

الآية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى :

(وَاللَّهُ أَخْرَجَكُمْ مِنْ بُطُونِ أُمَّهَاتِكُمْ لَا تَعْلَمُونَ شَيْئًا وَجَعَلَ
لَكُمْ السَّمْعَ وَالْأَبْصَارَ وَالْأَفْئِدَةَ لَا عِلْمَ لَكُمْ تَشْكُرُونَ)

صدق الله العظيم

سورة النحل الآية 78

DEDICATION

To my mother, father, wife, daughter and brothers.

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First of all thank to Allah for giving me a silence power to carry out this research. I would like sincerely to thank so much my supervisor **Prof. Dr. Humodi Ahmed Saeed** for his immerse efforts not only to accomplish this work, but also to inculcate the research's soul me and his good guidance. Also I cannot find words to express my gratitude to my team in food handlers project for their great efforts and kindly cooperation. I wish to thank, first and foremost **Dr. Ehsan Yousif** for her great help, effort and encouragement , as well as my deepest thank to **Miss. Alaa Omer** for her help and valuable direction and generous advicee that kept me on the right tract in the Research Laboratory of Sudan University of Science and Technology.

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ABSTRACT

Staphylococcal food poisoning, occur mainly as a result of bad hygienic conditions. The objective of this study was to detect *Staphylococcus aureus* hand carriage among food handlers working in cafeterias in Khartoum Province. The study was conducted during the period from June to September 2013.

Food handlers working in Sudan University of Science and Technology cafeterias were included in this study. A pretested structured questionnaire was used for collecting sociodemographic data. Hand swabs were collected from each participant (right and left hands), from both sexes (males and females). Each swab immediately cultured on suitable culture media (blood agar, MacConkey agar and Mannitol salt agar). Gram staining and biochemical tests used to identify the *Staphylococcus aureus*.

A total of 110 swabs were collected from 55 food handlers. The data in this study confirmed clearly the existence of *Staphylococcus aureus* on right hands 17/55(30.9%) and in left hands 10/55(18.1%). The prevalence rate of hand carriage was 27(55) 49%.

From the above findings, the study concluded that hand carriers of *Staphylococcus aureus* may be source of food poisoning outbreak. Further study with large number of hand swabs is required to validate the results of the present study.

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المستخلص

ألتسمم الغذائي بالباكتيريا العنقودية يحدث نتيجة للعادات الصحية الخاطئة ، الهدف من هذه الدراسة هو الكشف عن وجود البكتيريا العنقودية في أيدي مناولي الطعام الذين يعملون بالكافتيريات في محافظة الخرطوم اجريت الدراسة في الفترة من يونيو الى سبتمبر من العام 2013. شملت هذه الدراسة مناولي الطعام الذين يعملون في كافتيريات جامعة السودان للعلوم والتكنولوجيا ، حيث تم إعداد إستبيان تم إختباره مسبقا لجمع البيانات من مناولي الطعام.

جُمعت عينات من أيدي المشاركين في الدراسة من الذكور و الإناث ، إستزرعت العينات مباشرة في اوساط الاستزراع الملائمة ، و استعملت اصباغ الغرام و الكشوفات الكيميائية الحيوية للتعرف على البكتيريا العنقودية.

جُمعت مائة وعشرة عينة من ايدي المشاركين (اليمنى واليسرى) والذين كان عددهم خمسة وخمسون من مناولي الطعام ذكورا واناثا. توصلت الدراسة لتواجد البكتيريا العنقودية في اليد اليمنى في 17 حالة من 55 اي بنسبة ثلاثين بالمائة ، و في اليد اليسرى في 10 حالات من 55 أي بنسبة ثمانية عشرة بالمائة ، و النسبة الكلية لحاملي الباكثيريا كانت تسع و أربعون بالمائة.

من النتائج اعلاه توصلت الدراسة الى أن حالات الحمل اليدوي للباكتيريا العنقودية بين مناولي الطعام قد تكون سببا للتسمم الغذائي خصوصا لإرتفاع نسبة الحاملين للباكتيريا من بين مناولي الطعام. اوصت الدراسة بإدخال عدد اكبر من العينات في حيز الدراسة حتى يُتوصل الى نتائج اكثر دقة.

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ABBREVIATIONS

CDC = Center for Disease Control and Prevention

FDP = Food-borne disease

IDSC = Information Decision Support Center

PCR = Polymerase Chain Reaction

S. aureus = *Staphylococcus aureus*

SPSS = Statistical Package for Social sciences

WHO = World Health Organization

MHLW= Ministry of Health Labour and Welfare Japan

MSSA= Methicillin Sensitive *S. aureus*

MRSA= Methicillin resistant *S. aureus*