

# Assessing diet intake using Food Frequency data from pregnant and non-pregnant Nepali Women

Elizabeth Marino-Costello, Robin Shrestha, Lichen Liang, Shibani Ghosh, Lynne Ausman and Patrick Webb  
Tufts University, Boston, Massachusetts, USA,

Abstract Number: 2

## Background

- Nepali women of child bearing age are recommended to consume an energy and nutrient dense diet with particular emphasis on high quality protein, calcium, iron and folic acid (DFTQC, 2012).
- Pre-conception deficiencies in macro and micro-nutrients can result in adverse effects during pregnancy and in birth outcomes.
- Few studies in Nepal have looked into the change in dietary pattern between the pre-pregnant and pregnancy state, when the physiological and nutritional demand is high.

## Objectives and Methods

### Objectives

- Compare the dietary intake pattern of rural Nepali women during their pregnant and non-pregnant stages to identify dietary intake changes between these stages and,
- Determine whether or not the order of the stages made a difference.

### Methods

- This analysis utilizes two balanced panels (Panel 1 and 2) of a nationally representative, multi-year annual household survey performed in 21 districts in Nepal in 2013 (Panel 1) and 2014 (Panel 2).
- Of all women interviewed, we identified 772 pregnant women between 15 to 49 years of age across two panels.
- Group 1, 342 women were non pregnant in Panel 1 and pregnant in panel 2.
- Group 2, 430 women pregnant in Panel 1 and lactating in Panel 2.
- A 7 day food frequency questionnaire with a list of 49 different foods and food groups was in both panels
- Two sets of comparisons were done.

## Results

- In Group 1, most commonly consumed foods included rice, daal, wheat, vegetable oil, potatoes, tomatoes, green beans, okra and dark green leafy vegetables.
- No significant differences were observed in consumption patterns of animal source foods, fruits and vegetables from pre-conception to pregnancy (Group 1). Women consumed slightly less potatoes and slightly more vegetable oil when pregnant (Figure 1,  $p < 0.05$ )
- In Group 2, commonly consumed foods were similar to Group 1 (potatoes, rice, vegetable oil, daal, wheat). Patterns of animal source food consumption were similar to Group 1 (Figure 2)

## Results

Figure 1: Seven day frequency comparing pre-conception to pregnancy (n=342)- Group 1

