure (15.1%). Participants had mean dietary diversity score of 2.46 food groups, (82.0%) had a low or inadequate dietary diversity and (18.0%) had adequate dietary diversity. Employed households (88.0%) (aOR: 0.36, 95%CI: 0.14–0.95, $p<0.040$) were less likely to be food insecure. Household size, time walked to fetch water, and number of displaced were not significantly impact food insecurity. Most of participants depended on Non-governmental organization (80.9%) (aOR: 0.73, 95%CI: 0.35–1.51, $p<0.396$) for the social grant. In addition, household monthly income of > 100,000 Sudanese pounds (74.1%) (aOR: 0.41, 95%CI: 0.23–0.74, $p<0.003$) had a reduced chance of

providing low dietary diversity of food. Households that had received social grants from Non-governmental organizations (87.5%) (aOR: 1.17, 95%CI: 0.55–2.28, $p<0.698$), and spending 10 minutes or more to fetch drinking water (89.5%) (aOR: 3.69, 95%CI: 1.49–9.22, $p<0.005$) had a higher chance of experience low dietary diversity of food.

Conclusion: The household food insecurity and dietary diversity were high and low respectively among IDP children.

The emerging role of precision medicine in the modern era of healthcare

Mawada Elamin Mohammed Elbshir
M.B.B.S Of Medicine, Al-Neelain University

Abstract:

Introduction: precision medicine is a tailored approach to healthcare based on individual genetic, molecular and clinical information, is a revolutionizing modern medicine.

Aim: this review explores the emerging role of precision medicine in various disease area, including cardiovascular, gastrointestinal, central nervous, and respiratory diseases, we discuss the potential benefits of precision medicine, such as improved diagnosis, treatment and prevention of disease. However, we also highlight the challenges and limitations associated with precision medicine, including ethical considerations, data privacy and the need for further research.

Methods: this review explore the role of precision medicine in the modern era by reviewing 31 original articles, focused on precision medicine application in clinical settings and published in peer-reviewed journals. Articles were identified through a comprehensive search of PubMed and Google Scholar databases using combination of relevant keywords, including “precision medicine”, “personalized medicine” and “genomics”.

Conclusion: This review indicates while precision medicine has potential in many diseases, challenges remain in handling and interpreting vast amounts of patient data. Ethical considerations and data protection are crucial. Despite these hurdles, precision medicine transforms healthcare, empowering patients and doctors to achieve better health through personalized care.

Perception of Curriculum Role On Academic Stress Among Medical Students at Al Neelain University 2021.

Mohammed Yassin Osman Albashir

M.B.B.S Of Medicine, AL-Neelain University

Abstract:

Introduction:

The academic stress affecting the student is a major threat to their mental health. Improving the educational environment should be one of the factors helping in medical students' mental health promotion. The importance of stress-free medical students comes from their future mission to treat the stress from others and very limited studies in the medical education were conducted in our country regarding the curricular changes and its mental health effect.

Objective:

To provide the students opinion about the association between their academic stress and the faculty curriculum, to determine the specific parts that stress the students in the curriculum.

Methodology:

All medical students from all levels in the faculty were surveyed. Self-administered anonymous questionnaire was designed to gather information on student perception about curriculum association with academic stress,

Results:

Out of 297 sample 84. % of them answered that the curriculum is a source of their academic stress, majority of students agreed on teaching and assessment methods are not helpful on their stress. There is variety of answers regarding the most stressful level. 87.5% of the participants agreed with curricular changes must be done to improve student's mental health.

Conclusion and recommendation:

The faculty curriculum is a cause of stress for the majority of the sample collected. To improve the mental health of medical students, curricular adjustments are required. Considering the curriculum, teaching methods, assessment, and academic load levels.

Conflict of interest: No conflict of interest

Keywords: Medical students, academic, stress, curriculum.

Knowledge, Attitude And Practices Of Opioids Among Medical Students at Al-Neelain University 2023-2024

Mohamed Kamal Elshareif Gasim ,Khobaib Abbas Abdin Osman ,Ethar Yassir Bakhit
Elkhidir ,Ashraf Salah Abdelfatah Mohamed ,Arwa Aboelgasim Osman Mukhtar, Zeinab
Salah Abbas Ali ,Abrar Abd Alfattah Ahmed Osman ,Ibrahim Adel Hamdoun Aziz

Abstract

Background: Opioids, a class of medicines found in the opium poppy plant, are often used to treat moderate to severe pain. However, they are highly addictive and can lead to opioid overdoses and life-threatening deaths. Long-term use can develop tolerance in some people, requiring larger or more frequent doses to achieve desired effects. Common side effects include sedation, constipation and respiratory depression. In 2021, 296 million people, 5.8% of the global population aged 15-64, used drugs with 60 million being opioid users. 39.5 million will start abusing in 2021. Tramadol is the most common type of opioid to be used in Sudan.

Objectives: To assess the knowledge, attitude and practice regarding opioids use among Al-neelain university's faculty of medicine **Methodology**

This is a descriptive, institutional-based, cross-sectional study conducted on 309 medical students from Al-neelain university in Khartoum, Sudan. The data was collected through a structured self-administered questionnaire, which was developed in English and shared with medical students via social media platforms. Data collection takes place from January through February 2024. Statistical package for social sciences program version 26 was used for data analysis, frequency tables and charts were used to present the analyzed data

Result: A total of 309 medical students participated in this study, of whom 172 were females and 137 (44.3%) were males. The mean age of respondents was 21.6 with a minimum of 17 and a maximum of 30. Most of the participants were in their first academic year 20% (66). Of the participants, 212 (73.9%) knew that drowsiness or (sedation is an opioid side effect. One hundred and twenty-eight participants agreed that psychological problems contribute to opioid usage in young people. Most of the respondents (73.4%) had never had a personal experience with opioid use or misuse. The most common disorder suffered by opioid users was depression 31 Most participants believe that educational programs foster knowledge of

Opioids. Social media was the main source of information selected by participants 37%.

Conclusion: The study indicates a poor level of understanding among AlneelainUniversity medical students regarding opioid use, indicating a negative attitude and practice. This knowledge is crucial for developing educational initiatives and addressing potential abuse behaviors, primarily sourced from social media

Recommendation

The study suggests opioid-related educational campaigns, training programs for medical students, and enhancing medical curricula with interactive sessions and seminars concerning opioids and their adverse outcomes

Key words: knowledge, attitude, practice, medical students, opioids, pain management.

Cutaneous leishmaniasis and poverty in the MENA region (Middle East and North Africa)

TAKZIMA MOHAMMED-YASSINE

University Cadi Ayyad

Abstract:

The World Health Organization (WHO) considers leishmaniasis a group of neglected tropical diseases (NTDs) affecting 12 to 15 million people in 88 countries; it represents a serious health problem in the Middle East and North Africa region (MENA). Several studies worldwide show a link between poverty and the risk of developing Cutaneous Leishmaniasis (CL). To demonstrate this relationship, we compared the number of CL cases reported between (2005 and 2021) against the poverty rate of the MENA countries. The data were extracted from World Health Organization (WHO) epidemiological reports and the World Bank data. As a result of data analysis, the poverty rates of 2.15 and 3.65 dollars are correlated to the CL prevalence with a p-value highly significant (Pearson's $r = 0.408$; $p\text{-value} = 0.002$ and Pearson's $r = 0.382$; $p\text{-value} = 0.004$ respectively). Consequently, public investment in treating and controlling CL can reduce the disease burden and alleviate poverty in the MENA region.

Keywords: Cutaneous leishmaniasis; Poverty; MENA; Middle East and North Africa.

Factors Affecting Development of Cardiovascular Disease among Hemodialysis Patients in Al khartoum Bahri Health Center

Mehad Siddig Gurashi Ahmed

M.B.B.S AL-Neelain university faculty of Medicine

Abstract:

Background: Cardiovascular disease is a class of disease include coronary artery disease such as Angina and myocardial infarction. Other cardiovascular disease include stroke, heart failure hypertensive heart disease, cardiomyopathy, heart arrhythmia, valvular heart disease. peripheral artery disease and venous thrombosis. Cardiovascular disease is precipitated by chronic kidney disease and it's the first cause of death in patients with chronic kidney disease on hemodialysis. In this population the mortality due to cardiovascular disease is twenty times higher than in the general population and majority of hemodialysis patients have cardiovascular disease.

