

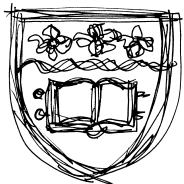
Relationships between patient variables and computerised dietary assessment in a primary healthCare setting

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Computers in dietetics

- Use of computer technology in dietetic practice often restricted
 - analysis of nutrients
- DietAdvice website
 - patients self-report usual dietary intake
 - Dietitian's interface for analysis

The CAST Model

Diet Advice

1. Recruiting patients with Metabolic Syndrome
2. Discussing dietary prescription with patients

General Practitioner

Patient

1. Entering their information into the website
2. Re-visiting their GP for dietary prescription

Dietitian

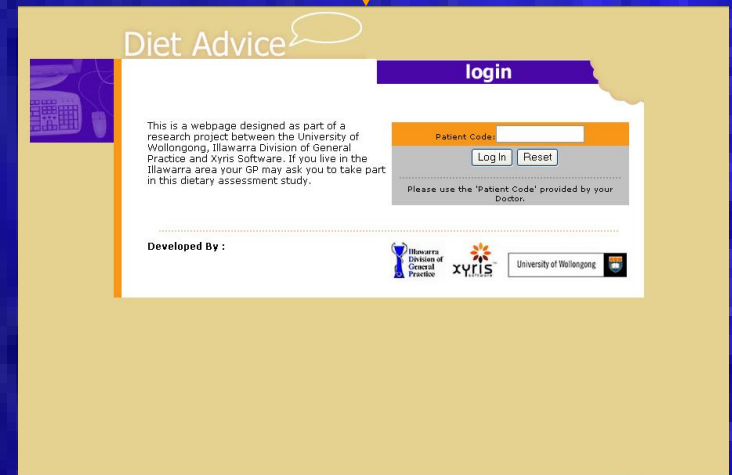
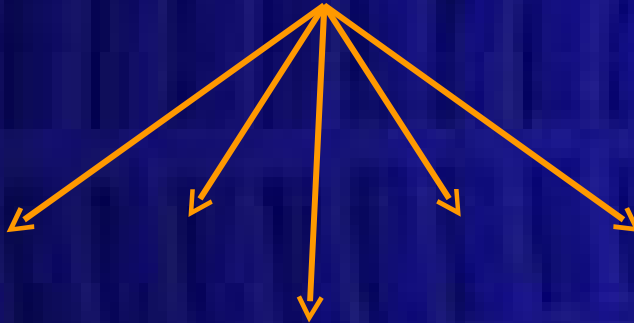
1. Analysing website input
2. Telephoning patients if incomplete questionnaire
3. Developing dietary prescriptions

Aim

- To determine relationships between

Patient variables

DietAdvice website



Methods

- Chi square and ordinal regression models for
 - Age
 - <35years, 35-55years, >56years
 - BMI
 - overweight (<25kg/m²), overweight (25-30kg/m²), obese (>30kg/m²)
 - Computer experience
 - Computer ownership
 - Computer usage

$$\log\left(\frac{\sum_{k=1}^j \pi_k}{1 - \sum_{k=1}^j \pi_k}\right) = \alpha + \beta x$$

Methods

- Nutrient data obtained from dietitian's interface

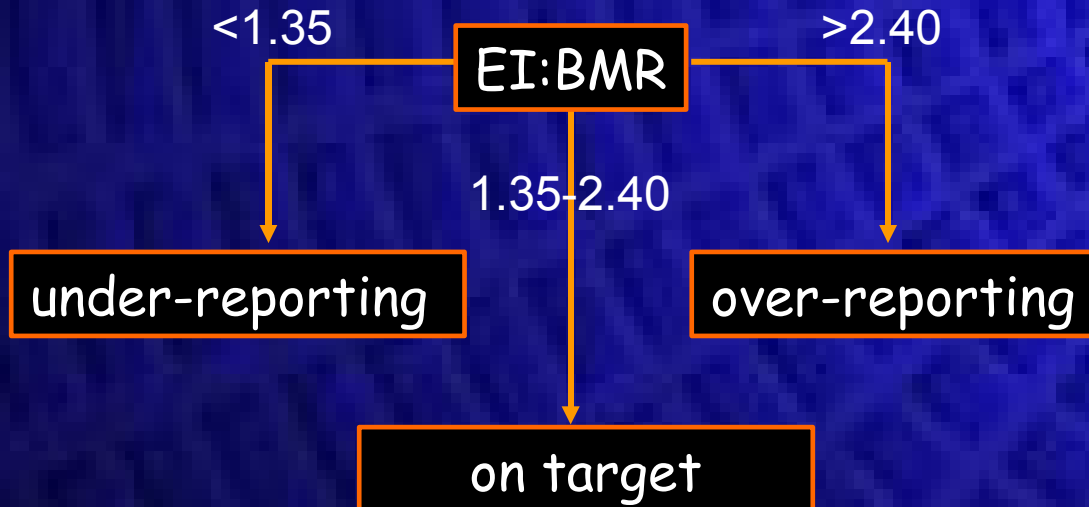
The screenshot displays a software interface for patient diet management. The main window is titled "115BK5WK_070605 - Patients" and shows a list of meals for a 7-day period. The meals are categorized into Breakfast, Lunch, and Dinner. Each meal entry includes the meal name, a list of food items, their quantities, and frequencies. For example, the Breakfast meal includes "BREAD & TOAST", "Other bread", "Cholesterol lowering margarine", and "Vegetite".

