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RESEARCH ARTICLE



Examining dietary self-talk content and context for discretionary snacking behaviour: a qualitative interview study

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ABSTRACT

Background: Consuming discretionary snack foods high in calories, salt, sugar or fat in between regular meals can have a negative impact on weight management and health. Despite the intention to refrain from discretionary snacking, individuals often report feeling tempted by snack foods. A cognitive process to resolve food choice related tension may be dietary self-talk which is one's inner speech around dietary choice. This study aimed to understand the content and context of dietary self-talk before consuming discretionary snack foods.

Methods: Qualitative semi-structured interviews based on Think-Aloud methods were conducted remotely. Participants answered open-ended questions and were presented with a list of 37 dietary self-talk items. Interview transcripts were analyzed thematically.

Results: Interviews ($n = 18$, age: 19–54 years, 9 men, 9 women) confirmed the frequent use of dietary self-talk with all 37 content items endorsed. Reported use was highest for the self-talk items: 'It is a special occasion'; 'I did physical activity/exercise today'; and 'I am hungry'. Three new items were developed, eight items were refined. Identified key contextual themes were: 'reward', 'social', 'convenience', 'automaticity', and 'hunger'.

Conclusions: This study lists 40 reasons people use to allow themselves to consume discretionary snack foods and identifies contextual factors of dietary-self talk. All participants reported using dietary self-talk, with variation in content, frequency and degree of automaticity. Recognising and changing dietary self-talk may be a promising intervention target for changing discretionary snacking behaviour.

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Dietary self-talk;
discretionary snack; eating
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1. Introduction

Eating behaviours are a critical element in maintaining one's health and wellbeing (Bacon et al., 2019). Discretionary snack foods consumed between main meals are often high in calories, salt, sugar or fat (Hess, Jonnalagadda, & Slavin, 2016). Snacks have appeal

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because they are quick, convenient, and appetising but they are not always the most nutritious option (Rusmevichientong, Jaynes, & Kazemi, 2020). Globally, the consumption of discretionary snack food has increased in the past 40 years (Kant & Graubard, 2015; Vatanparast et al., 2019) and the types of snacks have shifted largely towards those high in energy yet low in nutritional value (Piernas & Popkin, 2010). Discretionary snack consumption can contribute towards a negative impact on weight management and health (Bacon et al., 2019).

Having excess weight increases the risk of chronic diseases, and avoiding discretionary snacking may contribute towards maintaining a healthy weight. The 2018 Canadian Community Health Survey, for example, reported that 26.8% of Canadian adults are estimated to have a BMI that classifies them as obese, with another 36.3% classified as overweight (Statistics Canada, 2019). Moreover, 63.1% of the population in Canada lives with increased health risks owing to excess weight. The escalation of discretionary snacking behaviours and associated increased energy intake may contribute to the increased prevalence of individuals with overweight and obesity (Piernas & Popkin, 2010).

The consumption of discretionary snack food is discouraged by food consumption guidelines. Canada's Food Guide, for example, suggests being mindful of the eating behaviours, including becoming more aware of why, when, what, and how much food is eaten (Government of Canada, 2019). Individuals frequently report being aware that the discretionary snacks they consume do not contribute to healthy eating, yet they still engage in this behaviour, often against intentions to refrain from snacking (Verhoeven, Adriaanse, Evers, & de Ridder, 2012).

Several cognitive processes have been outlined which contribute to the consumption of snack foods. These include 'attentional bias' (i.e. difficulty disengaging attention from food cues), 'temporal discounting' (i.e. discounting the value of future rewards relative to opportunities for immediate gratification) and 'preference reversal' (i.e. switch of a preference for an immediate reward if a valued option is not available) (Appelhans, French, Pagoto, & Sherwood, 2016).

According to the goal conflict model of eating, people who attempt to lose weight tend to struggle with eating healthily owing to the anticipated enjoyment of consuming something they find appetising (Stroebe, Van Koningsbruggen, Papies, & Aarts, 2013). This anticipation of enjoyment can create an internal conflict between two goals; the enjoyment of food and weight control. When the thought of eating palatable food outweighs the goal of weight control, individuals will violate their dietary intentions and eat discretionary food items.

A part of the cognitive processes that resolve the tension between healthy eating goals and the goal of consuming discretionary food may be dietary self-talk. Dietary self-talk can be defined as an ongoing internal dialogue around deciding whether or not to consume a particular food. In the context of the goal conflict model of eating (Stroebe et al., 2013), dietary self-talk might provide a mechanism for switching from the weight control goal to the food enjoyment goal. Despite the prominence of the self-talk concept in domains such as sports performance (Tod, Hardy, & Oliver, 2011) and disordered eating (Aya, Ulusoy, & Cardi, 2019), limited research to date has explicitly focused on the self-talk around everyday food choices including the context of discretionary snacking. As snacking is a complex behaviour, understanding the content of dietary self-talk before consuming discretionary snacks may provide a target for health-focused

eating interventions. Furthermore, understanding perceptions of the context within which dietary self-talk occurs will allow to inform how to situate future research and intervention on this phenomenon.

