

'SAFE' PILLS: SUPPLEMENTS BELIEFS AND REASONS

Objectives

This survey investigates awareness, beliefs, and attitudes around public supplement usage of people living around London and other European cities. Furthermore, this project provides some insight into attitudes towards medical professionals, and prevalence of multiple supplement and concurrent medication usage for potential safety evaluation.

Introduction

Supplements Definition



Dietary or food supplements can contain food-derived compounds, either from natural or synthetic origin, or a combination of both. Most of them contain concentrated high-potency forms of nutrients (incl. vitamins, minerals, botanicals and other) and may vary widely in composition and characteristics. These are sold separately to regular food supply as tablets, capsules, liquid or powders.

The past 50-100 years have seen continuing changes to our environment, lifestyles, farming and food manufacturing methods, and functional food quality decreased dramatically. In the UK, recent government surveys have confirmed prevalence of various micronutrient deficiencies in 'healthy' populations consuming a 'normal' diet; particularly in low income groups (FSA, 2007). Various UK government initiatives aim to address the need to raise public 'health' awareness, e.g. '5-A-Day' targets, Change for Life, Smoking cessation programs.

Supplements Markets are Growing

Particularly over the past decade, supplement sales had seen phenomenal growth. Global supplement sales are projected to reach \$187 billion in sales by 2010, nearly tripling from 2005. In the UK, annual sales reached £364 m in 2007 and it is estimated that 40% of the population consume vitamin and mineral supplement products (Mintel, 2007).

Persisting Contradictory Claims in Media and Academia

Persisting contradictory, controversial and mixed messages in academic (Tatsioni *et al.*, 2007) and public domains continues to drive general public confusion about this area. Negative studies are often criticised for receiving inadequate funding and using synthetically derived compounds applied in isolation. This is often not clearly disclosed in academic research, as many scientists still believe that 'form' [natural vs. synthetic] is irrelevant (Thiel, 2000).

Regulatory Issues and Safety Concerns

Growing safety concerns, particularly from the medical profession, has been driven by limited scientific evidence for efficacy, reports of adverse effects, drug-nutrient-interactions, and reported deaths. Major adverse events (AEs) and deaths from supplements were reported with 0.3% [3,100] and 0.01% [150] respectively; compared with 1.6% [190,000] and 0.1% [14,000] for pharmaceutical drugs (US poison control centre annual reports 1999-2008, www.aapcc.org). It is challenging to assess the proportion of events that are not reported or those that could have been caused due to concurrent use of different products, including herbal and pharmaceutical preparations. Long-term studies are lacking.

European Legislation Changes in 2010

Tougher European-wide regulations are coming into effect in 2010, due to some raised safety concerns, but also efforts to harmonise laws and facilitate trade across European member states. Key EU laws are the Food Supplements Directive (FSD) and Nutrition and Health Claims Regulation (NHCR), passed originally in 2002 and 2006 respectively. On 1st January 2010 it became illegal to sell forms of vitamins and minerals that are not on the FSD's "Positive List", which is far from an exhaustive list of safe and effective 'forms' of vitamins and minerals. Particularly in the UK, this has contributed to growing uncertainty over future public availability, quantity and quality of certain supplement products that are currently available.

Beliefs, Attitudes, and Behaviours of Supplement Users

Media reports can have significant impact on consumer awareness and understanding of supplement products. 'Heavy' users are generally more confident about their health, viewing supplements as a form of 'health insurance' (Mintel, 2007), but knowledge of what consumers are taking and their potential effects is limited (FSA, 2008). Sufferers of chronic conditions, on regular prescription drugs, are more likely to use concurrent supplementation (Neuhaus, 2003). The majority of supplement users do not tell their medical doctors or health professionals about their supplementation, and GPs don't tend to inquire (Curtis and Gaylord, 2005; Halsted, 2003). Contributing factors to these problems are public perception that these products are inherently safe, and the lack of knowledge about these products in the medical profession (Phua, 2009).

Methods

Data from adult respondents were collected through online self-assessment email snow-balling methods were used to achieve maximum numbers of respondents. A website was created for this purpose, which provided further information on the project, researcher and university affiliations. To help control the inherent bias that this method could present, researcher-assisted street surveys were also conducted. Participants were given 2-page questionnaires with 22 questions concerning their attitudes and beliefs around supplements as well as medication usage over the last 12 months prior to being surveyed. Data was correlated to frequency of supplement use and compared across various demographic and lifestyle factors.

Results

Key Research Questions

1. What are people's current beliefs and attitudes about supplements and their usage?
2. What are people's perceptions about the general safety and benefits of supplements?
3. How do people gain knowledge about supplements?
4. How many and what kind of users mix different products concurrently, including herbal and pharmaceutical preparations?
5. Do regular supplement users inform their doctors (GPs) of their supplementation regime, particularly those on regular prescription drugs - and could this pose a safety concern?

