EFFECTS OF INCREASING DIETARY FIBRE ON PSYCHOLOGICAL WELLBEING

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Introduction

Dietary Fibre and Health
- Dietary fibre consumption has recognised beneficial effects on gastrointestinal function and health
- Dietary fibre is essential for healthy bowel activity1 and can aid control of energy intake2
- Insoluble fibre such as wheat bran fibre contributes to faecal bulking and faster colonic transit, reducing constipation induced bloating3 and associated bowel problems
- Dietary fibre also benefits cardiovascular health4 and reduces colon cancer risk5

Barriers to Increasing Dietary Fibre Intake
- Many UK adults do not achieve the recommended 18g/day intake of dietary fibre (Englyst value)6. Average intake for women is 12.6g/day6.
- Some short-term effects of increasing dietary fibre on gastrointestinal function (e.g. flatulence and bloating) could act as a barrier to compliance but these can be mitigated by increasing hydration

Psychological impact of increasing dietary fibre intake
- Little research considers psychological effects
- Bloating has been shown to impact negatively on wellbeing7
- The physiological benefits from fibre consumption and merely perceiving fibrous foods to be healthy8 could lead to psychological benefits and increase subjective feelings of well-being

Objectives
To investigate the effects of a high wheat bran fibre dietary intervention using breakfast cereal and cereal based snacks on physiological and psychological wellbeing.

Methods/Design
Participants: 22 healthy females
- Mean (±SD) Age = 19.4 (±1.3) yrs, BMI = 22.1 (±2.7) kg/m2
- Low fibre consumers (<20g per day) assessed by the DINE (score <30)8
- No medication (except contraceptives)
- Snackers willing to consume study foods
- No food allergies/intolerances or eating disorders

Study Design: Single blind, pre (1 week baseline)/post (2 week intervention) repeated measures.

Study Foods: A selection of 10 high wheat bran fibre snacks (from a choice of 5 types) and 3 high wheat bran fibre breakfast cereals (from a choice of 8 types) in blind packaging. The dietary intervention involved replacing 2 usual snacks and/or breakfast cereals with 2 high wheat bran fibre containing study foods per day.

Questionnaires:
- Recruitment questionnaire to assess inclusion/exclusion criteria
- DINE Questionnaire8 to assess average daily fibre consumption
- Online Daily Wellbeing Questionnaire to assess daily bowel activity (Bristol Stool Form Scale), mood, body image, alertness and hunger ratings
- Debriefing Questionnaire to assess study experience

Results
- By week 3, almost all participants were consuming 8-14g/d wheat bran fibre from the study foods provided
- Mean (±SD) DINE fibre intake scores increased significantly (p<0.01) from pre (23.0 ± 4.7) to post intervention (31.1 ± 8.12)
- Quantity of fibre consumed was positively correlated with feeling slim and content with body shape during week 3 (both p<0.01)

Conclusion:
Encouraging consumption of snacks and cereals high in wheat bran fibre offers an acceptable strategy to increase fibre intake in women along with modest improvements in psychological wellbeing in a relatively short period (2 weeks)

References

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