This study aimed to increase the understanding of the phenomenon of dietary self-talk before consuming discretionary snack foods. The study's specific objectives were to (1) verify and extend the content of a preliminary list of 37 dietary self-talk items, and (2) examine people's views and reflections on the context of dietary self-talk.

2. Methods

2.1. Design

Qualitative interview study including think-aloud methods (Eccles & Aarsal, 2017).

2.2. Inclusion criteria

Individuals were included if they were over 18 years of age. There was no geographical restriction, and study participation was required to understand and converse in English. Those with a self-reported clinical eating disorder diagnosis were excluded, as their food-based cognitions and emotions may differ from those of the general public.

2.3. Recruitment and procedures

Recruitment occurred online through existing social networks using an advertisement that read 'What do you think before eating a snack?'. Interested individuals were invited to contact the researcher to schedule an appointment for the study participation. Interviews were conducted remotely from November 2020 to January 2021 through face-to-face meetings using Microsoft Teams, and were between 16 and 47 min long (median = 23). A trained female researcher (undergraduate student) conducted semi-structured interviews and received ongoing supervision by an academic health psychologist (SD).

Semi-structured interviews followed a topic guide (online Appendix A) divided into four sections:

Section 1 included general questions on discretionary snacking behaviour. To clarify the target behaviour, participants were informed that 'we are interested in snacking, and we focus on the snacks that are high in calories, salt, sugar or fat, that people eat between their main meals'. Questions were then asked about favourite discretionary snacks, time and frequency of consumption.

Section 2 included general questions on dietary self-talk. To define dietary self-talk, participants were informed that '[w]e are interested in what you say to yourself in your head or aloud. Sometimes people call this "excuses" that we make for snacking. We call it dietary self-talk in this study'. Questions were then asked about thoughts prior to discretionary snacking.

Section 3 included the presentation of a list of 37 dietary self-talk items (see online Appendix B). Participants were instructed to think aloud by reporting what comes to mind straight away when they hear the self-talk item.

Section 4 assessed dietary self-talk reflections on the presented list. Participants were then asked demographics, including age, height, weight, vigorous physical activity in the past week, moderate physical activity in the past week, and discretionary snacks consumption between main meals yesterday.

After the interviews were completed, audio files were downloaded as transcripts automatically generated by the software, which were checked for accuracy and anonymised. This study received approval from the Institutional Research Ethics Board (#2020-147).

2.4. The dietary self-talk item list

A list of 30 dietary self-talk items was previously developed using focus groups including 28 participants from the UK and Italy (unpublished Master's dissertation available from the corresponding author). This list was subsequently adapted to the North American context, including adaptations to the phrasing and the addition of further items based on consulting five members of the general population in Canada. The 37 items were grouped into three broad categories:

- (1) *Past-based justifications*: Justifications of snack consumption based on past events or behaviours, both immediate or in the distant past.
- (2) *Future-based justifications*: Justifications of snack consumption based on future behaviour or impact, both immediate or distant.
- (3) *Momentary-based justifications*: Justifications of snack consumptions based on momentary considerations, including context, behaviour and or one's own state of mind. Momentary-based justifications were further sub-categorised into:
 - *Social occasions/social rituals*: Justifications based on social context or custom.
 - *Emotional/internal drivers*: Justifications based on emotional states and drivers.
 - *Functional/rationalisations*: Justifications based on the snack function or rational arguments.

2.5. Analysis

The analysis was undertaken by the first author (JR) and checked by the last author (SD). Data from the interview transcripts were organised by (i) general reflections on discretionary snacking behaviour and dietary self-talk overall (based on topic guide sections 1, 2 and 4), and (ii) think-aloud reflections on a list of self-talk content items (based on topic guide section 3).

To answer study objective 1 (verify and extend the content of a preliminary list of 37 dietary self-talk items), responses to each individual dietary self-talk content items were examined. Item responses were examined for recognition (i.e. participant report recognising an item by indicating self-reported past use) and clarity (e.g. participant ask clarification or an additional explanation in response to an item). Moreover, the participant's general reflections were assessed for overlap with the 37 item list to examine whether any new content items were mentioned that were not present in the original list.