- Of 246 participants 60% responded online, 40% during street surveys, of which 83% were from the UK and 17% from other countries.
- 80% took some form of supplement within the past 12 months, 33% reported regular (daily) supplement use.

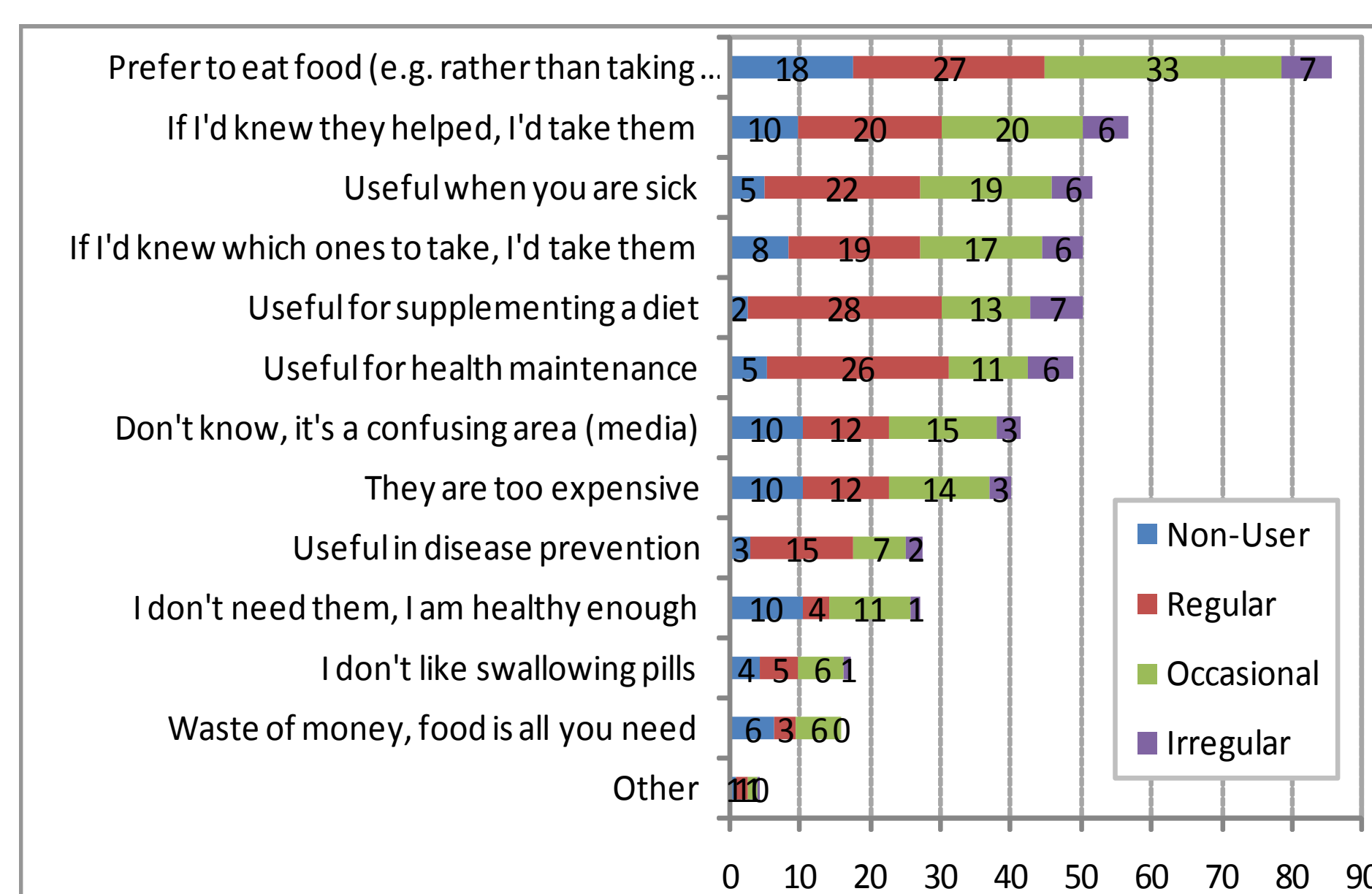


Figure 1. UK Respondents Beliefs About Supplements by Frequency of Supplement Use* (n=203, percent)

* Data represents percent of UK participants that agreed with the respective statements. Percentages may not equal 100% because of multiple answers and rounding.

