



## Dietary assessment of meal frequency reveals time-restricted eating practices to be present in Indigenous San communities of Botswana and Namibia

### RATIONALE

Globalization and dietary transitions from traditional staples to unhealthy, highly processed diets and sedentary lifestyles are among the major modifiable behavioural risk factors for diet-related disorders and non-communicable diseases (NCDs) in Botswana.<sup>1</sup> Various preventative and mitigation strategies, including consumption of indigenous diets, increased physical activity, and time-restricted eating, are continually being explored. Time-restricted eating, also known as intermittent fasting has gained popularity recently, mainly in high-income countries, as a promising weight management tool.<sup>2</sup> Moreover, research posits that intermittent fasting, can have multiple health benefits for many chronic diseases.<sup>3</sup> While often presented as a novel invention, there is literature showing historical and cultural ties to Indigenous populations.<sup>4</sup> Despite these suggestions, studies about this practice largely lack Indigenous perspectives.

This policy brief presents findings from a study that explored the historical origins and cultural underpinnings of time-restricted eating among Indigenous San people in Botswana and Namibia. Our findings demonstrate the need to leverage Indigenous knowledge to complement existing western science-oriented interventions to mitigate non-communicable diseases. These findings strengthen the global imperative to intensify multi-sectoral collaborations to co-create solutions for NCD mitigation.

### KEY MESSAGES

- There are records of time-restricted eating among some Indigenous San groups in Botswana and Namibia.
- The tradition primarily served as a coping mechanism to save food but also to physically train the body for periods of involuntary food restrictions.
- Variations in patterns of time-restricted eating were observed; two meals a day (breakfast and dinner) was common among San groups in Botswana. Mixed patterns were reported in Namibia (one meal and two meals per day).
- There is an urgent need to invest in Indigenous Knowledge research to complement existing health research.

## SURVEY QUESTIONS

1. What is known about the culture of time-restricted eating in your culture?
2. What are the known patterns and processes of time-restricted eating in your culture?
3. What factors including the cost, timing, number of meals per day, nutrition quality and preparation time influenced/s time-restricted eating in your culture?
4. Finally, what do you think are some of the health benefits of time-restricted eating?

## METHODS AND FINDINGS

### Background

Botswana is grappling with a rising burden of obesity and diet-related non-communicable diseases, including cardiovascular diseases, cancers, and diabetes<sup>5</sup>. This struggle is reflected in health data from the past fifteen years. In 2019, approximately 46% of deaths in Botswana were attributed to NCDs<sup>5</sup>. Moreover, over one-third of the population was found to be overweight in 2007<sup>6,7</sup>. Unfortunately, physical activity and vegetable and fruit consumption remained below recommended levels when measured in 2014<sup>5,6</sup>.

In response, the Botswana government has implemented various strategies to tackle these issues. These include nationwide health promotion and education initiatives, regulations on trans fats and salt consumption, and guidelines for food marketing and physical activity<sup>7,8</sup>.

### Methods

In this study we conducted a qualitative inquiry (in-depth interviews and focus group discussion) among the Indigenous San people of Botswana and Namibia to investigate the historical origins and cultural underpinnings of time-restricted eating. In Namibia, data was collected at Ekoka and Eendobe, 2 focus group discussions (n=15 participants each) and in-depth interviews (n=4). In Botswana, four areas (D'kar, Goortlaagte, New Xade and Ghanzi Township) were included in the study. We conducted 4 focus group discussions (8-10 members in each) and 9 in-depth interviews across the different locations.

The inquiry was guided by the following four questions:

1. What is known about the culture of time-restricted eating in your culture?
2. What are the known patterns and processes of time-restricted eating in your culture?
3. What factors including the cost, timing, number of meals per day, nutrition quality and preparation time influenced/s time-restricted eating in your culture?
4. Finally, what are some of the overall benefits of time-restricted eating?

### Findings

- Time-restricted eating is historically an integral part of the cultural practices among some San people. The study participants in Botswana described it as an ancient practice used to conserve food during periods of scarcity. Given the San people's nomadic culture as hunters and gatherers, time-restricted eating was also an important strategy to train the body to travel long distances.
- Our study participants in Botswana often reported a two meals/per day pattern characterized by the consumption of only breakfast and dinner. Snacking in between was allowed for vulnerable groups (children, pregnant women, the elderly and the sick). While the practice has significantly declined, traces remain particularly in some areas among the elderly.
- In Namibia, some groups didn't recall any records (experiences, documentation, and oral history) of time-restricted eating in their

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culture. Meanwhile, variations of patterns, which included two meals and one meal a day, among others, were reported.

- There is a consensus in both countries that traditional Indigenous foods were cheaper and more nutritious compared to most of the contemporary diets containing highly processed, fatty, and salty foods. However, most of our study participants indicated that traditional diets required longer preparation time.
- Study participants also associated time-restricted eating with improved health, lower rates of obesity and overweight, and diet-related non-communicable diseases.

## NEXT STEPS

### Future Work

Plans are underway to share these findings with policymakers through policy briefs, seminars, published reports and social media.

Further research is recommended to:

1. Examine the origins and prevalence of time-restricted eating among other Indigenous and non-Indigenous populations.
2. Examine this cultural practice more deeply to ascertain the underlying motivation among these population (health, financial, cultural reasons, or all of them)
3. Investigate the association between time-restricted eating and health outcomes.

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### CITATION

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