To answer study objective 2 (examine people's views and reflections on the context of dietary self-talk), interview transcriptions underwent thematic analysis to identify salient

themes across all participants, for both the general reflection and responses to specific self-talk items.

3. Results

3.1. Participants

Eighteen individuals (9 women, 9 men) participated in the interviews (see Table 1). Participants were between the ages of 19–25 ($n = 10$) and 36–54 ($n = 8$). Weight status categories based on BMI (kg/m^2) were 18.5–24.9 ($n = 6$), 25.0–29.9 ($n = 5$), >30 ($n = 6$), or unknown ($n = 1$).

3.2. Dietary self-talk content

All participants reported having engaged in some form of dietary self-talk prior to their discretionary snacking behaviour in the past. Moreover, all participants were able to generate dietary self-talk content which they reported using prior to discretionary snacking, without prompting with the specific content items. Participants endorsed dietary self-talk content items in each of the three dietary self-talk categories (i.e. past-based, future-based and momentary-based justifications). All 37 presented items were recognised by at least two participants. Momentary based justifications appeared to be recognised most often including *emotional/internal drivers* (e.g. stressed, distractions, temptation), *social occasions/rituals* (e.g. special occasions, or in presence of others) and *rationalisations* (e.g. convenience). The top five individual items that were endorsed for use, in the order of popularity, were: ‘it is a special occasion’, ‘I did physical activity/ exercise today’, ‘I am hungry’, ‘this snack is just small’, ‘this snack will help me with what I am doing next (e.g. exercise/ studying)’, and ‘this snack is already open/going out of date’.

Participant interviews allowed for the creation of three new items. The new additions included, ‘this snack brings back memories’, ‘I don’t have the willpower to resist this

Table 1. Participant demographics.

Participant identifier	Gender	Age category	BMI (kg/m^2) category	Moderate PA (days/week)	Vigorous PA (days/week)	Discretionary snacks consumed yesterday
0101	Female	30–39	25.0–29.9	2	3	0
0102	Female	19–29	18.5–24.9	2	0	3
0103	Female	30–39	18.5–24.9	1	1	1
0104	Female	40–49	>30	6	2	2
0105	Female	19–29	18.5–24.9	6	5	1
0106	Female	19–29	25.0–29.9	2/3	1	2
0107	Female	30–29	>30	4	3	2
0108	Female	50–59	No data	3/4	1	3/4
0109	Female	19–29	25.0–29.9	4/5	1	2
0201	Male	20–29	18.5–24.9	2	1	3/4
0202	Male	20–29	>30	7	3/4	0
0203	Male	30–39	>30	0	0	2
0204	Male	20–29	18.5–24.9	3/5	0	1
0205	Male	20–29	18.5–24.9	0	0	6
0206	Male	20–29	>30	3/4	2	1
0207	Male	20–29	25.0–29.9	7	7	4
0208	Male	20–29	>30	4/5	3	1
0209	Male	20–29	25.0–29.9	1	3	1

Note. BMI = Body Mass Index, PA = Physical activity.

Table 2. List of 40 dietary self-talk items categorised as past, future and momentary based justifications.

#	Item
Past-based justifications	
1	I did physical activity/exercise.
2	I accomplished something. I deserve it.
3	I had a long/tough day.
4	I haven't eaten much recently.
5	I restricted myself recently.
6	I have a healthy lifestyle.
7	I have already eaten unhealthy food today.
Future-based justifications	
8	I will be active/exercise later.
9	I will eat very little later.
10	This snack to help me with what I am doing next (e.g. exercise/studying).
11	Tomorrow will be a long/hard day.
12	Just this snack. I won't have a snack later.
13	I will start being healthier later.
14	This snack will not have an impact on me.
Momentary-based justifications	
<i>Social occasions/social rituals</i>	
15	It would be rude to refuse the snack.
16	I can share this snack with others.
17	It is a special occasion (e.g. party).
18	It's the weekend.
19	I have been encouraged to eat this snack.
20	This snack is part of what I am doing (e.g. coffee/tea and cookie).
21	Everyone else is eating this snack.
<i>Emotional/internal drivers</i>	
22	This snack will make me feel better.
23	This snack will distract me.
24	I am tired and this snack will help me.
25	I am stressed and this snack will help me.
26	Eating this snack will reduce my desire to eat it.
27	I don't care anymore/Whatever.
28	I am hungry.
29	This snack brings back memories.
30	I don't have the willpower to resist this snack.
31	I am bored, this snack will help me.
<i>Functional/rationalisations</i>	
32	You only live once.
33	This snack is already open/going out of date.
34	I don't have time for anything else except this snack.
35	Other snacks are much more unhealthy.
36	This snack is just small.
37	This snack is cheap/on offer.
38	I have not tried this snack before.
39	Once this snack is gone, it will be a fresh start.
40	I have already eaten healthy food today.

snack'; and 'I am bored, this snack will help me'. In addition, eight items on the original list were revised for clarity. All changes including justifications are outlined online in Appendix C. The final list of items is included in Table 2 and illustrated visually in Figure 1.