- Online participants believed supplements to be useful during sickness, for supplementing a diet and in health maintenance. Street participants indicated lack of knowledge and confusion surrounding supplements and their usage.
- Generally, supplements were taken for specific health goals or conditions (70%, e.g. boosting immunity), for general health maintenance (54%), or for when sick or run down (43%). More street than online respondents indicated medical conditions (14% vs. 5%).
- 48% of UK participants believed that supplements can be both safe and unsafe (e.g. side effects); 38% believed they are inherently safe.
- 52% of users were uncertain about benefits and efficacy.
- 42% find current media messages confusing, and 86% formed their knowledge about supplement through media and friends.

- Fruit and vegetable consumption, physical activity, household income and medication use was positively correlated to supplement use.
- 82% of UK supplement users choose not tell their doctors about supplementation, 45% of them are regular (daily) users. Women above 30 were more likely to take multiple supplements.
- 30% of UK participants reported taking regular pharmaceutical medication; they were also more likely to use regular and multiple supplement products (41%), particularly those over 45, while not informing their GPs about it.

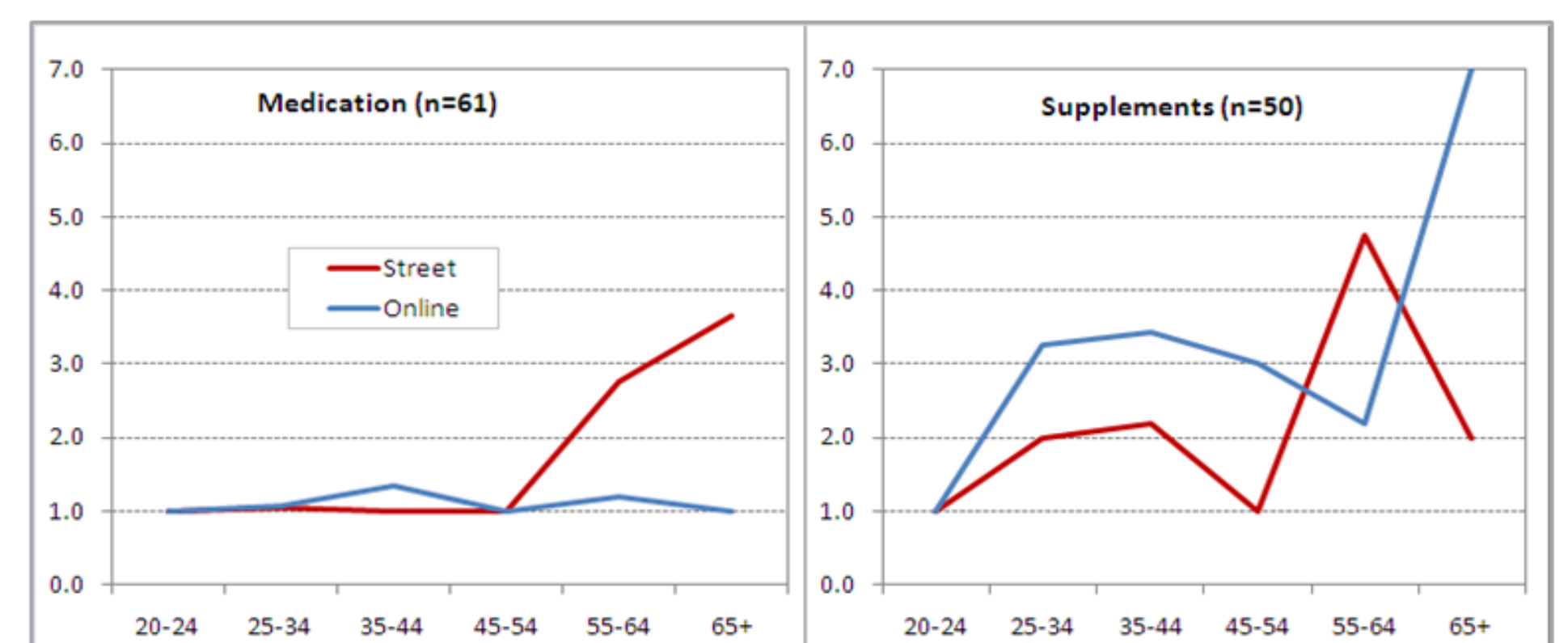


Figure 2. Average Number of Medication and Supplement Products of UK Respondents Who Are on Regular (Daily) Medication, by Type of Survey Participation, by Age* (n=61)

* Data are expressed as weighted average number of supplement products used by respondents of this survey distributed across age and income profile. 30% of total UK participants reported to be on regular (daily) medication; women n=45, men n=16. Street participants n=27, online participants n=34. For supplements, women n=36, men n=14.

Have you informed your GP of your supplementation regime?

