

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY, KUMASI
COLLEGE OF SCIENCE**

KNUST

DEPARTMENT OF BIOCHEMISTRY AND BIOTECHNOLOGY

**THE RELATIONSHIP BETWEEN DIETARY INTAKE OF ANTI-
OXIDANT MICRONUTRIENTS AND THE RATE OF RECOVERY IN
BURN PATIENTS**

BY

MARY ADJEPONG

AUGUST, 2014

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OXIDANT MICRONUTRIENTS AND THE RATE OF RECOVERY IN
BURN PATIENTS**

**THIS DISSERTATION IS PRESENTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS OF MPhil. DEGREE IN HUMAN
NUTRITION AND DIETETICS**

BY

MARY ADJEPONG

AUGUST, 2014

DECLARATION

I declare that I have wholly undertaken the study reported herein under the supervision of Prof. I. Oduro, Prof. Pius Agbernorku and Dr. Patricia Brown and that except portions where references have been duly cited, this dissertation is the outcome of my research.

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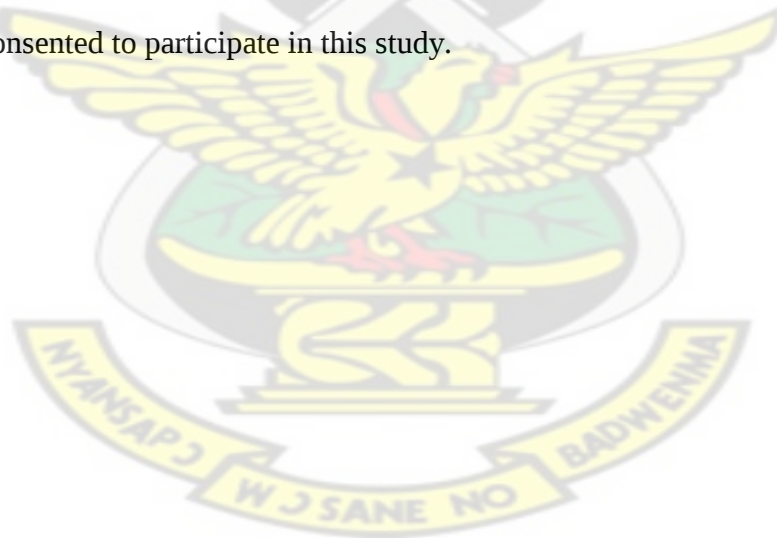
Head of Department

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Finally, my sincere appreciation goes out to the staff of the Burns Unit, Komfo Anokye Teaching hospital, Kumasi as well as all patients who consented to participate in this study.

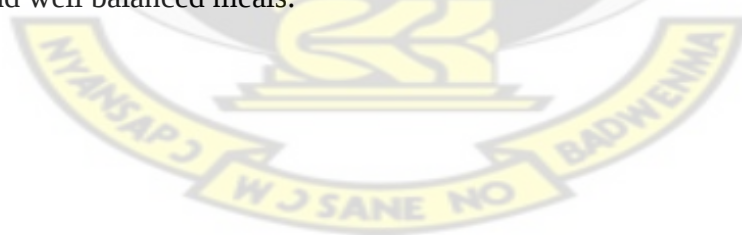


ABSTRACT

Burn injury results in emotional stress affecting dietary intake and anti-oxidant micronutrient intake, which is known to have effects on recovery outcomes.

The study aimed to assess dietary intake of anti-oxidant micronutrients and recovery outcomes of burn patients. Secondary data of 487 patients was taken from the Burns Intensive Care Unit (BICU) at Komfo Anokye Teaching Hospital (KATH) for a period of 4 years (May 1, 2009 – April 30, 2013). Questionnaires were administered to 40 burn patients at KATH from March 1, 2014 – May 30, 2014. The data taken include anthropometric measurements and dietary assessment. Their nutrient intakes were assessed with Nutrient Analysis Template. The average intakes were compared to the Recommended Daily Allowance. Assessment of recovery was based on records of wound healing assessments and infection rates from the health practitioners.

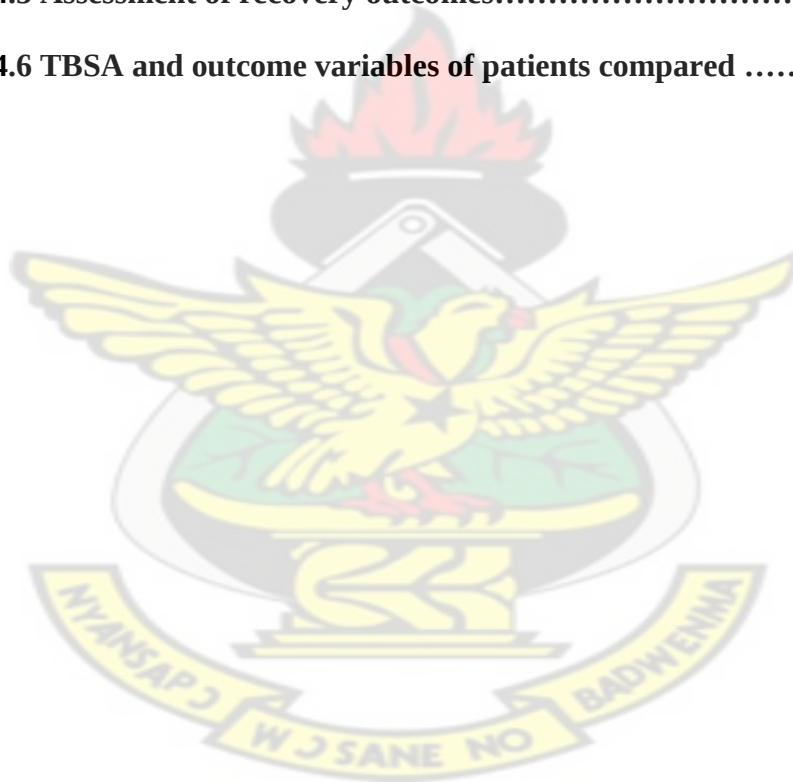
The secondary data indicated that the mean ICU stay and mean Total Burns Surface Area (TBSA) was 8.44 days and 28.79% respectively with 224 (46.0 %) females and 263 (54.0%) males. The mortality rate for the period under review was 20.4%. Cross sectional study for 40 patients revealed an average TBSA of 31.4%; where 70.0%, 35%, 75%, 52.5%, 12.5% and 32.5% patients were deficient in Vitamin A, C, E, Zinc, Copper and Selenium respectively. Patients with adequate amounts of zinc had a lower rate of infection, 26.3% as compared with those with inadequate amounts 33.33%, 25% of patients with adequate amounts of Vitamin A had wound infections as compared to 32% with inadequate amounts. With Vitamin C, 26.9% patients with adequate amounts had infections as compared with 35.7% with inadequate amounts. Also 76.9% of patients with adequate amounts of Vitamin C showed progress in wound healing. The adequacy of anti-oxidants resulted in positive wound healing outcomes. The prevalence of burn injury is high; hence there should be public education to prevent it. Also, most burn patients did not meet their dietary requirements for anti-oxidant micronutrient and this may be due to meals not tailored to suit individual requirements, hence the need for planned and well balanced meals.



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