3.3. Dietary self-talk context themes

Five key themes were recurrent within the interviews including the prompted and unprompted participant responses to provide additional information on the context within which dietary self-talk occurs: 'reward', 'social', 'convenience', 'automaticity', 'hunger'.

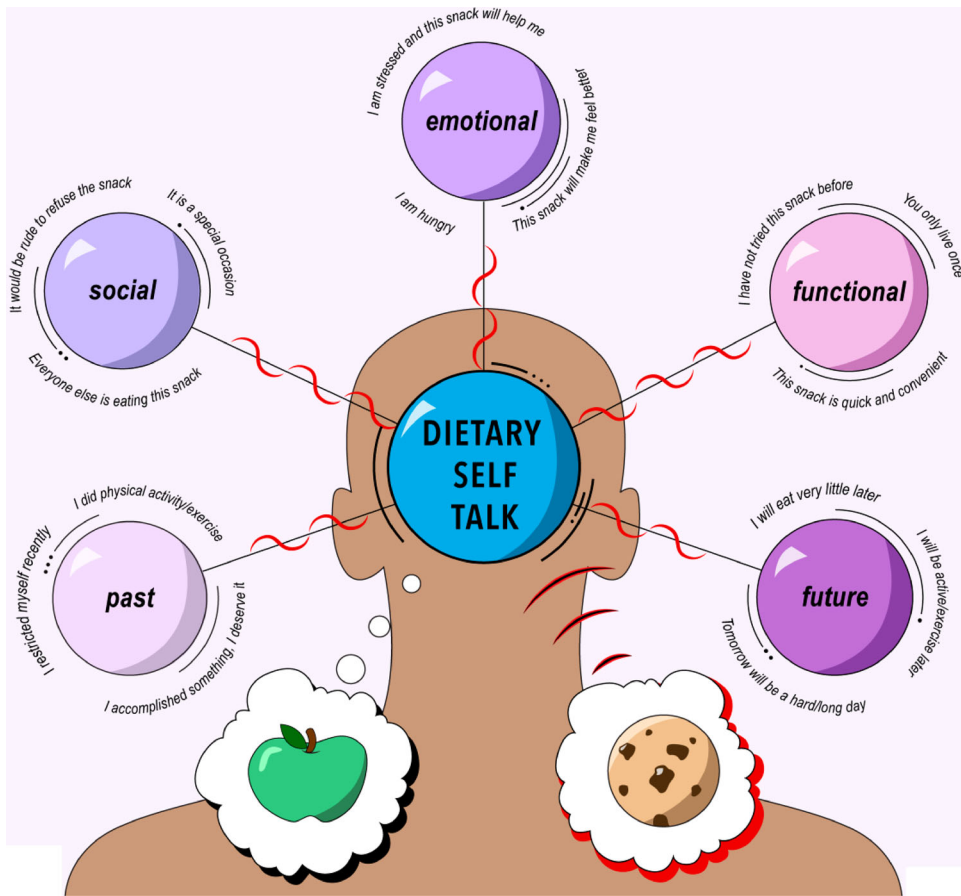


Figure 1. Broad categories of dietary self-talk used to justify discretionary snack consumption. Individual items listed are examples and not an exhaustive list.

3.3.1. Reward

Reward contexts could cue dietary self-talk resulting in discretionary snacking behaviour. The consumption of discretionary snacks was reported frequently in the contexts of celebrating accomplishments or special occasions, after physical activity, or as a 'treat' at the end of a day. Discretionary snack foods were justified as a reward within contexts that could give rise to learned associations, often taught by social others.

It's like a reward ... when examining how I think about food and how I've taught my kids to think about it. It's like, you know, I'm going to go out and I'm going to get you a treat because, you know, you did really well. (Participant 0108)

In the context of rewarding an occasion with discretionary snacks, the use of dietary self-talk was reported to be swift in giving participants permission to move forward and consume the 'not-so-healthy' snack.

Absolutely when you are celebrating, you can eat as bad as you want. I think there's that sort of mindset ... you don't have to think about it just eat whatever you see. It's an open season because you're celebrating. (Participant 0108)

The use of dietary self-talk before eating discretionary snacks in the reward context was often associated with 'joy' and 'fun', while 'celebrating' reinforced the association between the context and discretionary snacking.