Objective: To assess the frequency and most common cardiovascular disease and factors affecting its development among hemodialysis patients in Al khartoum Bahri health center for renal disease and dialysis

Methodology: A descriptive cross sectional study of one hundred and four patients, who where selected by convinced sample direct interview questionnaire were used, excel and statistical package for the Social Sciences were used for data analysis, frequency tables and charts for analysis of data.

Results: A total of one hundred and four patients were included in the study. Fifty-nine percent of the patients above fifty one years old, seventy percent were male forty-eight were undergoing dialysis for five years or more, ninety-two had two session of dialysis per week, hypertension was the most common cause of renal failure in twenty seven percent of patients. Out of which sixty- one percent of patients developed cardiovascular disease after dialysis, thirty-six developed hypertension and twenty-one developed arrhythmia Among all cardiovascular risk factors the male gender was the most common risk factor seventy percent, followed by ages of fifty and above in fifty-nine percent and hypertension in forty-eight percent of patients. The most common complications of dialysis was loss of body weight in seventy-six percent of the patients, followed by anemia in seventy-third percent.

Conclusions: Hemodialysis patients are more likely to develop cardiovascular complication because they have disease-related risk factors. There is higher prevalence of many traditional factors for cardiovascular risk (age, male gender, hypertension, diabetes, dyslipidemia and physical inactivity), so it were more likely to influence the development of cardiovascular disease. Therefore, More concern should be shown for hemodialysis patients to control and prevent cardiovascular events and to decrease morbidity and mortality rates and improve the quality of life.

Recommendations:

Nephrologists should attempt to give optimal treatment for well-established cardiovascular risk factors such as anemia, hypertension, diabetes and dyslipidemia and to raise the awareness of hemodialysis patients of cardiovascular risk and educate hemodialysis patients to control cardiovascular risk factor.

The Psychological Impact of war in Sudan on Al-Neelain medical Students 2024

Alkrrar Saeed Mohamed 2. Esraa Bashir Abd-Eljabar 3. Ibrahim Abdul-Basit Ibrahim 4. Mennatalla Khaled Eltohami 5. Reem Ahmed Mustafa

M.B.B.S Of Medicine AL-Neelain University

Abstract:

Background:

Medical education can cause a lot of stress to medical students, which can affect their mental health and lead to psychological impact to their health. In addition to the already presented stressors, Sudanese students find themselves in a battle with another stressor which is war.

Objective:

To evaluate depression, anxiety and stress levels and their correlation to each other and to appetite, enjoyment of food taste and motivation to study due to war in Sudan in Alneelain medical students.

Methodology:

A descriptive cross-sectional study of 291 medical students, who were selected using multistage stratified sample technique. We used online questionnaire who was composed of three sections, first was the sociodemographic section, the depression, anxiety and stress scale section, and the appetite and pleasure of food taste and motivation to study section. The results were analyzed using excel and statistical package for the social science.

Results:

In 291 students from Alneelain university, predominantly female (65.4%). Prevalence of depression, anxiety, and stress were 50%, 26%, and 20.9% respectively, with high prevalence of stress in batch 20 students. It was also found that the more the level of stress the more likely for the student to lose appetite and motivation to study.

Conclusions:

In conclusion we found that there is high prevalence of psychological impact in medical students especially in the final year students (batch 20), especially in females. That is why it is of importance to search for the causes of this issues, screen students once a year in search for psychological distress, provide financial and social support, and provide individual counseling for stress management.

**Factors Contributing to Provider Initiated Testing and Counselling
for Human Immunodeficiency Virus In Tuberculosis Management
Units In Public Health Facilities Khartoum State -2022**

Abrar Adam Mohamed Idris, Professor Daffallah Alam Alhuda

Al-Neelain University, Faculty of Medicine

Abstract:

Background: Provider-initiated HIV testing and counselling refers to HIV testing and counselling which is recommended by health care providers to persons attending health care facilities as a standard component of medical care to achieve United Nations for acquired immunodeficiency syndrome (UN AIDS) “90-90-90” target in to diagnose 90% of infected individuals by HIV, 90% of them will be on antiretroviral

therapy (ART) and will achieve sustained virology suppression for 90% of them to reduce the morbidity and mortality of late Human Immunodeficiency Virus (HIV). Aim To study the factors that affect provider-initiated testing and counseling for HIV in Tuberculosis management units (TBMUs) in public health facilities, in Khartoum state

Research Methods: the study design was Institutional based descriptive cross-sectional study. Study took place at TBMUs in public health facilities in Khartoum state sampling technique used was simple random sampling to select TBMUS and Total coverage for selecting of health provider, Data collection methods is check list and In-depth interviews for stakeholders. Data analysed by Microsoft excel and SPSS27 and thematically methods .**Results:**65% of the providers had been trained on PITC but only 40% provide the service. The majority of providers 90% educated the patients about relationship between HIV and TB Only 45% use to counsel patients after the results of HIV test in TB patients. The majority of providers transform patients with positive results for ART.35% of providers think that the cause of not providing the service referred to political reasons. There's 14.3% of the clinics. That provid PITC have no posters neither for Tb, HIV nor for relationship between them both. Labs were far away from clinic in 52.1%. The majority of stakeholders didn't participate in making the PITC policy. Half of stakeholders think that the scarce of supplies is the biggest challenge that faced them. **Conclusion** challenge that faced the program is scarce of supplies, turnover of the trained providers, HIV test lab is far from clinic which may lead to patients refuse taking HIV test and Lake of illustrative posters about TB. AIDS and relations between them which has very important role in education of patients that increase acceptability to pitc. Also director of Care and Treatment HIV Unit and director of HIV Management reported that private hospitals didn't give the results of HIV. **Recommendation:** According to the findings of the study we recommend: Seriousness in providing the PITC service by the health care provider. Providing incentives for them. Providing sufficient supply for the service, providing HIV lab near to each TB clinics, and HIV testing tools for examination in all TB clinics on a permanent basis. Coordination between the Tuberculosis Department and the AIDS Department regarding the patient's report (examined. Not examined, or not received) Excluding the AIDS program from political relations and the work of PITC sessions with local support and organization by hospitals and not relying on external support only. No conflict of interest.

Keywords:Provider Initiated Testing and Counselling, Human Immunodeficiency Virus, Tuberculosis Management Units.

Knowledge, Attitude, And Practice of Female Genital Mutilation (FGM) among Al-Neelain University Medical students In Sudan 2024

Ayat Ali Mohamed Ahmed, Razan Elmamoun Abdelhalim Mohamed, Sondos Yassir Ibrahim Ali

M.B.B.S of Medicine Al-Neelain University

Abstract:

INTRODUCTION/BACKGROUND

Female genital mutilation (FGM) is described as ‘all procedures involving partial or total removal of the external female genitalia or other injury to the female genital organs for non-medical reasons. It is considered gender-based violence and a negative social norm. FGM is a common practice throughout Sudan, with a prevalence rate of 86.6%. In sixteen states out of eighteen, more than half of all girls since birth underwent FGM before turning 15. They further expect that if they don’t respect social rules, they will suffer social consequences such as derision and loss of status. FGM remains largely absent from the medical curricula despite being a significant public health issue.

OBJECTIVES/AIMS

- To assess the knowledge, attitudes, and practices of female genital mutilation (FGM) among Al-Neelain University medical students in 2024.
- To evaluate the level of knowledge among medical students regarding the definition, different types, and health implications of female genital mutilation.
- To assess the attitude of medical students towards FGM in association with cultural, ethical, religious, and medical perspectives and socioeconomic status.
- To assess the practice of medical students toward FGM, future attempts, and advocacy concerning community awareness initiatives.

- To determine the factors influencing medical students' knowledge, attitudes, and practices towards FGM..

METHODS:

The study was conducted as an observational descriptive cross-sectional institutional- based study; the participants were selected by simple random sampling method. The number of participants was 292, and the data were collected through an online Google Forms-structured self-administered questionnaire, which was sent via social media applications. The data was analyzed using the Statistical Package for Social Sciences software version 26. Informed consent was obtained from all participants.

RESULTS

Knowledge of the study subjects about FGM was moderate in general (41%). The majority of students answered that they knew about FGM from their families and community (n=158, 54.1%). Only 36.2% said they knew about FGM from college. Most of the participants who have good attitude (n = 220; 90.2%) came from urban areas. The majority of participants (n=258), 88.4%, have a good attitude toward FGM. There was a strong and significant association found between attitude toward FGM, residency, and a father's level of education. Most participants (n = 123), 90.4% with higher education degrees, have a good attitude.

