Understanding dietary behaviour change amongst those with diabetes and high blood glucose levels in Kathmandu

Lizzie Caperon[1]*, Abriti Arjyal[2], Puja KC[2], Jyoti Kuikel[2], James Newell[1], Andrew Prestwich[3], Rebecca King[1].

1. Nuffield Centre for International Health and Development, Leeds Institute of Health Sciences, University of Leeds, LS2 9JT, United Kingdom,
2. HERD International, Prasuti Griha Marg, Kathmandu 44600, Nepal,
3. School of Psychology, University of Leeds, LS2 9JT, United Kingdom

UNIVERSITY OF LEEDS

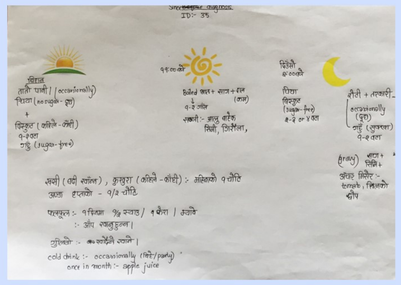
Why is it important to consider the determinants of dietary behaviour?

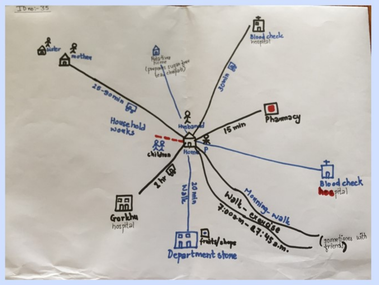
- Non-communicable diseases [NCDs] are a leading cause of death globally with 70% of global deaths due to NCDs in 2015. This figure is projected to increase significantly (1).
- The burden of NCDs is highest in low- and middle-income countries [LMICs] where over three quarters of global NCD deaths [30.7 million] occurred in 2015 (1).
- Diabetes is the fourth most common NCD after cardiovascular disease, cancer and respiratory diseases and is responsible for 1.6 million deaths globally (1).
- As 80% of global diabetes deaths occur in low income countries (2) it is a disease which needs tackling in these settings.
- Low income South Asian countries, such as Nepal, have seen a particularly rapid increase in the prevalence of diabetes in the past two decades. South Asians are at increased risk of diabetes compared with other populations such as Caucasians (3-5). I
- Increasing urbanisation has been linked with increased incidence of diabetes in Nepal (18).
- Unhealthy diet (high in salt, sugar and fat and low fibre, fruits and vegetables) is a cause of diabetes (3, 6, 7).

What were our objectives?

1. To develop an ecological model to expose the importance of broader influences on dietary behaviour by understanding a research context in-depth
2. To investigate how thinking ecologically can lead to the development of more culturally compelling, tailored contextually-appropriate and effective intervention design.

How did we investigate?