The perception of having engaged in healthy behaviour was readily reported as a reward cue for discretionary snacking via dietary self-talk. The majority of participants recognised the item 'I did physical activity/exercise today' before eating a snack high in calories, salt, sugar or fat. The participants often reported rewarding themselves with discretionary snacks for engaging in good, healthy behaviour, as a snack 'will not hurt' them.

Yep ... I worked out today I'm gonna eat something you know like oh hey, I did good today I'm gonna reward myself ... I can eat you know whatever I want as long as I am healthy the rest of the time. (Participant 0202)

Reward, as a context of dietary self-talk, was seldom reported when asking open-ended general questions about thoughts prior to discretionary snacking. However, when participants were prompted with the list of dietary self-talk items, reward context cuing dietary self-talk was frequently reported.

3.3.2. Social

Social contexts were frequently mentioned as cues for dietary self-talk to consume discretionary snacks. The participants often had no intention to consume discretionary snacks, but when these were offered by others, or in the presence of others, they reported feeling obliged to eat them.

I feel like it's socially unacceptable like it can be rude if you don't have a reason to refuse it. (Participant 0107)

Perceived social pressure to eat the snack could lead to an internal dialogue. The justification of not wanting to offend someone was sometimes reported to be followed by a negative internal dialogue.

I take the cupcake because I don't want to offend someone because I don't want to be rude ... I'm eating this cupcake and I'm like holy crap you should not be eating this cupcake, like you don't need this ... one thing you're doing it not to offend someone, but yet you're like internally criticising yourself for it. (Participant 0109)

Social occasions could influence dietary self-talk to consume discretionary snacks, even in the absence of someone offering them. Every participant ($n = 18$) reported that they found themselves 'bound to have more' if there was a social occasion.

I definitely don't think about snacking the same way as I would when I'm by myself ... even like one other person with me and I opened a bag of chips, I have a completely different thought process than I would if I was by myself. (Participant 0208)

Social influence also included social media, promoting 'sugar monstrosities' with 'so much sugar' to make an individual 'sick'. The promotion of discretionary foods on social media was reported as an influence on dietary self-talk that was used to validate consumption.

We had seen them [milkshakes topped with cake] pop up on Instagram so many times that we eventually went down and got them ... it's like so much sugar you can't finish it ... Everybody was going to it and trying it. They were lined out the door ... and they were on

BuzzFeed at one point and Narcity ... We were 100% influenced by seeing pictures of it online. (Participant 0108)

Experiences relating to the discretionary snack, especially if promoted by others, were seen as easy to justify to oneself, especially if snack consumption was framed as an 'experience'.

It wasn't just the snack itself; it was that they had made such a spectacle, that like you only live once. (Participant 0108)

3.3.3. Convenience

Convenience was mentioned frequently as fuelling the internal dialogue around discretionary snacks. Quick and easy snacks were seen as appealing and often justified by their simplicity. Participants' busy lives including work or study made it seem 'so much easier' to grab a fast discretionary snack. A common reason given for the convenience of grabbing and going was unpreparedness; if time was not taken to prepare healthy snacks, participants opted for a less nutritious choice.

The unprepared side of me is unhealthy ... at night when I don't want to think about it ... it's like well, I'm unprepared I'll just grab the cookies. It's so much easier to grab something that's convenient. (Participant 0107)

Participants reported that discretionary snacking behaviour was a 'present thing' that is sometimes accompanied by perceived 'laziness'. If individuals felt a desire to eat, they reported being 'more apt to get something quick and convenient'. An inner dialogue considering the selection of a healthier option in these contexts did not appear to be present.

3.3.4. Hunger

Perceptions of hunger were a predominant self-talk topic around discretionary snack consumption. This included both momentary hunger and the avoidance of hunger in the future. Many participants believed that quick and convenient food options to combat hunger necessitate discretionary snacks.

If you're hungry you'd be more apt to get something quick ... and convenient. In the moment, like I find when it comes to food a lot of times, personally I am thinking of the right now not the later and maybe I need to be thinking more of the later and have more willpower to make those decisions. (Participant 0109)

Dietary self-talk could also cover the avoidance of hunger in the future. If participants were not hungry at the moment but sensed that hunger might arise later, they sometimes used this to justify having a discretionary snack. In these contexts, dietary self-talk was commonly used to 'tide over' until the next meal, or if they were skipping a meal.

I typically don't eat breakfast, so for me it's I should have something so that I'm not hungry in the morning. (Participant 0101)

3.3.5. Automaticity

Underlying every theme identified in the interview transcripts, appeared to be at least some degree of automaticity in relation to the use of dietary self-talk and discretionary

snacking. Using dietary self-talk before eating discretionary snacks, for most participants, was itself automatic that often required little conscious cognition.

