Abstract of Master's Dissertation

No.1

Course	International Health Development (MPH)	Name	Kazuko Ugai
Thesis Title	Nutritional status and wound healing process in Buruli ulcer patients in rural villages of Côte d'Ivoire: A descriptive study		

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Objective : Buruli ulcer (BU) is a necrotizing cutaneous disease caused by the bacterium, *Mycobacterium (M.) ulcerans*, which causes a deep ulceration of the skin. In severe forms, it could take months and years to heal. General health of an individual is an essential factor for wound healing. Wounds, from any cause, could lead to healing delay if an individual is malnourished. Yet, very few studies have examined the relationships between nutrition and wound healing in rural communities of developing countries where most of these patients reside. The objective of this study was to describe the nutritional status and wound healing process of patients with BU who reside in rural Côte d'Ivoire, West Africa.

Method : This study was conducted in 4 primary health centers (PHCs) located in Oumé health district of Côte d'Ivoire, where it is known for its endemicity with BU. Participants of this study were the patients with wounds from active BU or wounds from scarring or deformities from past BU, who visited PHCs weekly for treatment. Prospective observational mixed methods study design was applied to this study. Quantitative part involved a wound healing follow-up using scoring systems, anthropometric measurements, and food intake assessment. Qualitative part involved semi-structured in-depth interviews to ask participants' perception on nutrition and eating behaviour change after acquiring BU.

Result : Eleven participants aged between 6 and 66 year-old (median, 24; IQR, 20.5-52) were included in this study. Nine participants were assessed as normal nutritional status, one as mild malnutrition, and one as moderate malnutrition. Nine participants had inadequate dietary intake in at least one of the following: calories, protein, vitamins A, C and D, iron and/or zinc. Laboratory exams were performed to further assess their nutritional status, and all participants had abnormal values for one or more of the following nutritional indicators investigated in laboratory exams: white blood cell count, hemoglobin, albumin, vitamins A and C, zinc and/or iron. Three out of 5 participants who

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	Development (MPH)		

had adequate intake of calories (60%) and one out of 6 participants who had inadequate intake of calories (17%) reached complete healing during follow-up period of 4 months. Furthermore, adequate intake of protein and iron seemed to be related to good healing. Appetite loss was reported by 7 participants after they had acquired their wounds, which was mainly caused by wound pain and odor. Three participants experienced improvement in their appetite after starting on the wound treatment.

Conclusion : This study indicated that adequate intake of calories was related to good wound healing. Adequate intakes of protein and iron showed also tendency in promoting wound healing. Wound pain caused appetite loss, which may have resulted in inadequate dietary intake. The findings from this study present potential importance of integrating nutritional interventions into wound management and on the importance of proper assessment and control of wound pain in BU patients. Additional larger studies are needed to confirm these descriptions on relationships between nutrition and wound healing process in patients with BU to support in mitigating impaired wound healing for the future patients.

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