Participants have moderate practice (n=238), 80.5%; with (n=51), 26% of participants underwent FGM. There was a strong and significant association between average monthly income, residency, and practice level, where good and moderate practice levels are affected by higher family income. Over 55% of the participants are not aware that the transitional Sudanese government in 2020 criminalized Female Genital Mutilation (FGM), whereas the remaining are informed about this legislation.

CONCLUSIONS

We found that the majority of students have moderate knowledge and good attitude and moderate level of practice regarding FGM. The majority of the participants recorded that they will not circumcise their future daughters, and the rest of the participants who agreed did so for mostly religious reasons. The majority of respondents have not participated in activities against FGM or received information about FGM in college. Regarding the factors that may influence the medical student's knowledge, attitude, and practice toward FGM, we found strong statistically significant associations with gender (female), Academic year (seniors), and knowledge level. The female participants who underwent FGM strongly disagree with FGM practices.

ACKNOWLEDGEMENT

We would like to express our sincere gratitude to our families, seniors and colleagues for the continuous guidance, advice, and support throughout the research phase. Also, We would like to thank all the research participants for their time and interest in being part of the research.

IMPLEMENTATION OF RISK COMMUNICATION TOWARD ACHIEVEMENT OF RESILIENT HEALTH CARE SYSTEM AMONG DOCTORS AT KHARTOUM- 2022.

Abrar Abd Alfattah Ahmed

M.B.B.S of Medicine , AL-Neelain University

Abstract:

Background:

During a crisis, an open and empathetic style of communication that engenders the public's belief is the most advantageous when officials are attempting to impress the population to take an effective action or refrain from a hazardous act. Although belief is essential in a crisis, public suspicions of scientific professionals and government are growing for a variety of reasons, which includes access to greater sources of conflicting information.(16).Humans all over the world face a extensive array of health risks.

Objectives

To explore the implementation of communication risk among doctors in order to achieve sustainable health care system.

Methodology:

Cross sectional study was conducted among Doctors at Khartoum working in different facilities. Sample size of unknown population equation was used with a confidence level 95% equals 323 participants, 264 responded to the questionnaire. Which was developed using WHO guideline for risk communication 2017.

Results:

Chi-square to test differences and identify the practice of emergency risk and T test results to assess emergency risk communication practice .58.2% were female and 42.8% were males. 52.1% were house officers, 17.1% consultants, 16.3% general practitioners and 14.4% registrars.

Working in hospitals 74.5%, 10.3% in PHC ,9.9% works at private clinics.57.4 noted the accessibility of services linked to risk communication , . 49% said that authorities do express facts and interventions in details while 30.4% don't see that happening and 20.5% said maybe.

55.9% stated that the community is involved in risk communication interventions, while 44.1% said there is no involvement of community. 56.7% sees that ERC is implemented in emergency response teams. While 43.3% said that there is no such implementation. 51.3% encountered construction of ERC network while 48.7% don't. Regarding involving of stakeholders 51.3% said no, while 48.7% said yes.

63.9% said that messages enhance health prevention behaviours , but the reverse is documented in 36.1%

A majority of responses concluded with (50%) maybe answers, followed by No answers with (40%), (0.73) of mean compared to the three point likert scale it concerned as No.

Conclusion:

Risk communication condition is above average and need more interventions and attentions. As we are facing urgent disasters that require rapid response teams that are well prepared and focused.

Recommendations

This research recommends to doctor's goal setting, openness, balance, and competence in order to achieve sustainability and resilience of health care services at all situations no matter what happens.

Keywords

Implementation, Application, Risk communication, crisis, Resilient, Pandemics.

Sleep hygiene, mediating the association between circadian typology and psychological distress: an association elicited by Mediation analysis Model among young Sudanese adults, 2022-2023.

Shima Algam mohamd musa, MBBS; Arwa Nogdalla, MBBS; Ahmed Abdelghyoum, MBBS; Maab Osama, MS4; Majed Omer, MS5; Fatima Fathelrahman, BMLSC; Ayad abdullah, MBBS; Riham Abdulmonem, MBBS; Anas jafar, MBBS; Ayman Izzaldin, MBBS; Adnan Altayb MBBS

Abstract

Introduction: Circadian rhythms are regulated by genetic and environmental components. The association of intrinsic and extrinsic factor modulates physiological and individual sleep schedules sleep hygiene and even different chronotype. Evidence suggests evening-type individuals have a higher risk of reporting psychological distress than morning-type individuals. However, less is known regarding the underlying processes that might mediate this association among Sudanese young adults. This study aimed at assessing the mediating role of sleep hygiene on the relationship between circadian typology and psychological distress among young Sudanese adults.

Method: this is a cross sectional study. Conducted among medical students, graduates and medical interns of AI-Neelain University. Between April and August 2022. Morningness–Eveningness 19 items Questionnaire (MEQ) was used to assess chronotype preference. Kessler 10-item Questionnaire was used to assess Psychological Distress, and sleep hygiene index (SHI) was used to screen Sleep hygiene behaviors. Hayes PROCESS macro (model 4) was used to perform the mediation analysis.

Results: Among 303 medical students who complete the study questionnaire. Mean of age for study participants was (22.71 ± 2.49) . Sleep hygiene index mean score was (29.35 ± 5.46) indicating poor sleep hygiene behaviors. Most of the population were Neutral in their circadian typology preference (58.1%) . (89.8)% of our population had psychological distress, there was strong relation between sleep hygiene and psychological distress ($P < 0.01$). Individuals who were severely psychologically distressed mostly had higher sleep hygiene mean scores than normal individuals (29.35 ± 5.46) , (21.61 ± 6.42) . Multiple regression analysis results showed that Psychological Distress had a negative correlation with chronotype and was positively correlated with sleep hygiene ($r = -.141$, $p = .014$), ($r = .466$, $p = .000$) respectively, the result also revealed a significant indirect effect of sleep chronotype on Psychological Distress ($b = .0106$, $t = 5.7144$, $se = .122$) ,according to bias-corrected percentile bootstrap method the total effect was positively

significant ($b=.0534$, $p<0.05$, $SE=.0543$, 95% CI $[-.2280 \text{ } -.0178]$) through full complimentary mediation between Psychological distress and chronotype through sleep hygiene behaviors. $p<0.05$).*

Conclusion: Sleep hygiene was found to mediate the correlation between Chronotype and psychological distress, Improvement of Sleep hygiene behaviors is advised to enhance morning circadian typology as to prevent and reduce psychological distress. Interventions to enhance morning circadian typology should be prioritized to medical students, graduates and medical interns who are prone to eveningness to minimize the risk for psychological distress.

Mother's Knowledge, Attitude And Practice Regarding Paediatrics Immunization And Immunization Compliance In Shendi City And Its Suburbs

AMNA ABDALHADI ABDALMAJEED AHMED

Shendi University

Abstract:

Background:

Vaccination is one of the most effective and cost-efficient strategies in public health. Despite its importance, immunization coverage remains suboptimal, particularly in developing countries like Sudan. This is the first study of its kind in Sudan aiming to assess the knowledge, practices, and attitudes of Sudanese mothers toward the immunization status of their children below five years.

Methodology:

This study was a cross-sectional observational study A cross-sectional Observational study, conducted on a 100 Sudanese mothers whom their Babies were under 5 years old who are live in Shendi city and its suburbs, between January and February 2024. The data was collected via a standardized questionnaire and analyzed using SPSS Version 25.

Results:

This study emphasized that nearly half of the mothers (47%) who participated in this study had education levels of primary school or less, with a major majority of them (89%) being unemployed. Access to vaccination facilities was limited, with (56%) lacking a nearby center; of those with access, (38%) used primary health centers, (6%) used government hospitals, and (2%) used private hospitals. Regarding Immunization adherence, only (39%) of children were fully vaccinated according to the EPI schedule for Sudan, despite most (95%) of mothers believing that vaccination prevents disease. There are significant knowledge gaps as most mothers don't know the difference between vaccine types. Only (35%) understood that active immunization involves weakened pathogens, and more than half of them (53%) were unaware of the role of antibodies in passive immunization.