Day	Meal	Food	Quantity	Freq	Note
	Breakfast	BREAD & TOAST			BREAD & TOAST
		Other bread [3.0 9in slice 7w]	105.00g	7w	
		MARGARINE			MARGARINE
		Cholesterol lowering margarine e.g. Logicol, Pro-activ [1 tablespoon 7w]	20.00g	7w	
		SALAD OR SPREAD E.G. VEGETITE			SALAD OR SPREAD E.G. VEGETITE
		Vegetite [1 2 teaspoons 7w]	10.00g	7w	
	Lunch	BREAD & TOAST			BREAD & TOAST
		Other bread [2.0 9in slice 5w]	70.00g	5w	
		MARGARINE			MARGARINE
		Cholesterol lowering margarine e.g. Logicol, Pro-activ [1 tablespoon 7w]	20.00g	7w	
		Processed cheese e.g. pre-packaged	20.00g	2w	Processed cheese e.g. pre-packaged cheese slices [1.0 Thin slice (20g) 2w]
		Other meat filling	86.00g	3w	MEAT FILLING
		Other meat filling [2.0 1 slice 3w]			Other meat filling [2.0 1 slice 3w]
		Tomato	102.00g	2w	SALAD FILLING
		Dry soup mix containing meat or chick	150.00g	1w	SOUP FROM DRY SOUP MIX
		Hot chips, hashbrowns, wedges [85 110.00g 0w]			Dry soup mix containing meat or chicken [1 Medium bowl (1/2 Cup) 1w] HOT CHIPS, HASH-BROWNS, WEDGES [1 1/2 plate < 1w]
	Dinner	EGGS & EGG DISHES			EGGS & EGG DISHES
		Other egg dish [3/4 cup (2 eggs) 2w]	123.00g	2w	Other egg dish [3/4 cup (2 eggs) 2w]
		PASTA OR NOODLES			PASTA OR NOODLES
		Plain pasta or noodles [1 1/2 cup 2w]	60.00g	2w	Plain pasta or noodles [1 1/2 cup 2w]
		Pasta & sauce made from dry packet	63.00g	1w	Pasta & sauce made from dry packet e.g. Continental packet pasta [1 1/2 cup 1w]
		FRESH, BOILED OR STEAMED VEGETABLES			FRESH, BOILED OR STEAMED VEGETABLES
		Potatoes [1 1 cup (1 1/2 potatoes) 4w]	238.00g	4w	Potatoes [1 1 cup (1 1/2 potatoes) 4w]
		Peas or Corn [1 1/2 cup 3w]	91.00g	3w	Peas or Corn [1 1/2 cup 3w]
		Carrots [1 1/2 cup (2 carrots) 2w]	101.00g	2w	Carrots [1 1/2 cup (2 carrots) 2w]
		POTATOES DISHES E.G. BAKED POTATO, MASHED POTATO			POTATOES DISHES E.G. BAKED POTATO, MASHED POTATO
		Mashed potato [1 1 cup 3w]	221.00g	3w	Mashed potato [1 1 cup 3w]
		Other potato dish [1 1/2 cup (1 potato) 3w]	141.00g	3w	Other potato dish [1 1/2 cup (1 potato) 3w]
		MARGARINE			MARGARINE
		Cholesterol lowering margarine e.g. Logicol, Pro-activ [1 tablespoon 3w]	20.00g	3w	Cholesterol lowering margarine e.g. Logicol, Pro-activ [1 tablespoon 3w]
		MILK			MILK
		Reduced fat milk, <2% fat e.g. Farm 20.00g 1w	20.00g	1w	Reduced fat milk, <2% fat e.g. Farmers Best, Lite White [1 Tablespoon 1w]
		CHICKEN OR TURKEY E.G. SKIN-LESS CHICKEN			CHICKEN OR TURKEY E.G. SKIN-LESS CHICKEN
		Chicken or turkey with skin [1 Breast (325g) 1w]	326.00g	1w	Chicken or turkey with skin [1 Breast (325g) 1w]
		Chicken or turkey patties [5w]			Chicken or turkey patties [5w]
		SALSAUSE			SALSAUSE
		Beef sausage [3.0 1 sausage 1w]	387.00g	1w	Beef sausage [3.0 1 sausage 1w]
		SALUCES & GRAVIES			SALUCES & GRAVIES
		Tomato sauce [1 Tablespoon 1w]	10.00g	1w	Tomato sauce [1 Tablespoon 1w]
		HOT CHIPS, HASH-BROWNS, WEDGES			HOT CHIPS, HASH-BROWNS, WEDGES

