

**ASSOCIATION OF ANAEMIA WITH PARASITIC INFECTION IN
PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT
KOSHI ZONAL HOSPITAL**



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Science in Zoology with special paper **Parasitology**

Submitted to

Central Department of Zoology
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Tribhuvan University
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DECLARATION

I hereby declare that the work presented in this thesis has been done by myself, and has not been submitted elsewhere for the award of any degree. All sources of information have been specifically acknowledged by reference to the author(s) or institution(s).

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RECOMMENDATION

This is to recommend that the thesis entitled "Association of Anaemia With Parasitic Infection in Pregnant Women Attending Antenatal Clinic at Koshi Zonal Hospital" has been carried out by **Manju Chaudhary** for the partial fulfilment of Master's Degree of Science in Zoology with special paper **Parasitology**. This is her original work and has been carried out under my supervision. To the best of my knowledge, this thesis work has not been submitted for any other degree in any institutions.

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LIST OF ABBREVIATIONS

Abbreviated form	Details of abbreviations
ANC	Antenatal Care
ANOVA	Analysis of Variance
CBS	Central Bureau of Statistics
CDC	Centers for Disease Control
ELISA	Enzyme Linked Immune Serbent Assay
Gm/dl	Grams per deciliter
Hb	Haemoglobin
HIV	Human immunodeficiency virus
IPI	Intestinal Parasitic Infection
KAP	Knowledge, Attitude and Practices
KZH	Koshi Zonal Hospital
NDHS	National Demographic Health Survey
NEG	Nutritional Educational Guideline
NMCTH	Nepal Medical College Teaching Hospital
NMSS	Nepal Micronutrient Status Survey
LBW	Low Birth Weight
P – Value	Probability Value
RBC	Red Blood Cell
STH	Soil Transmitted Helminthes
SPSS	Statistical Package for Social Science
WHO	World Health Organization

ABSTRACT

Intestinal parasitic infection (IPI), associated with anaemia is a major health problem during pregnancy in developing countries including Nepal. The present study was designed to find out the association between anaemia and parasitic infection during pregnancy. A total of 200 stool samples from pregnant women on their first consultation to antenatal service in Koshi Zonal Hospital were collected from April 2012 to August 2012. The stool samples were examined for intestinal parasites by direct smear technique, while haemoglobin level of pregnant women were collected from laboratory record of the hospital. Out of 110 anaemic pregnant women 40 (36.3%) had parasitic infection, while from 90 non-anaemic pregnant women; only 18 (20%) of them were infected with intestinal parasites. The association of anaemia with intestinal parasite was statistically significant ($p < 0.008$). The prevalence of Hookworm (76.9%) was most prevalent infection followed by *Ascaris lumbricoides* (73.3%) in anaemic pregnant women. The Haemoglobin (Hb) levels of 51 pregnant women who were infected with single parasite were reported to be 10.4 ± 1.80 gm/dl (mild anaemia), whereas pregnant women having multiple infections recorded the lowest mean Hb levels of 9.81 ± 0.84 gm/dl (moderate anaemia). However, the overall prevalence of the parasitic infection among pregnant women was 58 (29%). *Ascaris lumbricoides* (32.3%) was the most predominant followed by Hookworm (26.1%), *Giardia lamblia* (21.5%), *Entamoeba histolytica* (10.7%), *Trichuris trichiura* (6.15%), *Strongyloides stercoralis* (1.5%) and *Hymenolepis nana* (1.5%). Also, an overall prevalence of single parasite was 51 (88%) and that of co- infection was 7 (12%), of which co-infection of *Ascaris* and Hookworm was most predominant 4 (57.1%) followed by *Ascaris lumbricoides* and *Trichuris trichiura*, *Ascaris lumbricoides* and *H. nana*, and *Entamoeba histolytica* and *Giardia lamblia* with 1 (14.3%) observed in each. The prevalence of Intestinal Parasite showed significant association with their residency area ($p < 0.009$), habit of use of latrine ($p = 0.002$) and source of water ($p = 0.009$). The prevalence rate of IPI was increased as the family size of pregnant women increases and the literacy status decreases. An integrated programme for the control of this parasitic infection should be regarded as an issue of public health priority in order to reduce the degree of anaemia during pregnancy.