Conclusion:

The findings revealed significant limitations in vaccination accessibility, and poor knowledge of mothers toward children immunization status.

PREVALENCE OF PTSD , ANXIETY AND FACTORS ASSOCIATED WITH THEM AMONG INTERNALLY DISPLACED SUDANESE CHILDREN IN DURING WAR IN ALJABALAIN WHITENILESTATE, SUDAN,2024

EMAN A.BABKIR*¹, EKHLASS A.EISA², MANASIK M. MOHAMED AHMED³, SHAHAD A. IBRAHIM³, ABRAR A. AHMED⁴

¹Medicine , Alneelain University , Kostie, Sudan, ²Medicine , Alneelain University , Dubai, United Arab Emirates, ³Medicine , Alneelain University , Jedah, Saudi Arabia, ⁴Medicine , Alneelain University , Oman, Oman

Abstract

Introduction:

Sudan is currently experiencing the largest child displacement crisis worldwide. Since the conflict erupted in 2023, over 4.6 million children have been internally displaced within Sudan, and nearly one million are seeking refugee in neighboring countries (UNICEF, 2023). The mental health of these children has been overlooked, and there is a noticeable lack of data on their psychological wellbeing.

Objectives: To assess the prevalence of PTSD, anxiety and factors associated with them among internally displaced Sudanese children during war in IDP camps in Al Jabalain district, White Nile state, Sudan, 2024

Methods: A cross-sectional study was conducted among internally displaced Sudanese children in 11 camps in Al Jabalain district. Children were interviewed using a standardised questionnaire consisting of the PTSD Civilian Checklist Version 5 and the Hamilton Scale to assess the prevalence of PTSD and anxiety. Data analysis was conducted using IBM® SPSS, version 26.0.

Results:

The sample included 223 children; their age median was 12 years (IQR: 9 -15). 127 (57%) of them were females, with majority 128 (57.4%) in primary school. 150 (67.3%) participants had mild anxiety, with a median score of 11 (IQR: 9-14). Participants who met the criteria for probable PTSD were 23 (14.3%), (median: 32, IQR: 17-28). Older children had higher levels of PTSD and anxiety. Also, both scales were significantly associated with gender, displacement frequency, financial problems and separation from close ones (p value < 0.05). Children displaced more than four times were more prone to clinically significant PTSD and moderate to severe anxiety. Interestingly, recently displaced children were more likely to have higher PTSD scores and lower anxiety scores. Educational level was significantly associated with PTSD (p -value < 0.05), with about one-third of high school students experiencing PTSD symptoms. The anxiety scale was significantly associated with direct exposure to violence (p -value < 0.05), as 13.6% of those exposed to violence experienced mild to moderate anxiety.

Conclusions: This study identified significant levels of PTSD and anxiety among internally displaced children in the Al Jableen camps, highlighting the urgent need for mental health interventions, which promotes resilience and coping skills. Factors such as age, gender, frequency of displacement, direct exposure to violence, and educational level significantly impact the development of these mental health conditions.

Prevalence, Factors, and Perception Against Covid-19 Vaccine Uptakes Among Clinical Years of Medical Students at Al-Neelain University, Sudan, 2021

Authors

Ebtihal A. El-Hadi, Osama Khatim, Moneer A. Abdalla, Murtada A. Abdalla, Almoeiz Y. Hammad, and Safa A. Elbashir

Abstract

Aim

This study was conducted in the Faculty of Medicine at Al-Neelain University, Khartoum, Sudan, to study the prevalence, factors, and perceptions against COVID-19 vaccine uptake among clinical year students.

Background

Medical students are among the frontline healthcare providers most likely to come into contact with COVID-19 patients. As soon as a vaccine is available, it is critical to achieve high COVID-19 immunization coverage rates in this group. They will be responsible for offering vaccine recommendations and counseling vaccine-hesitant individuals as future healthcare providers.

Research Methods

This research was conducted in the Faculty of Medicine at Al-Neelain University. Data from 180 clinical year students were collected using an online Google Forms questionnaire, which was adapted from similar studies and standardized surveys. Verbal consent was obtained from each participant.

Results

The study included 180 students, of which 50 (27.8%) were vaccinated, and 130 (72.2%) were unvaccinated. The majority of the vaccinated group were fourth-year students (34, 32.4%). No significant differences were found between males and females regarding vaccine uptake (p -value = 0.1). However, there was a significant correlation between age and receiving the COVID-19 vaccine (p -value = 0.04), with students aged 19–20 years being the most vaccinated. Reasons for vaccine hesitancy included:

- 17%: Lack of trust in vaccine safety and concerns about side effects.
- 7.1%: Doubts about vaccine effectiveness.
- 6%: Unawareness of where to get vaccinated.
- 0.5%: Religious objections.

Conclusion

This study highlights a large number of unvaccinated medical students and underscores the need for an educational curriculum to address the safety and effectiveness of COVID-19 vaccines. Such efforts are essential to promote vaccine uptake among medical students.

**Perceptions of Medical Students Regarding Rural Residency:
A Study at the Faculty of Medicine, AI-Neelain University,
Khartoum, Sudan, 2022**

Moneer A. Abdalla¹ and Dafalla Alam Elhuda¹

1 Community Medicine Department, AI Neelain University, Khartoum, Sudan

Abstract

Rural residency programs in medical education aim to prepare students for healthcare in underserved areas by enhancing their clinical skills, research capabilities, and teamwork. This cross-sectional study explores medical students' perceptions of rural residency at AI-Neelain University in Sudan. Data were collected through questionnaires administered to 110 students and interviews with experts. Findings indicate that rural residency improved students' knowledge, skills, and empathy towards rural health. However, challenges such as cost and faculty engagement were noted. Recommendations include increased funding, integration of rural residency into curricula, and further research to optimize program impact.

Keywords: AI-Neelain University, Rural health, medical education, student perceptions and Sudan.

Demographic Factors, Biochemical Markers, and Obstetric History Associated with the Risk of Preeclampsia in a Sudanese Population Sample

By

Faris Mohamed Awad Abdon

MBBS, M.Sc., PhD (Candidate) Al Neelain University

Abstract:

Background:

Preeclampsia significantly contributes to maternal and perinatal illness and death, particularly in low and middle-income countries like Sudan. It is classified by onset timing (early vs. late) and severity (mild vs. severe) and is one of the four hypertensive disorders in pregnancy, including chronic hypertension, gestational hypertension, and chronic hypertension with superimposed preeclampsia. This study aimed to evaluate the demographic, clinical, and biochemical predictors of preeclampsia among Sudanese women.

Methods:

This case-control study involved 100 women diagnosed with preeclampsia and 100 healthy pregnant women who acted as the control group at Omdurman Maternity Hospital in Khartoum State, Sudan, from 2019 to 2021.

Data on sociodemographic characteristics, obstetric history, and biochemical markers, including platelet counts, were collected using a comprehensive questionnaire and blood sample analysis.

Results:

Women with preeclampsia were more frequently over the age of 40 (OR=9.33, 95% CI: 4.54-19.19, $p < 0.001$) and had a longer median duration of marriage (OR=2.9, 95% CI: 1.51-5.58, $p=0.001$). Lower educational levels ($p=0.008$) and being housewives ($p=0.024$) were also more prevalent in the preeclampsia group. Clinically, headache (OR=18.98, 95% CI: 2.44-147.5, $p=0.005$) and blurring of vision (OR=25.83, 95% CI: 1.17-572.6, $p=0.04$) were more prevalent in women with preeclampsia. Biochemical markers showed lower platelet counts ($p=0.002$), higher levels of alanine aminotransferase (ALT) (OR=2.23, 95% CI: 1.51-3.28, $p < 0.001$) and creatinine (OR=16.76, 95% CI: 2.31-121.5, $p=0.005$), while aspartate aminotransferase (AST) was not significantly associated with preeclampsia.

Conclusion:

Family history of preeclampsia was the most significant predictor. Other important risk factors included older age, longer duration of marriage, lower education levels, headache, blurring of vision, and higher levels of alanine aminotransferase (ALT) and creatinine.

