

# Dedication

I would like to dedicate this works  
to my wonderful

Family whom giving me  
unmatchable support and unlimited  
encouragement throughout my  
study life

Dedication goes to my supporting  
husband who taught me that even  
the largest task can be

accomplished if it's done one step  
at a time, also dedicated to my  
precious daughter who is a joy of  
my life

This work is dedicated to all those  
who cherish me with support and  
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## **Abstract**

For over a century, skin hygiene, particularly of the hand, has been accepted as a primary mechanism to control the spread of infectious agents. The present study was conducted to assess the hand hygiene practices of nurses at intensive care units

(neonatal intensive care unit and surgery intensive care unit) and to determine the antibiotic susceptibility pattern of the isolated pathogens from health care workers. The study subjects involved 50 nurses working in Khartoum Teaching Hospital - Sudan (May/ June 2011). Two swabs samples (hand swab and paranasal swab) were collected from each participant. The specimens were inoculated in nutrient broth and incubated aerobically overnight at 37°C. Subsequently, the grown cultures were inoculated on blood agar and MacConkey agar and incubated aerobically overnight at 37°C. The results showed low compliance to the recommended hand washing protocol. Forty four percent of nurse's hands were found to be contaminated by species of bacteria that commonly cause nosocomial infection (*S.aureus*, *K.pneumoniae* and *P.aeruginosa*) and 52% of nurse's were found to be nasal carrier for those organisms. Antibiotic susceptibility pattern of *S. aureus* species showed high resistance to Methicillin (57.9%) and Oxacillin (57.9%), followed by Tetracycline (52.6% ) and Vancomycin (52.6%). On the other hand *S. aureus* showed moderate sensitivity response to Erythromycin (68.4%). Whereas antibiotic susceptibility pattern of Gram negative bacteria showed a good sensitivity response to Ciprofloxacin (79.3%), Tetracycline (65.5%) and highly resistant to Cefotaxime (75.9%) and Amikacin (58.6%). Poor hand washing could be considered as one of the important cause of emergence of antimicrobial-drug resistance in hospitals.

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منذ أكثر من قرن من الزمان ظلت نظافته جلد الإنسان وبخاصه اليدين تُعتبر من الوسائل الأولية لضبط عوامل إنتشار الإلتهابات. فى هذه الدراسة تم رصد ممارسه تعقيم وتطهير الآيادي لدى فريق التمريض فى وحدات العناية المكثفه (حديثي الولاده والجراحه) وتحديد مدى تأثر الجراثيم التي تم عزلها بالمُضادات الحيويه التي تم إستخدامها في هذه الدراسة. شملت هذه الدراسة عدد خمسون (50) فرداً من فريق التمريض بمستشفى الخرطوم التعليمي- السودان (مايو/ يونيو 2011) لتدقيق غرض الدراسة تم أخذ عينتين مسح لكل فرد من المجموعه المُستهدفه (باطن اليد وفتحتي الأنف) وتم ترريع العينات فى المرق الغذائي السائل وتحضينها هوائياً فى درجة حراره 37° مئوية لمدة 24 ساعه. ثم تم التزريع منه في وسط آجار الدم ووسط آجار الماكونكي وتم تحضينه في درجة حراره 37° مئوية لمدة 24 ساعه. أظهرت النتائج ضعف الإلتزام بالنظام المطلوب إتباعه فى ممارسه تطهير ونظافة الآيادي، نسبة 48% من المجموعه قيد الدراسة وجد لديهم تلوث آيادي بالجراثيم المرتبطه بالمستشفيات (العنق وديه الذهبية، الزائفه الزنجارية، الكليسيلا الرئويه) ونسبة 57% من المجموعه قيد الدراسة يحملون ذات الجراثيم في فتحتي الأنف. أظهرت النتائج أن جراثيم العنق وديه الذهبية التي تم عزلها لديها مقاومة عاليه لمُضادات الميثاثلين (57.9%) والأوكسيسيلين (57.9%) يليهما التيتراسايكلين (57.7%) والفانكوميسين (52.6%). وعلى صعيد آخر أظهرت جراثيم العنق وديه الذهبية حساسيه بنسبه معقوله لمُضاد الاريثرومايسين (68.4%). بينما أبدت الجراثيم سالبه الجرام حساسيه جيده لمُضادات السيروفلوكساسون (79.3%) والتيتراسايكلين (65.5%) ومقاومه عاليه لمُضادات السيفوناكسيم (75.9%) والأمايكسين (58.6%). نجد أن ضعف الطرق المُستخدمه في غسل الآيادي يعتبر أحد الأسباب الهامه لظهور الجراثيم المقاومة للمُضادات الحيويه في داخل المستشفيات.

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