I'm someone who like when I'm sitting on the couch watching a movie, I need something to snack on ... I definitely feel like that even when I'm not hungry I just feel like I need to have a snack ... like by accident, eating a bag of chips when I didn't mean to. I did that last night. (Participant 0102)

Using dietary self-talk before consuming discretionary snacks was more commonly reported by female participants compared to males, in the context of emotional regulation. Several female participants reported that snacking automatically when 'stress' and 'emotional feelings' arose, was often accompanied with the perceptions that snacking would make them 'feel better'.

Chocolate makes me feel better. It's like my cigarette or alcohol for some people ... I can see it direct correlation if I get stressed or something gets me upset, I immediately start putting food in my mouth. Just like someone would grab a cigarette ... whatever is closest whatever is easiest. (Participant 0104)

Associations with snacking at nighttime were common for many of the participants. Night snacking was regularly associated with the justification of a 'wind down' to 'eat your snack and relax'.

I make a tea every single night when I'm going to bed ... it's habitual ... like you can't have the tea without the cookie. (Participant 0107)

A prevalent and automatic association with snacking was with watching television or sporting events. For most participants, it was a given that 'for certain things, you're going to have a snack'.

Popcorn with movies, gotta have it right ... I couldn't go to the movie theatre without having popcorn even though I really shouldn't eat it ... It's just like I'm very programmed in that way. (Participant 0108)

The use of dietary self-talk items before consuming discretionary snacks often seemed habitual. One participant alluded to rewarding themselves with 'coffee and a donut', suggesting an association between a discretionary snack with having coffee. When subsequently asked if they have used the dietary self-talk item 'this snack is a part of what I am doing', they said 'I don't really think that I do that' (Participant 0109). Some justifications before eating are unnoticed and automatic, or might have been present prior to a snacking habit being formed and are subsequently not required to further justify the behaviour.

4. Discussion

4.1. Principal findings

Dietary self-talk in the context of discretionary snacking behaviour was a commonly reported phenomenon. Individuals seem to regularly use self-talk to resolve conflicts between intentions to eat healthily and to consume a snack high in fat, sugar or salt. This study verified and extended a list of 40 self-talk content items, which highlight the universal thoughts which were recognised as being used to justify discretionary

snacking. When participants reflected on dietary self-talk, recurrent contextual themes were the justification of snacks as rewards, social influences of snacking, convenience-based considerations, thoughts on and the evidence of automaticity in relation to dietary self-talk and snacking behaviour and hunger. Although most participants reported intentions to avoid discretionary snacking, dietary self-talk could change these priorities suggesting that self-talk prior to snack choice situations might be a potential target for eating behaviour change interventions.

4.2. Strengths and weaknesses of the study

Little research to date has specifically explored the uses and content of dietary self-talk before eating snacks that are high in calories, salt, sugar or fat. This study revised and extended a previously developed list of dietary self-talk items, systematically capturing self-reported thought content (see Table 2). The self-talk items were formulated at a general level, rather than a specific level (e.g. 'I did physical activity/exercise' rather than 'I went for a run'), allowing participants to project their own personal situations onto the item. The high level of recognition of all self-talk items suggests that the level of formulation might have been appropriate.

Several weaknesses should be kept in mind when interpreting the results of this research. Although the self-talk items were developed with input from the Italian, UK and Canadian participants, their content relevance in different cultural contexts is unknown. Moreover, the current list is the first attempt to catalogue a general dietary self-talk content around snacking and will require further refinement and extension. Individuals may also use idiosyncratic self-talk items which are specific to them and do not generalise to others; these will not have been included in the list. The groupings of the self-talk items were undertaken by the authors and different categorisations might exist (De Witt Huberts, Evers, & De Ridder, 2014; Verhoeven, Adriaanse, de Vet, Fennis, & de Ridder, 2015). Finally, the self-reported recognition of the self-talk content was high in participants, but it is not clear whether the self-talk content are thoughts that are experienced in the moment of the snacking choice context, or whether these are used as post-hoc justifications for behaviour that has already occurred.

4.3. Relation to other studies

The current study complements other research which has examined cognitions around food-based temptations. These cognitions are often referred to by different labels, such as justifications (De Witt Huberts et al., 2014; Verhoeven et al., 2015), reasons (De Witt Huberts et al., 2014; Verhoeven et al., 2015) or compensatory health beliefs (Knäuper, Rabiau, Cohen, & Patriciu, 2004).