Keywords:

Preeclampsia, Demographic Factors, Biochemical Markers, Obstetric History

Acceptance of Coronavirus Disease Vaccination among Medical and Dental Students at Taiz University, Yemen, 2021

ESRA TAWFIK SAEED AL-QADASI
M.B.B.S Of Medicine , AL-Neelain University

Abstract:

Background: COVID-19 is still a major global threat for which vaccination remains the ultimate

Solution. Medical students are among the group of frontline healthcare providers likely to be exposed to COVID-19 patients. It is important to achieve high COVID-19 vaccination coverage rates in this group as soon as a vaccine is available. As future healthcare providers, they will be entrusted with providing vaccine recommendations and counseling vaccine-hesitant patients.

Aim:

The study aimed to assess COVID-19 vaccine acceptability, hesitancy, and associated factors among medical and dental students in.

Methods:

A cross-sectional study was carried out among medical and dental students in one of the main university in Yemen, Taiz University. A self-administered paper questionnaire was filled by 358 medical students from 26 to 31 August 2021.

Results:

We surveyed 360 students, (59.2%) were medical students, (41.3%) aged 21, 22. The majority of the participant students (93.6%) perceived the importance of the COVID-19 vaccine development. COVID-19 vaccine acceptability was (49.7%), vaccine hesitancy (28%) and vaccine refusal (22.3). with acceptability level were higher among male, (56.1%) medical students, who had previous experience with COVID-19 infection. The most confirmed reasons among non-acceptant students were deficient data regarding the vaccine's adverse effects, non-safety and non-effectiveness of the vaccine, and not trusting in Yemeni health institute.

Conclusion:

We concluded that half of students are willing to take vaccine with lower acceptance among dental students and the most common barriers were inadequate information and non-safety and non-effectiveness of the vaccine.

Recommendations:

This study highlights the need for an educational curriculum about the safety and effectiveness to promote uptake of the COVID-19 vaccine and organizing seminars to fight misunderstanding

Perspective of health care providers on Communication and Collaboration with Traditional Healers for Patient Benefits in Sudan 2022, 2023

Islam Alsharif Ali AbdelrahmanAL-Neelain University

Abstract:

Background:As estimated by WHO, millions of African population seek traditional healers to treat them.Traditional healers are markedly appreciated because they are more accessible, cost effective, shares the patients same culture and beliefs .In Sudan, researches on the perspective of health care providers on collaboration with the traditional healers were limited in mycetoma and mental health . This study assessed the role and barriers of health care providers on communication and collaboration with traditional healers for patient penifit .

Method: This study was conducted based on a cross sectional study design . Pretested, coded self administered questionnaire was used in 78 unit of health care providers targeting three hospitals in Khartoum state. Data were analysed using SPSS version 25

Results: 46.2% of the participants supported the idea of communication and collaboration with the traditional healers, with 47.4% of them make a suggestion regarding creation of health centers for mutual understanding and sharing knowledge Another suggestion was about referring of patients between health care providers and traditional healers (12.8%) . Regarding the the barrier against communication and collaboration, the dominant among the options was that traditional healers lack education and unable to

comprehend medical instructions with 32.2% of responses .Concerning the results about the role of this communication and collaboration in benefiting the patients , 44 .6 % of results were about reducing disease complications as a result of wrong treatment or use of wrong method. 44.6% of responders considered their role as a health care provider to achieve such collaboration in advising and counseling a patient with history of going to traditional healer . others were about about listening and giving a constructive criticism to a traditional healers (23.9%).

Conclusion: The negative opinions were slightly higher than the positive ones . Absence of transparent management structures and policies for collaboration impedes the collaboration between both parties.

Recommendations: To attain universal health coverage collaboration with traditional healers should be promoted. Establishment of qualified centers in Africa and here in Sudan that serves as understanding platform and researches in traditional medicine will be helpful. Studies that presents the views of traditional healers themselves regarding collaboration with health care providers is needed.

Key words : Health care providers, traditional healers, collaboration

Satisfaction And Preference Of Medical Students Towards Virtual And Traditional Learning At Al- Neelain University 2022

OSMAN TARIG AHMED ABDULRAHMAN (with others)

AL-Neelain University

Abstract:

INTRODUCTION: In response to recent global health crises, educational institutions have progressively transitioned to virtual learning, significantly impacting education globally, including medical education that integrates theoretical and practical skills. Understanding medical students' perspectives on these modalities is essential for designing curricula that effectively address both academic and professional standards.

OBJECTIVES: General: To assess satisfaction and preference of Medical Students at Al-Neelain university towards virtual and traditional learning. Specific objectives: To assess satisfaction towards virtual and traditional learning and to assess preference regarding virtual and traditional learning in Al-Neelain medical students.

METHODS: This study was an institutionally-based descriptive cross-sectional study, Study setting was held online using self-administered questionnaire in a google form sent only for the selected sample out of medical students of Al-Neelain University. The study population was the current officially registered bachelor's undergraduate students of the Faculty of medicine at Al-Neelain University (batches 19 to 24), The Sample size was 296 obtained through the formula $n = N / (1 + Nd^2)$, The sampling technique was the proportional stratified systemic random sampling technique, we divide the study population into 6 strata according to student levels, the proportion of sample size was applied on each stratum, The study variables were designed around specific objectives, utilizing scales to assess both satisfaction and preference for virtual versus traditional learning methods. Data was collected through the Google form app assigned to each batch, Questionnaire items were tested for reliability and found to be reliable (Cronbach's coefficient; 0.70). Data was analyzed using SPSS version 26.

RESULTS: In the results, 42% of students were neutral regarding engagement in class activities, while 40% admitted to feeling bored during sessions. For communication with instructors, 35.4% expressed neutrality, and 36.4% were neutral on receiving feedback in virtual settings. Dissatisfaction was also noted with the online system's speed, with many students preferring traditional formats. Notably, 37.1% disagreed that face-to-face learning is more challenging than virtual learning, indicating a clear preference for traditional methods. Gender differences emerged: males showed greater comfort in voicing opinions in class ($p=0.004$), and 23.8% of batch 23 agreed on e-learning as a suitable mode compared to lower agreement across other batches.

RECOMMENDATION: The study recommends further research to better understand medical students' satisfaction with these modalities, alongside developing a strategic plan at Al-Neelain University to support and enhance both online and traditional learning through continuous assessment and refinement.

Satisfaction And Preference Of Medical Students Towards Virtual And Traditional Learning At Al- Neelain University 2022

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neutrality, and 36.4% were neutral on receiving feedback in virtual settings. Dissatisfaction was also noted with the online system's speed, with many students preferring traditional formats. Notably, 37.1% disagreed that face-to-face learning is more challenging than virtual learning, indicating a clear preference for traditional methods. Gender differences emerged: males showed greater comfort in voicing opinions in class ($p=0.004$), and 23.8% of batch 23 agreed on e-learning as a suitable mode compared to lower agreement across other batches.

RECOMMENDATION: The study recommends further research to better understand medical students' satisfaction with these modalities, alongside developing a strategic plan at Al-Neelain University to support and enhance both online and traditional learning through continuous assessment and refinement.

Isolation, Purification, Physicochemical And Biological Studies On Lectin From The Palm Tree Phoenix Dactylifera Seeds

Sara Abdel Aziz Abdel Rahim Elmubarak

Khartoum university

Abstract:

Worldwide, herbal medicines are utilized chiefly for healthcare, they play an essential role in illness treatment and prevention. Date palm is considered one of the oldest plants on earth with several medicinal values. On the other hand, lectins are a class of non-immune proteins that can reversibly recognize and bind sugars and sugar complexes. This study aims to isolate, purify, and characterize lectins from Phoenix dactylifera seeds "phoenixin," and to study their probable physicochemical biological activities. The protein was extracted from the date seeds ground powder by extraction with 50mM phosphate-buffered saline (PBS) pH 7.5. The phoenixin, was then purified in two steps; ion-exchange chromatography followed by mannose affinity chromatography. Phoenixin; showed no specificity for any human or animal erythrocyte; it agglutinated all trypsin-treated and untreated human erythrocytes regardless of the blood type. The lectin revealed no sugar specificity after using diverse mono and disaccharides. The SDS-PAGE showed Phoenixin to comprise a heterodimeric subunit association with molecular weights 53 and 68 kDa. Phoenixin showed maximum activity at 20°C-40°C and remained stable across a pH range of 5.5-

9.5. Phoenixin showed high heat stability at 90°C, retaining 50% of its activity after 60 minutes. Phoenixin remained stable for a week at room temperature, lost 50% activity by the second week, and became inactive by the fifth week. Dialysis of lectin against EDTA did not affect lectin activity. Ca and Co increased lectin activity by 800% and 400%, respectively. Phoenixin retained activity with 2-4M urea concentration but lost 50% of its activity at 5-8M. Modified by N-bromosuccinimide, exposed tryptophan residues constituted 1.43% of the protein weight. Treatment with 200 µg NBS fully inactivated the lectin, with 0.162% of exposed tryptophan located in the binding site. Phoenixin significantly relieved pain from thermal and acetic acid- induced writhing in mice in a dose-dependent manner ($P<0.05$). Naloxone blocked its analgesic effects, suggesting it acts through opioid receptors. Phoenixin also showed significant antiulcer

Effects, restoring normal stomach pH after ethanol administration. The study highlights Phoenixin's antinociceptive, analgesic, and antiulcer effects, but further research on its toxicological and immunological risks is needed.