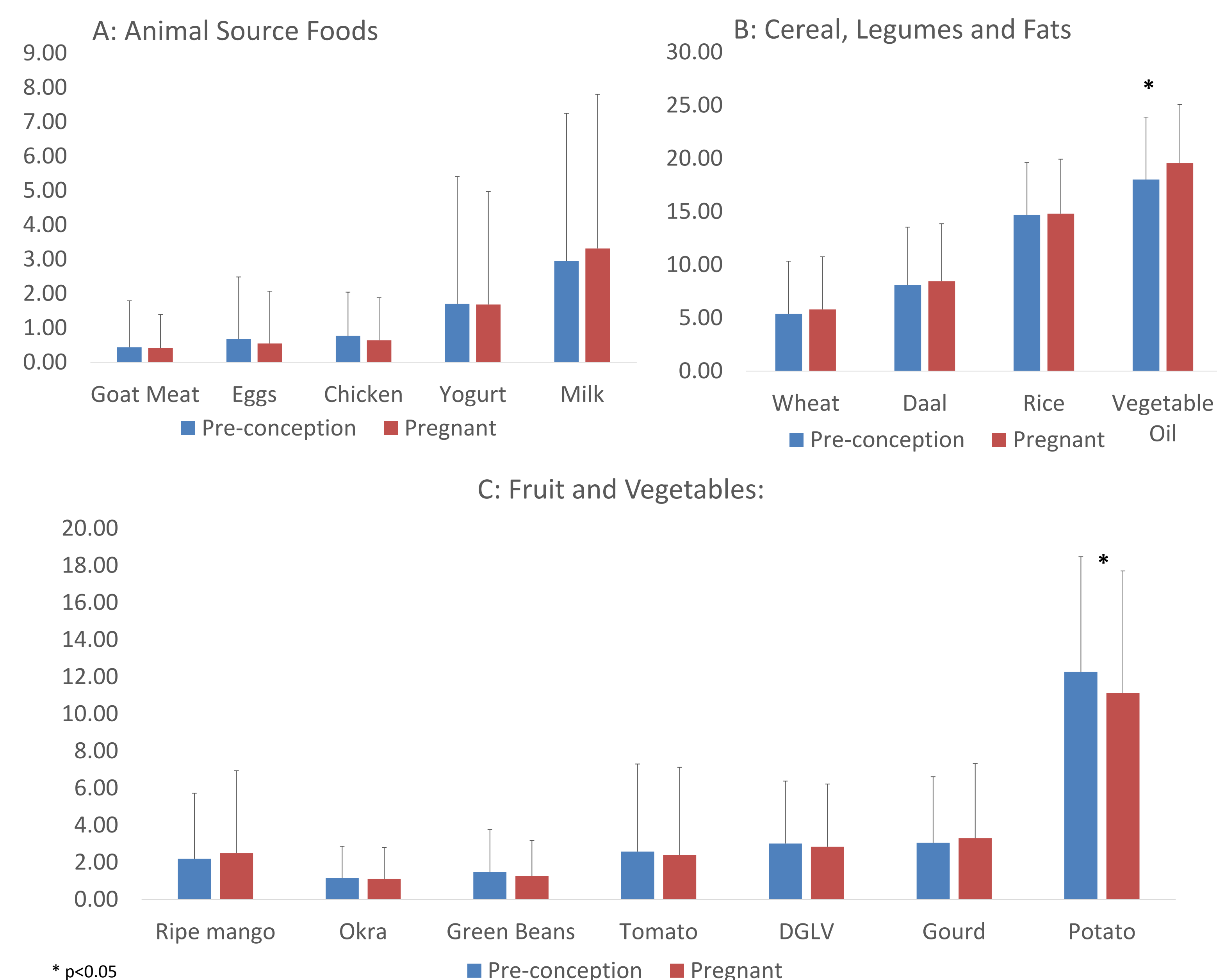
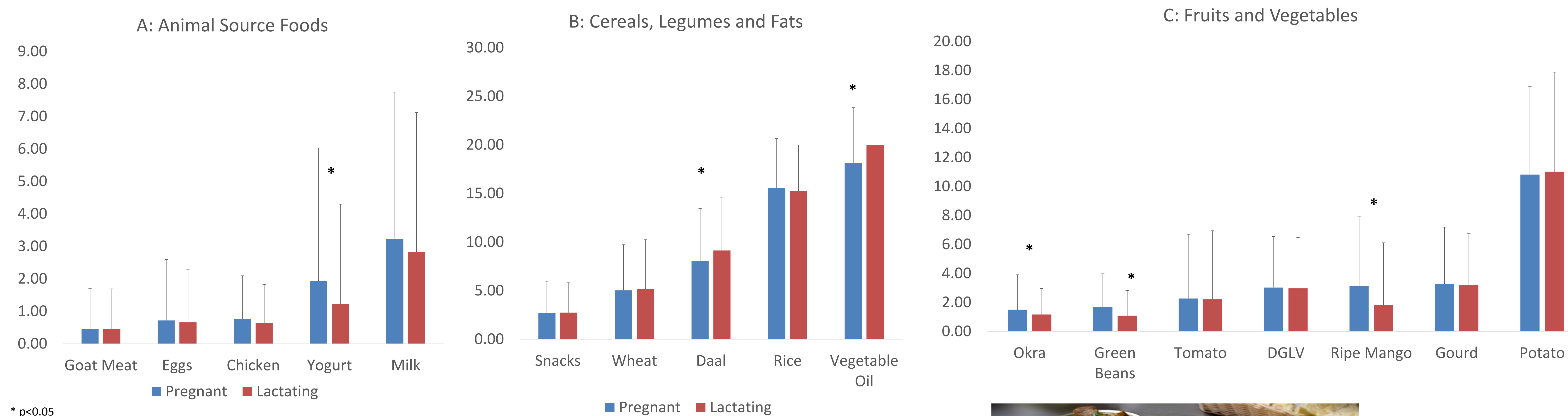


Figure 2: Seven day frequency comparing pregnancy to lactation (n=430)- Group 2



- In Group 2. Significant differences were observed in the consumption of yogurt, daal, vegetable oil, mangoes, okra and green beans
- No other differences were observed

## Conclusions

### Key Findings

- Consumption of most foods show small frequency of overall intake of foods that are required during pregnancy and lactation which suggest that these women may not be meeting their micronutrient needs or increased caloric needs during pregnancy and lactation.
- No matter what stage in the life cycle, regardless of status, women take in a diet where oil and rice consistently dominate their daily intake. Vegetable oil intake increased in pregnant stage.
- Protein source frequency may be 1-3 times per week, even during pregnancy which falls short of meeting dietary requirements during pregnancy.

### Further analysis

- Assess nutritional quality of the post-pregnant and non-pregnant groups.
- It will be necessary to inquire about the portion sizes of intakes moving beyond the diet frequency
- Comparison of diet quality using portion sizes vs. diet needs for both pregnant and non-pregnant women.



## Acknowledgements

Funding sources: Support for this research was provided by the Feed the Future Innovation Lab for Nutrition, which is funded by the United States Agency for International Development under grant ID AID-263-LA-14-00004. The opinions expressed herein are solely those of the authors.

## References

- DFTQC 2012. Food Composition Table for Nepal. Nepal Government, Ministry of Agriculture Development, 86 pages
- MOH, Nepal, New ERA and ICF 2017. Nepal Demographic and Health Survey 2016, Kathmandu, Nepal: Ministry of Health, Nepal. 636 pages
- Crozier SR, Robinson SM, Godfrey KM, Cooper C, Inskip HM. Dietary patterns change little from before to during pregnancy. *J Nutr.* 2009 October ; 139(10): 1956-1963. doi:10.3945/jn.109.109579.