The current study suggests dietary self-talk as one potential explanation for eating behaviour that conflicts with previous intentions. Dietary self-talk might be added to existing mechanisms of giving into temptations such as 'attentional bias' and 'temporal discounting' (Appelhans et al., 2016). In line with the goal conflict model of eating (Stroebe et al., 2013), most participants reported intentions to make healthy decisions; however, at the opportunity of eating a discretionary snack food, they reported often justifying snacking with the use of dietary self-talk. Figure 2 applies the goal conflict model

of eating behaviour to a snacking context and integrates dietary self-talk as a possible mechanism, which leads to the consumption of discretionary snacks.

In this model, the presence of discretionary snacks leads to the activation of the discretionary snacking goal. Dietary self-talk facilitates the activation of the discretionary snacking goal, while simultaneously inhibiting the healthy eating goal, leading to the increased likelihood of snack consumption.

Some of the content of the 40 dietary self-talk items has been captured previously in the concept of compensatory health beliefs (Knäuper et al., 2004). Compensatory health beliefs are a cognitive mechanism used in the presence of failing to resist temptations and have been defined ‘as beliefs that certain unhealthy (but pleasurable) behaviours can be compensated for by engaging in healthy behaviours’, p. 608 (Knäuper et al., 2004). Evidence suggests that compensation-based beliefs are formed during the moments of dietary conflict, and can lead to the consumption of discretionary snack foods (Kronick & Knäuper, 2010). There is some overlap between compensatory health beliefs such as ‘Breaking a diet today may be compensated for by starting a new diet tomorrow’ and the dietary self-talk items such as ‘I will start being healthier later’. However, the current list of dietary self-talk items differs from compensatory health beliefs in at least three ways. First, the dietary self-talk items go beyond compensation-based cognitions, covering additional cognitions, such as momentary based justifications including social occasions (‘It would be rude to refuse the snack’), emotions (‘I don’t care anymore/Whatever’) or rationalisations (‘This snack is cheap/on offer’). Second, the current list of dietary self-talk items is specific to the behaviour of consuming snack foods that are tempting, compared to the application of general compensatory health beliefs across several different health behaviour contexts. Third, the dietary self-talk items are thought content specific. Even when compensatory health beliefs are assessed as behaviour specific items (e.g. ‘To what extent did you think that you would compensate your snack, for example, by a subsequent sport session or with eating less the next time?’) (Amrein, Scholz, & Inauen, 2021), this differs from compensatory-related items

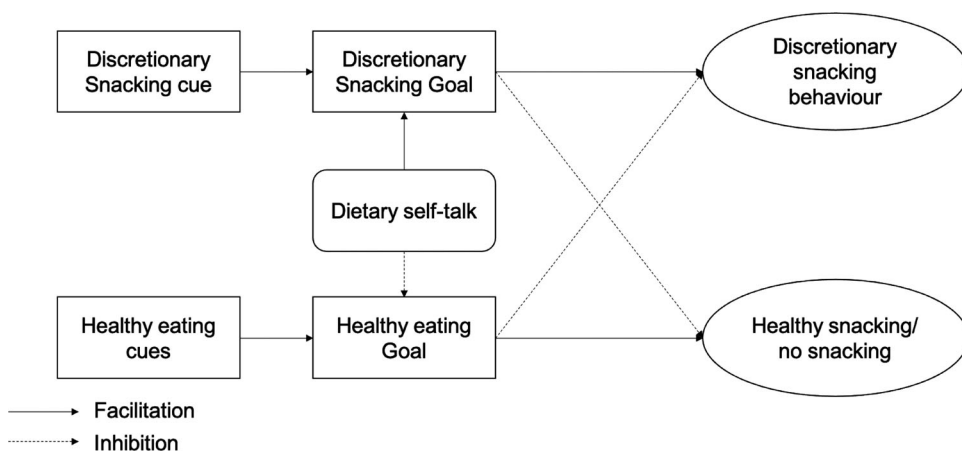


Figure 2. Dietary self-talk integrated into the goal conflict model of eating (Stroebe et al., 2013) applied to the discretionary snacking context.

in the dietary self-talk list, which attempt to provide a closer capture of the precise thought content (e.g. ‘Just this snack. I won’t have a snack later’).