Histopathology As A Career Among Medical Students Of Alneelain University 2024

Abdalla Ali Mohamedsalih Omer

AL-Neelain University

Abstract:

Background: A crucial decision any medical student takes after graduation is to select a specialty

That will stay with the rest of his career. Histopathology is the diagnosis and study of diseases of the tissues and involves examining tissues and/or cells under a microscope. Histopathologists are responsible for making definitive diagnoses for many diseases that help a clinician in patient management plans and give the best patient care. Many studies prove that histopathology is an unpopular career choice among doctors worldwide. This study aimed to estimate the number of students interested in histopathology and

evaluate the perception and factors influencing the choice of histopathology as a career among medical students at Al-Neelain University.

Methods: The study was conducted as a descriptive cross-sectional institutional-based study; the participants were selected by systemic random sampling method. The number of participants was 338, and the data were collected through an online Google Forms-structured self-administered questionnaire. The data was analyzed using the Statistical Package for Social Sciences software (SPSS) version 26. Informed consent was obtained from all participants.

Results: The study included 338 students. 235(69.5%) of them are female. 106(31.4%) of them were fourth-year students. Only 9 students (2.7%) choose histopathology as one of their top 3 preferred specialties. 44 students (13%) choose histopathology as one of their least 3 preferred specialties. 168 students (49.7%) believe that we can not ignore histopathology in clinical practice. Female participants attributed statistically significantly greater importance to histopathology in all aspects. The mean importance rating was 3.94 for females and 1.70 for males in clinical practice ($P=0.050$), 4.19 for females and 1.70 for males in diagnosis ($P=0.185$), 3.83 for females and 1.70 for males in prognosis ($P=0.080$), and 3.50 for females and 1.70 for males in management ($P=0.048$). 173 students (51.2%) believe that sometimes histopathology can be replaced by other specialties in diagnosis. 272 students (80.5%) denote the most important discourages factors of choosing histopathology as a specialty is highly complex cases followed by required a lot of reading and updating 160 students (47.3%).

Conclusion: This study showed a low interest in histopathology as a career among medical students. Female students generally held a more favorable perception of histopathology, acknowledging its clinical significance and role in diagnosis, prognosis, and patient management. The highly complex cases emerged as the most encouraging factor.

The Effect of Armed Conflict on Prenatal Care Services at Dongola Teaching Hospital, 2023

Israa Elbagir Mohamed Nassir, Hiba Mutasim , Saida Ahmed

AL-Neelain University Faculty of Medicine

Abstract:**Background:**

Armed conflicts significantly impact the well-being of affected communities, leading to a decrease in the utilization of maternal health services. The quantitative association between armed conflict and the utilization of maternal healthcare services has been minimally explored in public health literature.

Objectives:

Study aims to evaluate the impact of armed conflict on prenatal healthcare services at Dongola Hospital.

Methodology:

Observational hospital based study conducted at obstetrics and gynaecology hospital in

Dongola. It included pregnant ladies during war period who attended the antenatal care clinic between September 2023 and February 2024. Study included 292 ladies.

Data were collected using a semi-structured interviewed by google form questionnaire, and data was analysed using excel and SPSS 2016. Ethical

Consideration was obtained from hospital director.

Results:

The study focused on pregnant women across different age groups, with 42.5% aged 15 to 25, 34% aged 25 to 35, and 23.4% aged 35 and older. Most participants reported favourable socioeconomic status and no intrauterine foetal mortality. Hospitals were the main delivery location, with various delivery methods. Skilled midwives and doctors attended the majority of deliveries. Antenatal care attendance varied, with most attending five visits. The majority also received vitamins and vaccinations during pregnancy.

Conclusion:

The findings underscore the significant disruption of prenatal care services caused by the presence of armed conflict. Addressing this issue demands heightened efforts and focused attention, especially in safeguarding the health of both mothers and infants. Efforts to mitigate the impact of armed conflict on prenatal care services should be prioritized to ensure the well-being of maternal and neonatal populations.

Recommendations:

This research recommends prioritizing efforts to protect maternal and infant health during armed conflict, including improving access to prenatal care services, addressing socioeconomic barriers, fostering international collaboration, and implementing preventative measures to mitigate future health crises.

Keywords

Conflict, maternal; health, antenatal care, stakeholder.

Audit Report on Family Planning Knowledge, Attitude, and Practice Among Married Women in Omdurman

Sondos Elnair ¹, Mohammad Khalid ², Marwa Mekki ¹

¹ Neelain university , faculty of Medicine, ,

² University of Bahri , college of medicine

Abstract

This audit evaluates the knowledge, attitudes, and practices (KAP) regarding family planning among married women in Omdurman, Sudan, based on data collected from January to June 2021. A total of 160 married women aged 15-49 participated in the study. The results revealed a high level of awareness of contraceptives, with 97.5% of respondents reporting familiarity with various methods. However, there was a notable gap between awareness and actual contraceptive usage, with only 48.7% utilizing oral contraceptive pills and significant reliance on traditional methods such as the safe period and breastfeeding. The majority of women expressed a willingness to discuss family planning, with 95.6% open to conversations about the topic, and 67.5% reported positive support from their husbands. Despite high awareness, obstacles such as side effects (51.3%) and cultural norms affected the adoption of modern contraceptive methods. The findings emphasize the need for enhanced education and counseling, targeted messaging for men, and improved accessibility to family planning services. This audit underscores the importance of addressing the identified gaps to foster better reproductive health outcomes among married women in Omdurman.

Keywords

Family planning, married women, knowledge, attitudes, practices, Omdurman, Sudan, contraceptive use, reproductive health.

EXAMINING THE STANDALONE EFFICACY

Tagwa Kalool Fadlalla Ahmad

Faculty of Medicine AI Neelain University

Abstract

Background Chronic subdural hematoma (CSDH) is an important medical condition characterized by the accumulation of blood in the subdural space. Several methods have been explored, including surgical intervention and administration of tranexamic acid, which is a conservative treatment option. This meta-analysis aimed to assess the effectiveness and safety of tranexamic acid in CSDH management.

Methods

A systematic literature search was performed according to the PRISMA and MOOSE guidelines. This study included cohort and randomized controlled trials involving adults with chronic subdural hematoma (CSDH) who were treated with intravenous tranexamic acid. The primary outcome measures were recurrence and adverse events.

Results

Six studies encompassing 2024 participants were included. Studies have shown that tranexamic acid reduced recurrence rates (OR, 0.32; 95% CI: 0.27–0.38, $p=0.16$; $I^2=0\%$), although the result was non significant. However, the analysis of adverse events indicated a moderate level of heterogeneity (OR, 1.14; 95% CI: 0.60–2.15, $p=0.07$; $I^2=57\%$), suggesting a potential safety concern.

Conclusion

In conclusion, this meta-analysis suggests tranexamic acid (TXA) may reduce chronic subdural hematoma (CSDH) recurrence, though significance varied across studies. Adverse effects with TXA were similar to controls. Larger trials are needed to confirm TXA's role in CSDH management

Interdisciplinary Coordination and communication in emergency room to Rescue life

Muram Abd Elraheem Mohammed Mukhtar
M.B.B.S Al-Neelain university

Abstract :

Introduction: Interdisciplinary communication and coordination in emergency Room have an important role on patients safety and patients optimize care.

Objective: The aim of this study is to identify Interdisciplinary communication and Coordination in ER, in Bashaer hospital.

Method: cross-sectional hospital-based study in 181 workers in emergency Room in Bashaer hospital 2022 by using direct interview online self administered Google form questionnaire.