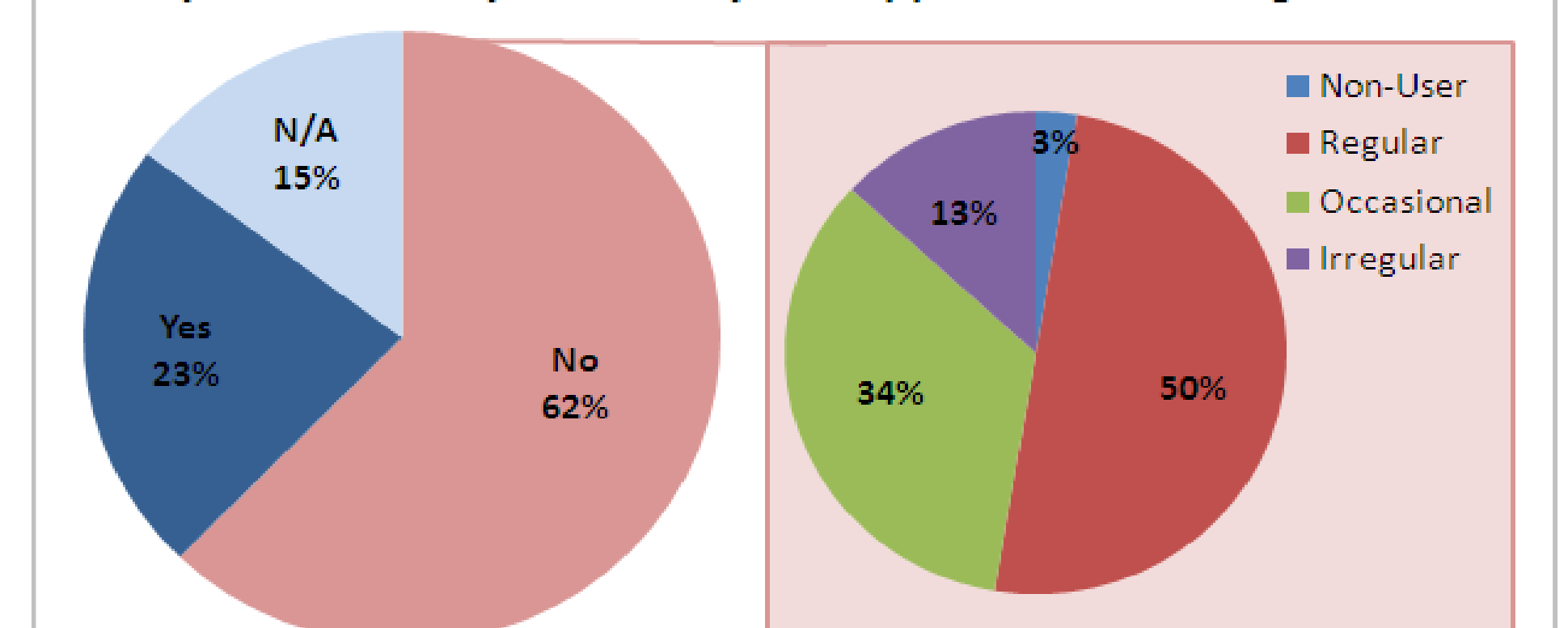


Figure 3. UK Participants' on Regular (Daily) Medication* (n=61)

* Data are expressed as percentages and may not equal 100% due to rounding.

Discussion

Awareness and beliefs about supplements vary substantially among adults reflecting continued mixed messages in public and academic domains. Despite this, supplement markets continue to grow. Supplement usage showed positive correlations to multiple concurrent supplement use, fruit and vegetable consumption, activity levels, and prevalence of regular medication use. Though problems potentially exist with the methods used, overall findings emphasise the continued need for improved awareness and education around supplements and their usage for the public as well as medical and other healthcare professionals.

More research is needed to provide thorough efficacy analysis of specific types and forms (synthetic vs. 'natural') of supplements used. Exact form, dosage and potency information, also in combination with prescription drugs, could provide better insight into potential adverse or beneficial effects of supplement use over longer periods of time. Future studies should use an integrated (interdisciplinary) approach to link dietary and lifestyle attitudes with subsequent behaviour patterns, including supplement usage, to investigate possible avenues for intervention to encourage more healthful rather than compensatory behaviours.

Considering the continuous deterioration of modern food supplies, low-potency wholefood supplements, rather than high-dose synthetic supplements, could play an important role in long-term health maintenance strategies as part of a healthy diet and lifestyle. GPs and other health professionals should inquire about patients' supplement usage. An integrated healthcare approach, including therapeutic coaching and nutrition counselling could be key in creating sustainable behaviour changes.

Key References

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