



## The effect of *Gymnema sylvestre* on motivations to consume sweet foods – a qualitative investigation

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Global consumption of sugar-sweetened foods (SSF) is high, despite being linked with obesity<sup>(1)</sup>. Motivations to eat SSF may contribute to high sugar intakes<sup>(2)</sup>. The herb *Gymnema sylvestre* (GS) may reduce SSF consumption<sup>(3)</sup>, but its effects on motivations to eat SSF are unknown. This study aimed to investigate effects of GS on adult's motivations to eat SSF. The study used a placebo-controlled randomised cross-over method, of which seven participants (mean age of 34 ± 13.8 years; two males, five females) who self-identified as having a sweet tooth agreed to interview. A placebo mint was tested three times daily in-between meals (i.e., PLAC-SYS) for 14 days, before random allocation to one of two GS treatments for a second 14-day period, crossing over GS treatments in a final 14-day period. The GS treatments were identical GS-containing mints, administered systematically three times daily in-between meals (i.e., GS-SYS); or ad-libitum up to six times daily (i.e., GS-ADLIB). Each participant completed four 30-minute interviews – at baseline and after each 14-day testing period – to capture perspectives on changes in motivations, and the effects of treatments on SSF intake. Interviews occurred on Zoom software or in person, according to participant preference. Interview transcripts were uploaded to NVivo, and themes regarding motivations to eat SSF were identified and explored to ascertain effects on participant's behaviour during each treatment, and what influenced their motivations. Baseline motivations to eat or to avoid SSF were categorised in psychological, external, habitual, hedonistic and physiological themes (except none habitually avoided SSF). Baseline motivations to eat and avoid SSF were influenced by deliberate decisions to change lifestyles and external factors (e.g., occupations). During testing of PLAC-SYS, GS-SYS and GS-ADLIB, participants' motivations were affected by each treatment and external factors. At all stages participants were still motivated hedonistically to eat SSF. Compared to PLAC-SYS, both GS treatments were more effective because they reduced pleasure derived from SSF more and enhanced mindful eating. Four participants preferred GS-SYS to GS-ADLIB because of taste preference, and because it was more effective at changing behaviours around eating SSF. Participants also reported self-control of SSF intake changed because of GS-ADLIB (but not GS-SYS or PLAC-SYS) and external factors. Overall, reported self-control levels varied during the study, mostly because of external factors rather than the effects of GS-ADLIB. Compared to PLAC-SYS, both GS treatments may increase motivations to avoid SSF. The herb may be useful in interventions already utilising mindful eating by increasing the time between initial motivations to eat, and actually eating SSF. External factors also affect how in control individuals feel over SSF intake; GS-ADLIB may enhance self-control. Interventions supporting navigation of changing external factors, combined with GS, could be particularly effective in reducing SSF intake.

**Keywords:** sugar-sweetened foods; motivations; mindfulness; sugar-reduction

### Ethics Declaration

Yes

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### References

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