Results: 83 (45.9%) of the total participants revealed that there's poor IP Communication within the ER team and about 15 (8.3%) said there's no IP Communication at all on their perceptions.

181 (100%) knowing about the importance of IP communication and said it strongly affects the patient safety.

181 (100%) confirmed about the presence of barriers that affect IP communication on different aspects.

The lack of formal training represented mainly by 144 (79.6%) A different opinion regarding coordination represented by 120 (51.6%) said the Admission and discharge by units and 41 (32.3%) by ER team and only 20 (14.5%) According to hospital policy.

Conclusion: There's lack of IP communication, coordination and formal training In addition to a lot of barriers to effectiveness of them within ER teams on Bashaer hospital.

Curricula innovation regarding the coordination, IP communication simulation and Debriefing training need to be seriously thought and applied as earlier as possible.

Keywords: Interdisciplinary Communication, coordination, patient safety, Formal training, communication barriers.

Prevalence, pattern, and outcomes of Complications of Diabetes among Sudanese patients in Sudan 2024

Muhannad Alamin Mohamed Sidahmed

M.B.B.S AL-Neelain University

Abstract

Background:-

Diabetes is a multifaceted illness with subtypes linked to varied etiologies, management approaches, and diagnostic markers. The rising prevalence of diabetes is a global concern due to its association with increased acute and chronic complications, which strain healthcare resources, increase financial costs, and diminish quality of life. In Sudan, recent conflicts have displaced nearly 7 million people, compounding health challenges for diabetic patients. This study explores the question, "What are the impacts of conflict

and displacement on diabetic patients in Sudan?” by examining the relationship between conflict-related factors and morbidity risk among these patients.

Objectives:

To assess the prevalence, patterns, and outcomes of diabetes complications among Sudanese patients in Sudan, 2024

Method:-

A retrospective-descriptive community-based cross-sectional study was conducted among diabetic patients in multiple Sudanese states from January to March. The sample size was 376 with a non-probability convenience sampling technique. Frequencies and percentages were used to describe the statistics of the study variables. Data was collected using a questionnaire, which was distributed to 376 men, and women who had diabetes. Out of 215 men and women, only 215 responded to the questionnaire, and non-probability convenience sampling was used. The questionnaire first asked for basic socio-demographic information (age, gender). The second section included type, prevalence of diabetes complications, types of complications, and availability and types of medications. The third section included questions about general information about smoking and family history of diabetes. Data was analyzed with a computerized statistical package for social sciences SPSS version 24. The study received ethical clearance from the AI-Neelain University Ethics Review Board and informed consent was obtained from all participants.

Result:-

A total of 376 participants were included. Females constituted the majority of participants (57.2%). Regarding geographical distribution, 65.4% of participants were recruited from northern states, with 55.1% residing in rural areas. Despite war-related circumstances, 69.9% of participants received consistent diabetes care during the conflict, and 54.8% reported uninterrupted diabetes treatment. The

majority of participants were managed with oral hypoglycemic antidiabetic medications (46.8%), followed by insulin (27.7%). And we found that (48.4%) experienced complications related to diabetes. The prevalence of specific complications varied: blurry vision or difficulty to see (38%), diabetic retinopathy (22.6%), frequent urination (58.2%), ankle or foot swelling (19.4%), diabetic nephropathy (9.3%) and numbness, tingling or pain hand or feet (54.8%). Additionally (38.3%) reported heart disease 1, stroke, or high blood pressure, and (31.9%) experienced pain in their legs when walking.

Interpretation:-

Diabetic patients in Sudan are at high dreariness levels because of the new well-being emergency in the country. Other elements adding to these high grimness levels incorporate the absence of medicine, relocation, and missing doses.

Conclusion:-

Age and socioeconomic status are significantly associated with the risk of severe diabetes complications, with elderly patients and those of lower socioeconomic status facing higher risks. The ongoing conflict has intensified healthcare challenges for diabetic patients, with limited access to medical services, disrupted medication supplies, and potential malnutrition likely contributing to the high prevalence of complications and management difficulties during this period

Keywords: Diabetes complications, conflict zones, war, healthcare

Knowledge and Attitude of Preclinical Years Medical Student at Al-Neelain University towards Needle Stick Injury, 2021

Marwa Ahmed Elmardi

M.B.B.S Of Medicine Al-Neelain University

Abstract

Introduction: Percutaneous injuries, caused by needle sticks and other sharps are one of the important potential occupational hazards for health care workers and medical students and pose a significant risk of acquisition of potentially fatal disease such as Hepatitis B and C (HBV,HCV) and human immunodeficiency virus (HIV) . 5.6 million health care workers are at risk of occupational exposure to blood-borne pathogens due to needle stick injuries and other sharps injuries.

Objectives: this study aim to assess knowledge and attitude of pre-clinical years medical student regarding needle stick and sharps injuries.

Methodology: A descriptive cross sectional study was conducted among 278 medical students of 2nd and 3rd years at Alneelain university, faculty of medicine, Khartoum state, Sudan . convenience sampling was used. Online self- administered questionnaire were used. The questionnaire consisted of 3 main parts; the first part was based on demographic data, the second part dealt with students knowledge about needle stick injuries while the third part explored their attitude towards needle stick injuries. Data was analyzed using SPSS version 20.0. association were assessed, A p-value of < 0.05 was considered as significant.

Results: a total of 278 medical students were included in the study, 64% were females and 36% were males, 71.2% of the students between ages 20 to 22 years. 126 student were from second year and 152 were from the third year. Out of which 77% of the students heard about needle stick injuries before, 61.2% answer that disposable syringes are the most common devices associated with needle stick injury. 24.5% of the participants were aware that Hepatitis B and C and HIV are transmitted by needle stick

injuries, and 62.6% of the students only heard about universal precaution guidelines but does not know details about them.

Conclusions: The overall knowledge of preclinical years medical students about the cases, diseases transmitted and risk associated with needle stick injuries and awareness about preventive measures was inadequate. Improvement in the domains of knowledge and attitude regarding NSIs is strongly need it.

Recommendations: Further teaching and training sessions on needle stick and sharps injuries need to be incorporated into the medical curriculum to minimize these incidents in the future.

Conflict of interest: No conflict of interest.

Iron oxide Nanotechnology development to connect

Downopicin directly to lymphatic leukemia cells

Ahmed Abdel Aziz Bashir Osman

Aisha Bakhit Educational Foundation

Abstract:

Introduction:

Lymphatic leukemia is one of the most prevalent cancers and poses a major threat to public health. Chemotherapy is one of the most prominent methods of combating this disease, but these treatments have many side effects as a result of their effect on healthy cells. For this it has become necessary to develop the techniques for the delivery of targeted drugs to reduce damage to healthy tissue and increase the effectiveness of the drug. In research we study the use of iron oxide nanoparticles as a means of transporting Downopicin directly to cancer cells.

Nanotechnology in medicine:

Nanotechnology offers innovative applications in medicine, including targeted drug delivery systems. This technique is based on the manufacture of nano-sized small particles to deliver the drug directly to the affected cells, which increases the concentration of the drug in the target area and reduces its spread in the rest of the body.

Iron oxide nanoparticles:

Iron oxide nanoparticles are characterized by their unique magnetic steering, as they can be controlled by an external magnetic field. This

Feature makes it an excellent option to deliver medicines targeted, as external magnets can be used to attract the granules to the tumor area and avoid healthy tissue.

Downopicin:

Downopicin is a common chemical drug that is commonly used to treat lymphocytic leukemia. It inhibits the growth of cancer cells by interfering with the DNA replication process. However, its impact on healthy cells is one of the challenges facing its use, so directing it directly to cancer cells can reduce these side effects.

Delivery method:

The process of connecting downopicin to cancer cells is done with iron oxide nanoparticles as follows:

- 1- Downopicin is loaded onto the surface of iron oxide nanoparticles.
- 2- Granules are injected into the bloodstream.
- 3- An external magnet is used to guide drug-loaded nanoparticles to the target area.
- 4- Once the nanoparticles reach the cancer cells, the drug is directly released into the cells, increasing its concentration in the affected area.

Results and discussion:

The expected results suggest that the use of iron oxide nanoparticles could contribute to reducing the required dose of downopicin, thus mitigating the drugs side effects. Additionally, the use of magnetic targeting would help increase the precision of delivery and reduce the impact on healthy tissues.

