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# **Dietary Fibre Intake: Validity of a Short-Term Food Frequency Questionnaire; Association with Gastrointestinal Health and Public Perceptions**

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## Abstract

**Introduction:** Dietary fibre is an important constituent of the diet as it plays a key role in reducing the risk of certain diseases. There are several validated dietary assessment tools that measure current fibre intakes; however these are lengthy, cannot be self-administered or classify dietary fibre intakes. The beneficial effects of fibre consumption have led to dietary recommendations that encourage adequate intake, yet there are a limited number of studies that have investigated the effect fibre has on gut symptoms or examined the perceived benefits *versus* barriers to eating fibre containing foods.

**Objectives:** This study aimed to validate a tool that measures short term dietary fibre intake against a 4-day food record, and compare dietary fibre intake to gastrointestinal symptoms. The study also aimed to survey perceived benefits and barriers to dietary fibre intake.

**Methods:** One hundred and five healthy male and female participants aged 19-65 years completed the study. All eligible participants completed a 4-day diet record, a food frequency questionnaire based 9-item dietary fibre intake tool (DFiT), a daily gastrointestinal symptom diary and a 15-item dietary fibre perceptions survey. Agreement between the 4-day diet record and DFiT was analysed using a paired t-test, correlation coefficient, cross-classification, weighted k statistic and Bland Altman analysis.

**Results:** The DFiT was accurate in classifying but not estimating total dietary fibre intakes. When different levels of dietary fibre intakes were compared to markers of gastrointestinal health, there were no associations found for occurrence or severity for gastrointestinal symptoms. However, high fibre consumers pass one additional bowel motion per day and had softer stool than low fibre consumers. The survey of perceptions showed that the majority of participants agreed with the health benefits, however just over half of participants identified with barriers. There were some differences in responses between genders, levels of dietary fibre intake and socioeconomic status.

**Conclusion:** The DFiT is a valid, simple, short and easy to use questionnaire for classifying but not estimating total short term dietary fibre intakes. In the context of sustainability and shift towards a higher consumption of dietary fibre, it is important to further investigate the effect of dietary fibre on gastrointestinal symptoms and perceptions of barriers.

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# Table of Contents

Abstract.....	ii
Acknowledgements.....	iii
List of Tables .....	vii
List of Figures .....	viii
Abbreviations list .....	ix
Chapter 1: Introduction .....	1
1.1 Aims.....	3
1.2 Objectives.....	3
1.3 Hypothesis.....	3
1.4 Thesis structure.....	4
1.5 Contribution of researchers .....	5
Chapter 2: Literature review .....	6
2.1 Introduction .....	6
2.2 Definition .....	6
2.3 Diet-disease relationship .....	7
2.3.1 Cardiovascular disease.....	7
2.3.2 Diabetes Mellitus .....	9
2.3.3 Cancer .....	11
2.4 Gastrointestinal function markers .....	13
2.4.1 Excessive flatulence, abdominal discomfort and bowel movements.....	14
2.5 Perceptions of Dietary Fibre .....	16
2.6 Dietary assessment methods.....	18
2.6.2 Food record.....	18
2.6.3 Food frequency questionnaire.....	19
2.6.4 24-hour recall.....	20
2.6.5 Dietary analysis .....	20
2.7 Validation Epistemology .....	21
2.7.1 Selection of a population .....	21
2.7.2 Reference method .....	21
2.7.3 Time frame .....	22
2.7.4 Sequence of administration.....	22
2.7.5 Sample size.....	22
2.7.6 Statistical Analysis .....	23

2.7.7 Comparison of group means.....	23
2.7.8 Classification into categories of intake .....	23
2.7.9 Correlation analysis.....	24
2.7.10 Bland-Altman analysis.....	25
2.8 Review of fibre assessment tools.....	26
2.8.1 Background information of validation studies.....	26
2.8.2 Functional features .....	26
2.8.4 Reference methods used .....	27
2.8.5 Study design.....	27
2.8.6 Reported outcomes .....	28
2.8.7 Statistical methods.....	28
2.8.7 Results reported.....	29
2.9 Dietary fibre intake food frequency questionnaire (DFI-FFQ) .....	29
2.10 Conclusion.....	30
References .....	38
Chapter 3: Research Manuscript: Dietary Fibre Intake: Validity of a Short-Term Food Frequency Questionnaire; Association with Gastrointestinal Health and Public Perceptions.....	46
3.1 Abstract.....	46
3.2 Introduction .....	47
3.3 Materials and Methods.....	49
3.3.1 Subjects .....	49
3.3.2 Short-term Food Frequency Questionnaire Development .....	49
3.3.3 4-day food diary and gastrointestinal health questionnaire .....	50
3.3.4 Perceptions of dietary fibre survey.....	51
3.3.5 Data collection .....	51
3.3.6 Data Analysis.....	52
3.4 Results.....	54
3.4.1 Validity Analysis .....	54
3.4.2 Gastrointestinal symptoms .....	57
3.4.3 Perceptions of dietary fibre .....	58
3.5 Discussion.....	63
3.6 Conclusion.....	67
3.7 Acknowledgements.....	68
3.8 Author contributions.....	68

3.9 Conflicts of Interest.....	68
Chapter 4: Conclusions and Recommendations .....	69
4.1 Overview of study findings .....	69
4.2 Significance of findings .....	69
4.3 Strengths and Limitations .....	70
4.4 Recommendations for future research.....	71
Appendices.....	72
References .....	109

## List of Tables

### Chapter 2

Table 1	Validation studies of short term or current fibre intake assessment tools	25-31
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### Chapter 3

Table 1	Characteristics of the participants who completed the 4-day diet record and DFIT	48
Table 2	Nutritional intake and dietary fibre intake classification of participants by the two methods	49
Table 3	Cross tabulation of classification by the 4-day Diet Record and DFIT methods	50
Table 4	Characteristics of the participants who completed Gastrointestinal symptoms questionnaire	51
Table 5	Demographic characteristics of the survey respondents as compared with the 2013 census	52
Table 6	Percentages of total participants who agree and disagree with benefits and barriers statements	54-56

## List of Figures

### Chapter 2

Figure 1	Varying amounts of the indigestible fibre fractions (raffinose, stachyose and verbascose) found in legumes	10
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### Chapter 3

Figure 1	Bland-Altman plot showing the mean versus the difference of each pair of measurements	
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### Appendices

Appendix A	Screening questionnaire	71-74
Appendix B	Dietary fibre intake food frequency questionnaire (DFI-FFQ)	75-78
Appendix C	DFI-FFQ scoring sheet	79-80
Appendix D	Dietary fibre intake tool (DFiT)	81
Appendix E	DFiT scoring sheet	82-83
Appendix F	4-day food diary	84-104
Appendix G	Gastrointestinal health questionnaire	105
Appendix H	Bristol Stool Chart	106
Appendix I	Perceptions of dietary fibre survey	107

## Abbreviations list

<b>CHD</b>	Coronary heart disease
<b>CRC</b>	Colorectal cancer
<b>CVD</b>	Cardiovascular disease
<b>DFI-FFQ</b>	Dietary fibre intake food frequency questionnaire
<b>DFiT</b>	Dietary fibre intake tool
<b>FFQ</b>	Food frequency questionnaire
<b>GSRS</b>	Gastrointestinal symptom rating scale
<b>HbA1c</b>	Glycosylated haemoglobin
<b>LoA</b>	Limits of agreement