Review Form 1.7

Journal Name:	**South Asian Journal of Research in Microbiology**
Manuscript Number:	**Ms_SAJRM_111429**
Title of the Manuscript:	**Prevalence of Methicillin-Resistant Staphylococcus aureus in Nasal Cavity of Medical Students at Shendi University, Sudan**
Type of the Article	

PART 1: Review Comments

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*

Review Form 1.7

Compulsory REVISION comments **1. Is the manuscript important for scientific community?** (Please write few sentences on this manuscript) **2. Is the title of the article suitable?** (If not please suggest an alternative title) **3. Is the abstract of the article comprehensive?** **4. Are subsections and structure of the manuscript appropriate?** **5. Do you think the manuscript is scientifically correct?** **6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.** **(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)**	**YES** **YES** **YES** **YES** **YES**	
Minor REVISION comments **1. Is language/English quality of the article suitable for scholarly communications?**	YES	
Optional/General comments	**Minimal corrections have been suggested…** THE HIGHLIGTENED PART REQUIRED CLARIFICATION *Staphylococcus aureus* (SA) is a Gram-positive opportunistic bacterium that commonly colonizes the mouth, nasal passages, and skin of healthy individuals. This can lead to a variety of local and invasive problems, ranging from superficial skin infections to life-threatening pneumonia and bacillus infections.SA infections have been occurring in humans since ancient times. Rice field. Shortly after penicillin was first used to treat his SA infection in 1940, the first penicillin-resistant SA strains emerged **[1].** Antibiotic-resistant SA strains are considered a major health problem **[2].** Meta-analysis of studies of *S. aureus* bacteremia that were published from January 1980 through December 2000 demonstrated significantly increased mortality associated with MRSA infection, compared with infection due to *methicillin-susceptible S. aureus* (MSSA) **[3].** There is strong evidence that SA is transmitted between patients and dentists through the clinical setting **[4].** The presence of SA has been demonstrated to be associated with oral mucosal disorders such as angular stomatitis, erythema, swelling, and burning, suggesting a role for SA in oral mucosal disorders. Nasal and oral transport of methicillin-resistant SA (MRSA) serves as a reservoir for recolonization of other body sites and cross-infection between patients and medical staff **[5].** In addition to genetic differences, infections with CA-MRSA are generally different. Although CA pathogens are most commonly associated with skin and soft tissues (abscesses, boils, folliculitis), pathogens acquired in healthcare facilities are associated with respiratory, cardiovascular,	

urological, and surgical sites. More likely to become infected. In addition, CA-MRSA is susceptible to non-lactam antibiotics (clindamycin, trimethoprim-sulfamethoxazole, tetracycline, etc.) **[6].** MRSA can cause highly invasive, rapidly progressive, life-threatening infections, such as necrotizing pneumonia, severe sepsis, and necrotizing fasciitis **[7,8].** Individuals with MRSA colonization or carriage (that is, the presence of bacteria that do not cause a detectable host immune response, cellular damage, or clinical signs and symptoms of infection) have an increased risk of subsequent infection and are an important source of person-to-person transmission. Healthcare facilities host persons who are predisposed to infection (for example, owing to invasive procedures and/or immune compromise) and are environments with high antibiotic selection pressure (which can contribute to the selection of antimicrobial resistance in bacteria) and frequent contact between individuals. These conditions have facilitated the epidemic spread of MRSA in hospitals; MRSA is now endemic in many healthcare facilities throughout the world and, as a consequence, it has become a major focus for infection control efforts globally.

Materials and methods:

Study design:

It was a descriptive cross-sectional based study, conducted to detect the Prevalence of *Methicillin-Resistant Staphylococcus aureus* in the Nasal Cavity of Medical Students at Shendi University.

Study area:

This study was conducted at Shendi University was be collected by collecting nasal swab samples and the collected samples were transferred to the Microbiology lab at Shendi University where they were processed and examined

Study duration:

This study was conducted from July to December 2022.

Study populations:

Participants involved in this study were all-age medical students of all ages at Shendi University

Study sample:

A nasal swab sample was taken from each participant to detect *staphylococcus aureus* and MRSA after culturing culture and Susceptibility testing

Sample size:

Sixty (60) Nasal swab sample were was taken from participants.

Sample collection:

Best results were obtained by using a flocked swab in combination with Amies transport medium." Flocked swabs provide better sample collection due to their brush-like tip, which releases higher numbers of target cells and retains more liquid samples than foam swabs. Once a swab and transport medium, like Puritan's Opti-Swab Media Transport System, was selected, the tester should wash their hands and put on clean gloves.

Culturing method:

Used to detect *staphylococcus aureus* and antimicrobial resistance or sensitivity was detected by using the susceptibility method.

	Susceptibility testing: Both disk diffusion and MIC methods employ the phenotypic identification of susceptibility. Disk diffusion method (also known as the Kirby-Bauer test) is appropriate for rapidly growing organisms. In this procedure standard turbidity (McFarland 0.5) solution is prepared to compare its color with the turbidity of the bacterial suspension by using sterile loop touch 3_5 well-isolated colonies of the tested organism in 3_4 ml of saline or nutrient broth. Using a sterile swab inoculate a plate of Mueller Hinton agar. Streak the swab over the media in three directions. By sterile forceps place antibiotic-impregnated disks on Mueller Hinton agar plates inoculated with the test organism. After incubation (typically 16 to 18 hours) examine the diameter of the zone of inhibition around each disk. Each organism-antibiotic combination has different diameters. **Quality controls:** Sterile disposable swabs are used to collect the samples, and nasal swab samples must be cultured. Wet preparation Smear،air dry ،fixed the air-dried smear by flame. Staining by gram stain???. All dishes and slides will be washed before and after use. The quality of staining solutions will be checked before used. During work, all swabs will be closed well to avoid contamination	

PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

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