Conclusion:

In this research, we have found that the iron oxide nanoparticle technique represents a promising approach in treating acute lymphoblastic leukemia, owing to its ability to precisely target and deliver the drug directly to cancer cells. This technique may pave the way for further research to develop effective and safe therapeutic solutions for patients.

Clinical Audit In Documentation Of Inpatient Medical Records At Dongola Specialised Hospital In 2023

Malak Abdelmuneim Abdelkarim Ibrahim
Dongola specialised hospital

Abstract

This clinical audit evaluates the quality and completeness of inpatient medical record documentation at Dongola Specialized Hospital, conducted during September 2023. Medical records are vital for effective patient care, interprofessional communication, and regulatory compliance. This audit aims to assess the adequacy, accuracy, and timeliness of documentation practices among healthcare providers, focusing on key elements such as admission documentation, progress notes, treatment orders, and discharge summaries. Utilizing a retrospective and prospective study design, data was collected from a representative sample of patient records and analyzed against standardized criteria. Findings from this audit will highlight strengths, identify gaps, and propose actionable recommendations to improve documentation practices, ultimately supporting enhanced patient care, interprofessional collaboration, and adherence to regulatory standards.

Investigating Daytime Sleepiness And Psychological Distress Through Mediation Analysis: An Institutional Based Cross-Sectional Study

Arwa Abdelmoneim Abdelaziz Nogdalla

Al-Neelain University. Al-Neelain research institute

Abstract

BACKGROUND:

Excessive daytime sleepiness (EDS) is defined as the Uncontrollable drowsiness during daytime that can interfere with performing daily activities and psychomotor performance. Poor sleep quality and bad sleep behaviors have a large contribution to the prevalence of EDS. A number of studies have assessed the prevalence of EDS. But enough were carried on here in Sudan. Therefore, the aim of this study was to evaluate the prevalence of EDS among medical students and investigate its relationship with psychological distress through mediation analysis.

METHOD: A cross-sectional study was carried out between April and August 2022 among medical students of Al-Neelain University in Khartoum state, Sudan. Students were selected using a systematic simple random sampling technique.

The participants completed the Epworth Sleepiness Scale and Kessler Psychological Distress Scale to determine excessive daytime sleepiness and psychological distress, respectively. Sociodemographic variables and sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI) questionnaire. Mediation analysis was performed to evaluate the effect of psychological distress and other co-variables on excessive daytime sleepiness using Hayes process macro.

RESULTS: a total of 303 medical students have accepted to participate in the study. Mean age was 22.71 (± 2.5) years, Females represented about two thirds of the participants (67%). The mean for daytime sleepiness was 8.94 (± 4.49), and the prevalence of EDS among the population was 9.2%. Almost half of the participants (42.2%) had severe psychological distress. The majority of excessive daytime sleepers were severely (psychologically distressed (14.8%, $p=0.018$).

Multiple regression analysis was used to assess the mediating role of sleep disturbances (SD) on the relationship between PD and EDS. The results revealed. That PD was positively associated with EDS ($b=.0634$, $p=.0335$). While controlling for age, BMI, and PD, sleep disturbances also revealed a positive

association with EDS ($b=1.3067$, $p=.0137$). Lastly, the results for bias-corrected percentile bootstrap method showed that the total effect was positively significant ($b=.0634$, $p<0.05$, $SE=.0297$, 95% CI [0.005-0.1218]) through full complimentary mediation between PD and EDS

CONCLUSION: The study results revealed an association between EDS and PD among medical students. These findings advice to direct more attention towards the psychological health of medical students, and emphasize the need develop a better preventive approach to deal with pressure and distress

Awareness of medical students in Shendi University about Autism

MASARA ABDALLA MOHAMED & Maram Mohammed Alhussain Goraish

Shendi University

Abstract:

Aim of this study is to study the over all knowledge of medical students (4th, 5th, 6th year students) about ASD. A cross-sectional observational study had been carried out among medical students in Shendi University, Faculty of Medicine. 190 students responded to our KCAHW questionnaire. Of the 190, 61 were in 4th year, 96 in the 5th year, 33 in the 6th year. Data collected had been analyzed by SPSS program. The total mean score 10.61 ± 4.12 out of 19. This is considered as poor knowledge. From this it is important to for our students to get better training, more understanding and knowledge about ASD. Therefore children displaying ASD symptoms are correctly and at the earliest.

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Prevalence of psychological disorders {Anxiety, Nervousness, And Social isolation} among diabetic patients in port Sudan: A cross sectional study

Elalim Eltayeb Abduehrman Mohamed

Red Sea University Faculty of Medicine

Abstract:

Background

Diabetes is a common long-term illness marked by chronically high blood sugar levels brought on by abnormalities in the production or action of insulin. The number of people impacted is expected to rise from 537 million in 2021 to 783 million by 2045, making it a serious worldwide health concern. Diabetes management's psychological components are becoming more well acknowledged, especially in relation to glycemic control and overall patient outcomes.

Aims

The aim of this study to determine the prevalence of psychological illnesses (social isolation, anxiety, and nervousness) among patients with diabetes in port Sudan

Method

We conducted across-sectional study among diabetic patients whose follow up in Ahmed Hassan center between September 30th and November 1 using self-administrated questionnaire. We used standardized screening questionnaires, namely the Generalized Anxiety Disorder(GAD-7) for anxiety and the UCLA-3 item scale for loneliness. Pearson chi- square test was used to measure the association between the variables in the study.

Results

Out of 256 diabetic patients participate in this study, majority of participants exhibited moderate anxiety 72.3%, 53.9% reported experiencing nervousness sometimes, and 57.4% reported always feeling socially isolated indicating that mental health issues are common in this. Population. There are various

sociodemographic factors such as age, marital status, educational level, and occupation play a crucial role in influencing the psychological health of diabetic patients.

Conclusion

The study underscores the importance of integrating psychological care into routine diabetes management, as poor mental health can exacerbate glycemic control issues, leading to serious complications. This research advocates for a holistic approach to diabetes care that prioritizes both physical and mental health, emphasizing the need for tailored interventions to support the psychological well-being of diabetic patients.

Key words: Diabetes-Psychological Disorders-Anxiety-Nervousness-Social Isolation(loneliness)-port Sudan.

Knowledge, Attitude, And Practices Towards Organ Donation Among Sudanese Population Resided At Khartoum State In 2020, Sudan

IBRAHIM ADEL HAMDOUN AL-FAHADI

Al-Neelian University, Faculty of Medicine, Khartoum, Sudan

Abstract:

Background: Organ transplantation is a life-saving procedure that can help extend life. The demand for organ transplants is usually higher than the availability of organs worldwide. Organ donation in Sudan is very rare because society has conservative beliefs and laws. Additionally, Sudan has no deceased donation programs. The study aimed to assess and compare the knowledge, attitudes and practices of Sudanese population toward organ donation.

Methods: This cross-sectional, community-based study was conducted on 821 Sudanese participants aged 16 and above living in Khartoum State from May to July 2020. The study used an Internet-based Arabic language, 23-item self-administered questionnaire, with participants self-recruited via social media. The data were analyzed using multiple linear regressions, independent samples t-tests, and one-way ANOVA using SPSS version 25.0 statistical software. For every test, the significance level of $\alpha = 0.05$ was applied.

Results: The overall correct rate of the knowledge questionnaire was 63.43% (SD: 20.70%). Seven hundred and ten (86.48%) have agreed that organ donation saves many lives worldwide. Five hundred and twenty-nine (64.43%) of the participants were aware that the demand for organ transplants is higher than the availability of organs. Only 130 (15.83%) were those who knew Sudan's laws regarding organ donation. Five hundred and sixty-seven (69.06%) expressed their fear of organ donation, as it may lead to disfiguring and damage to their body. Sixteen individuals from our sample said that they had performed organ donation before, whereas 62 said that they recommended donating their organs after their death.

Conclusion: The study showed an average level of knowledge of organ donation among Sudanese population in Khartoum. Despite the positive attitudes toward organ donation addressed by our participants, they achieved very poor practice rates. The study highlighted that people who took their information from healthcare workers achieved the highest knowledge and attitude scores compared to other sociodemographic groups. The study encourages health officials to develop organ donation awareness and education campaigns.

Keywords: Organ donation, Knowledge, Attitude, Practice, Sudan.