The findings of the current study are similar to Verhoeven et al.’s (2015) study examining reasons for unhealthy snacking, which developed the 35 item reasons to snack inventory. (Verhoeven et al., 2015) The inventory asks individuals to rate the frequency of various reasons for consuming an unhealthy snack (e.g. ‘because it is a party or a birthday’, or ‘because you are watching a movie’). These reasons were grouped into six categories using factor analysis: opportunity induced eating, coping with negative emotions, enjoying a special occasion, rewarding oneself, social pressure, and gaining energy. There are several similarities between the reasons to snack inventory and the dietary self-talk list including both individual items and broad categories. Several individual items are similar in content (e.g. ‘Because you deserve it’ vs. ‘I accomplished something. I deserve it’). Moreover, several categories are similar in nature (e.g. ‘Social pressure’ vs. ‘Social Occasions/Social Rituals’) further validating the potentially broad nature of many of the cognitions and identified categories. However, there are some differences in some of the content, categories and focus. For example, the ‘functional/rationalisations’ category (e.g. ‘You only live once’, or ‘This snack is just small’) did not feature in the reasons to snack inventory (Verhoeven et al., 2015). Moreover, dietary self-talk items are phrased as ‘in the moment’ statements which are intended to represent individual thoughts in snack temptation contexts, whereas the reasons to snack inventory list general snack motives that are not specifically tied to a temptation context.

Several studies have systematically developed lists of behaviour change concepts, including theoretical domains (Michie et al., 2005), behaviour change techniques, methods and strategies (Hartmann-Boyce, Aveyard, Koshiaris, & Jebb, 2016; Knittle et al., 2020; Kok et al., 2016; Michie et al., 2013) environment changing targets (Hollands et al., 2017), modes and forms of intervention delivery (Dombrowski, O’Carroll, & Williams, 2016; Marques et al., 2020) and decision making processes such as heuristics and biases (Gigerenzer & Gaissmaier, 2011; Tversky & Kahneman, 1974). These lists inform research to systematically understand and change behaviour relevant processes. The current dietary self-talk list adds to this literature providing a more specialised list, by focusing on one particular phenomenon (i.e. self-talk) for one specific behaviour (i.e. discretionary snacking), in a specific situation (i.e. temptation resulting from conflicting intentions). Moreover, the themes identified around – accounts of and reflects on – dietary self-talk provide additional contextual information surrounding the phenomenon, enriching the ability to interpret individual items and groupings.

4.4. Implications and future research

There are several areas of future research. The current 40 items dietary self-talk list requires confirmation, extension and quantification. Future research might examine dietary self-talk when it occurs ‘in the moment’ during snacking temptation contexts. Moreover, understanding the quantity and variability of dietary self-talk and its relation to behaviour and behaviour-related outcomes would be useful.

It is likely that the self-talk items are used in combination and future research might examine the clustering of some of the self-talk content items. This might be specifically relevant in certain contexts. For example, the feeling of hunger was a key theme identified

in reflections on self-talk and seemed to give rise to the use of a variety of self-talk. The themes identified in this study might present a starting point for examining contextual factors triggering the combinations of self-talk items.

Given the seemingly general nature of some of the self-talk content, research focusing on the origin and function of general self-talk items might reveal how individuals come to embrace and use certain cognitions to overcome situations of temptation in favour of the health impairing behaviour.

Self-talk is an everyday occurrence and other behavioural domains where intention conflicts occur might be a target for future study. Potential areas for identifying the content of temptation related behavioural self-talk might, for example, be physical activity, alcohol consumption or sleep.

There are some areas of potential application of the current list of dietary self-talk items. The list could be used to inform the use of behaviour change interventions, such as coping planning based techniques like the volitional help sheet (Armitage, 2015), which aims to help to overcome situations of temptations by linking these to goal-directed responses in line with health-relevant intention.

In addition, interventions might focus on changing the style of the self-talk items that people typically use. An experiential study, for example, found that when participants are asked to engage in 'distance self-talk' (i.e. referring to themselves in the third person and by name) enhanced the pursuit of eating healthier compared to 'immersed self-talk' (i.e. referring to themselves in the first person).

Finally, participants' contextual accounts and reflections largely suggested a lack of an ongoing internal dialogue when using dietary self-talk, with self-talk leading to a swift enactment of the snacking behaviour. Interventions might promote both the recognition of dietary self-talk when it occurs and the introduction of self-talk using counter arguments which could bolster health enhancing intentions.

5. Conclusion

This study lists 40 reasons people use to permit themselves to consume discretionary snacks, even if they initially have intentions to avoid them. Most individuals report using dietary self-talk, with variation in the content, frequency and degree of automaticity. Self-talk, in general, seems to be widely used and can be targeted to help individuals improve their snack-related behaviours. Recognising and changing dietary self-talk may be a promising intervention target for reducing discretionary snacking behaviour.

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Author contributions

S.U.D. conceptualised the research and supervised the conduct of the study. R.P. developed the initial list of dietary self-talk items supervised by S.U.D. as part of her M.Sc degree. J.R. collected the data, curated the data, conducted the initial analysis, and wrote the first draft of the manuscript with regular input from S.U.D. throughout. All authors approved the final manuscript for submission.

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