leat way too mach of it and can't control my intake" Behaviour Change Strategies for limiting sugar consumption

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Introduction and aims

Sugar is consumed widely and excessively causing multiple health harms. Sugar consumption is symptomized similar to substance use disorders (e.g., binging, tolerance, withdrawal)¹⁻². Behavioural change strategies (BCS) are commonly used in addictions. BCS is a cognitive or behavioural action that is taken to reduce behaviour or substance use which can be undertaken with or without professional support. If sugar is addictive, then BCS should also apply. The aim of this study is to create BCS taxonomy for sugar reduction based on alcohol³, gambling⁴ and internet taxonomies⁵.

Methods

We searched professional websites (i.e., government, health organizations, media) and consumer developed content (i.e., forums) for the presence of BCS. A total of 47 sources were identified which yielded 1287 change strategies instances. Those were coded using pragmatic content analysis and organized into the Rubicon Model of Action Phases⁶.

Pre-decisional phase form intention

Feedback

- Assess sugar intake whether it is problematic
- Take a test (e.g., blood-sugar) to understand whether sugar consumption is excessive
- Ask for a feedback on sugar consumption from others

Realisation

- Realise and admit having a problem
- Notice the negative effects of sugar
- Recognise denial or justification

Reasons to change

• Have clear reasons why stop

Information on sugar

• Understand how sugar is made; what is the physiological

purpose of sugar; why it is added to foods by manufacturers

barriers

• Identify issues which prompt use of sugary foods as a coping mechanism

Underlying reasons and

• Identify environmental factors which promote overconsumption

Decisional Information Balance

- Consider harms
- Think of the benefits from quitting
- Weigh in pros and cons

Standards and guidelines

• Find recommended limits

Knowledge and

- Seek for information on sugar and its affects
- Learn about different types of sugar
- Understand how much sugar and what types of sugar are in foods
- Search for tips, ways on how to reduce sugar consumption

Pre-actional phase initiate intention

Commitment

- Form a clear intention
- Announce intention to oneself or to others
- Sign-up for a challenge

Accountability

- Be accountable to self or others
- Seek opportunities to be accountable (get an app)

Goal setting

- Set specific, achievable goals
- Set personal limits for sugar consumption
- Monitor progress

Action planning

- Plan sugar reduction
- Choose strategies
- Set objectives and milestones
- Make rules and exemptions

Actional phase enact the change

Avoidance

- Create environment where sugar is unavailable
- Store sugar in hard to reach places out of sight
- Do not purchase sugary foods

- Consumption control • Discard/give away excess amount
- Change the way sugary product is consumed (hot vs cold tea)
- Bulk up sugary foods with other
- Prolong consumption to achieve greater satisfaction
- non-sugary ingredients

• Use appetite suppressers

Abstinence

Go cold turkey

Cognitive

ous substance

• Retrain taste pallet

restructuring

• Try a period of abstinence

• Set specific days to abstain

Avoid certain sugary foods

• Understand and readjust

Think of sugar as a hazard-

cognitions around sugar

• Practice mindful eating

Reduction

- Eat sugar in moderation as per set limit
- Make own food with reduced sugar
- Purchase low-sugar or no added sugar toods

- socialising) • Find activities which provide similar out
 - comes as sugar (e.g., feeling good)

• Fill time with activities (e.g., hobbies, exercise,

Substance Substitution

Alternatives

- Replace sugar with products
- which can mimic sugar properties • Substitute sugary foods for other products

Environmental restructuring

- Overhaul the lifestyle, create
- new sustainable behaviour • Create environment where healthier food choices are more available
- Attend sugar-free environments

Selfmonitoring

- Track consumption and progress
- Monitor thoughts and feelings
- Write in journals, blogs or on forums

Cravings and urges

- Recognise the causes and triggers
- Prevent cravings and urges from happening (e.g., sleep, hydrate)
- Use natural products/supplements
- Distract from cravings and urges
- Delay consuming until urge has passed
- Reaffirm the commitment to reduce
- Learn to ignore cravings and urges

Conditioning

 Reward for achievement of goals and milestones

Maintain readiness

- Use willpower, self-discipline and self-control
- Take it slow, one day at a time, small steps
- Be positive, believe in success, be prepared for obstacles
- Keep motivation up by using daily affirmations

Post-actional phase evaluate

Evaluation

- Evaluate process and strategies
- Analyse relapse and learn from it

Multi-phase

Anonymous support

• Seek support on forums; share stories, experiences, ask for help

Social support (family and friends)

- Tell family and friends about sugar problem
- Ask for help and support

External support

- Seek professional help
- Join support group • Use other treatment
- (e.g., Keto diet, detox, medication)

Wellbeing

 Target overall wellbeing to support sugar reduction (e.g., healthy diet, regular exercise, selfcare)

Results

Overall, BCS were similar to those identified for alcohol, gambling and internet. The most frequent category was substance substitution (17.8%) followed by reduction (12.4%) and abstinence (12.0%). Professional sources had more discussion on substance substitution than consumers (25.8% vs 12.5%) and reduction (18.9% vs 8.0%). While maintain readiness had an opposite trend (1.0% vs 7.1%).

Discussion

The study found BCS were frequently used to reduce sugar consumption. BCS for sugar were similar to alcohol, gambling and internet with some nuanced differences in terms of the content and description of strategies. These findings are potentially helpful for conceptualizing sugar as an addiction as well as for the development of interventions.

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