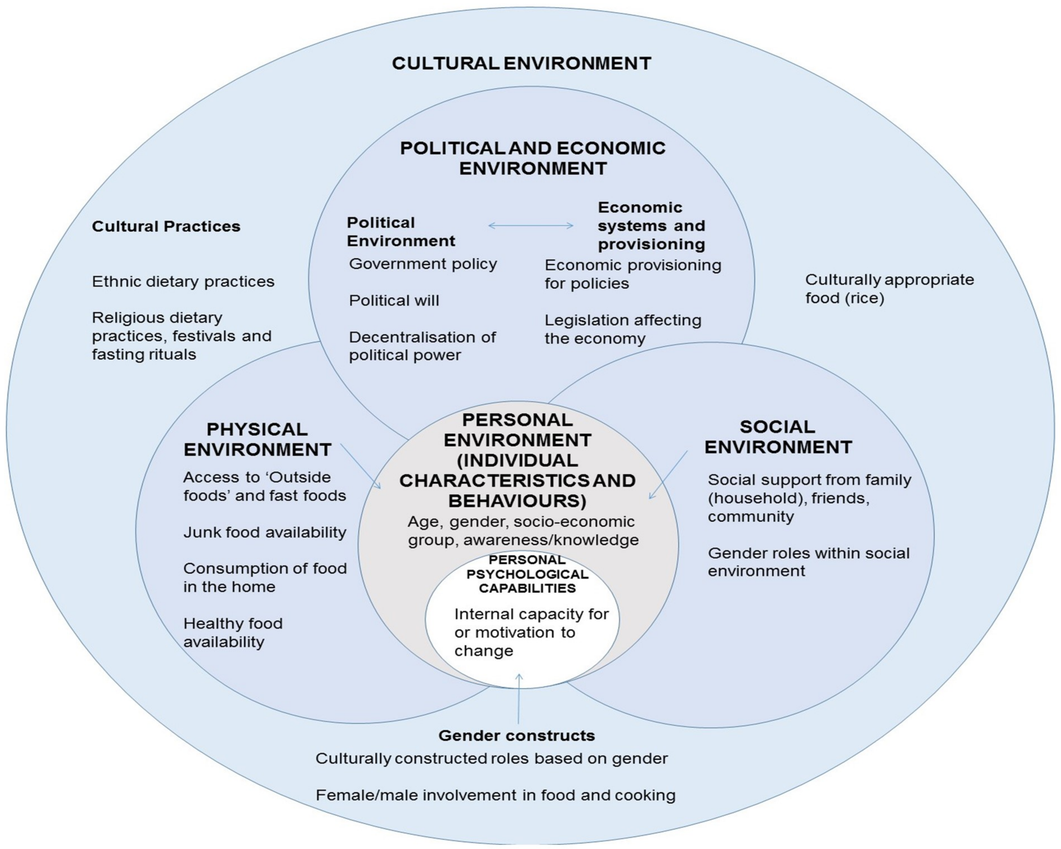




Qualitative research methods including:

- Participatory methods such as participants mapping their daily eating habits according to time of day
- Participants mapping access to people and places from their homes, such as to health facilities or friends' houses.
- Use of a Nepali calendar which listed cultural festivals and events as a prompt to encourage discussion of eating practices at different times of the year.
- We conducted **38 interviews** by purposively selecting: patients and their partners (n = 22), health workers (n = 9) policy makers (n = 2), researchers working on NCDs (n = 3) and senior clinicians (n = 2)

What are the determinants of dietary behaviour?



Conclusions

- **Cultural environment** was overarching and highly influential, corroborating the need for more culturally sensitive and adapted approaches to health interventions in LMICs.
- Other models do not consider culture as such an important determinant of behaviour (7-9),
- Gender constructs (e.g. role of female in the household regarding cooking) were important in determining dietary behaviour.
- Understanding of the cultural nuances and multiple socio-ecological environments can be used to propose interventions which are culturally compelling by engaging communities.
- The possibility of adapting cultural traditions in consultation with communities should be explored further to improve health outcomes.
- This study has challenged the one-size-fits-all approach to tackling NCDs. It highlights the value of investigating LMIC contexts in-depth.
- Our ecological model is the first one of it's kind to understand dietary behaviour in people with diabetes or high blood glucose levels in an LMIC.

Bibliography

1. WHO. NCD mortality and morbidity 2017
2. WHO. Global status report on non communicable diseases 2014. Geneva: WHO; 2014.
3. Jayawardena R, Ranasinghe P, Byrne NM, Soares MJ, Katulanda P, Hills AP. Prevalence and trends of the diabetes epidemic in South Asia: a systematic review and meta-analysis. BMC Public Health. 2012;12(1):380.
4. Kanaya AM, Herrington D, Vittinghoff E, Ewing SK, Liu K, Blaha MJ, et al. Understanding the high prevalence of diabetes in US south Asians compared with four racial/ethnic groups: the MASALA and MESA studies. Diabetes care. 2014;37(6):1621-8.
5. Yajnik CS. Nutrient-mediated teratogenesis and fuel-mediated teratogenesis: Two pathways of intrauterine programming of diabetes. International Journal of Gynecology & Obstetrics. 2009;104(Supplement).
6. Malik VS, Popkin BM, Bray GA, Després J-P, Willett WC, Hu FB. Sugar-Sweetened Beverages and Risk of Metabolic Syndrome and Type 2 Diabetes. Diabetes Care. 2010;33(11):2477-83.
7. WHO. 10 facts on obesity 2014
8. Story M, Kaphingst KM, Robinson-O'Brien R, Glanz K. Creating Healthy Food and Eating Environments: Policy and Environmental Approaches. Annual Review of Public Health. 2008;29(1):253-72.
9. Sallis JF, Cervero RB, Ascher W, Henderson KA, Kraft MK, Kerr J. An ecological approach to creating active living communities. Annu Rev Public Health. 2006;27:297-322.

Contact

Lizzie Caperon
e.l.v.caperon@leeds.ac.uk
Twitter: @LCaperon
LinkedIn: https://www.linkedin.com/in/lizziecaperon/
Researchgate:
https://www.researchgate.net/profile/Lizzie_Caperon
Nuffield Centre for International Health and Development, Leeds Institute of Health Sciences, University of Leeds, UK.