The interface also includes a "Folders" pane on the left with a search bar and a list of folders. On the right, there is a "Macro-Nutrients" section showing values for Weight, Energy, Protein, Fat, Sat-Fat, Poly-Fat, Mono-Fat, and Carbohydrat. Below that is a "Energy Ratios" section showing percentages for Protein, Fat, Carb, and Other. At the bottom right, there is a note: "Click on a nutrient to view more information."

Methods

- Comparison
 - reported energy intake (EI)
 - basal metabolic rate (BMR)
- Patients classified as



Results

November 2005

Total GP recruitment
N=224

Did not consent
N=10

October 2005



Cross section of patients
N=200

Did not start using website/account error
N=12

Demographic information
N=188

Nutrient intake data
N=143

Diet Advice

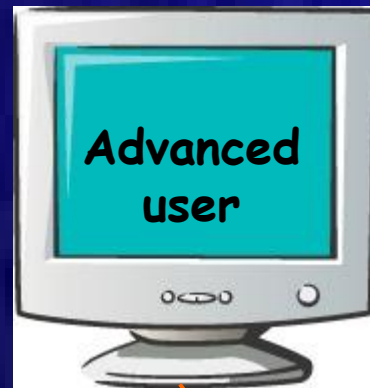


Patient profile (n=188)

Age	49.1 ±14.6 yrs
BMI	32.6 ± 6.5 kg/m ²
- Overweight	72.9%
Male	63 (33.5%)
Female	125 (66.5%)
High school education	95 (50.5%)
Own a computer	151 (80.3%)

Computer experience/usage

- Computer experience
 - advanced (n=20)
 - intermediate (n=73)
 - beginners (n=40)
 - ‘never used’ a computer (n=10)



17x

1x

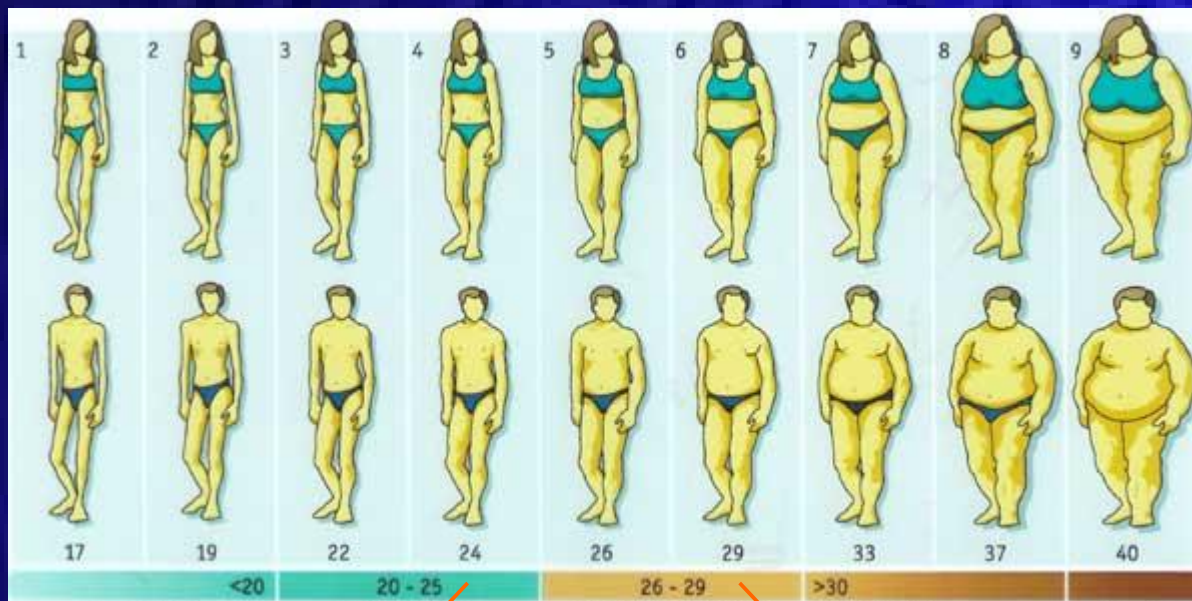
Own a computer

(p=0.00)

Diet Advice

BMI

Diet Advice



1.0x

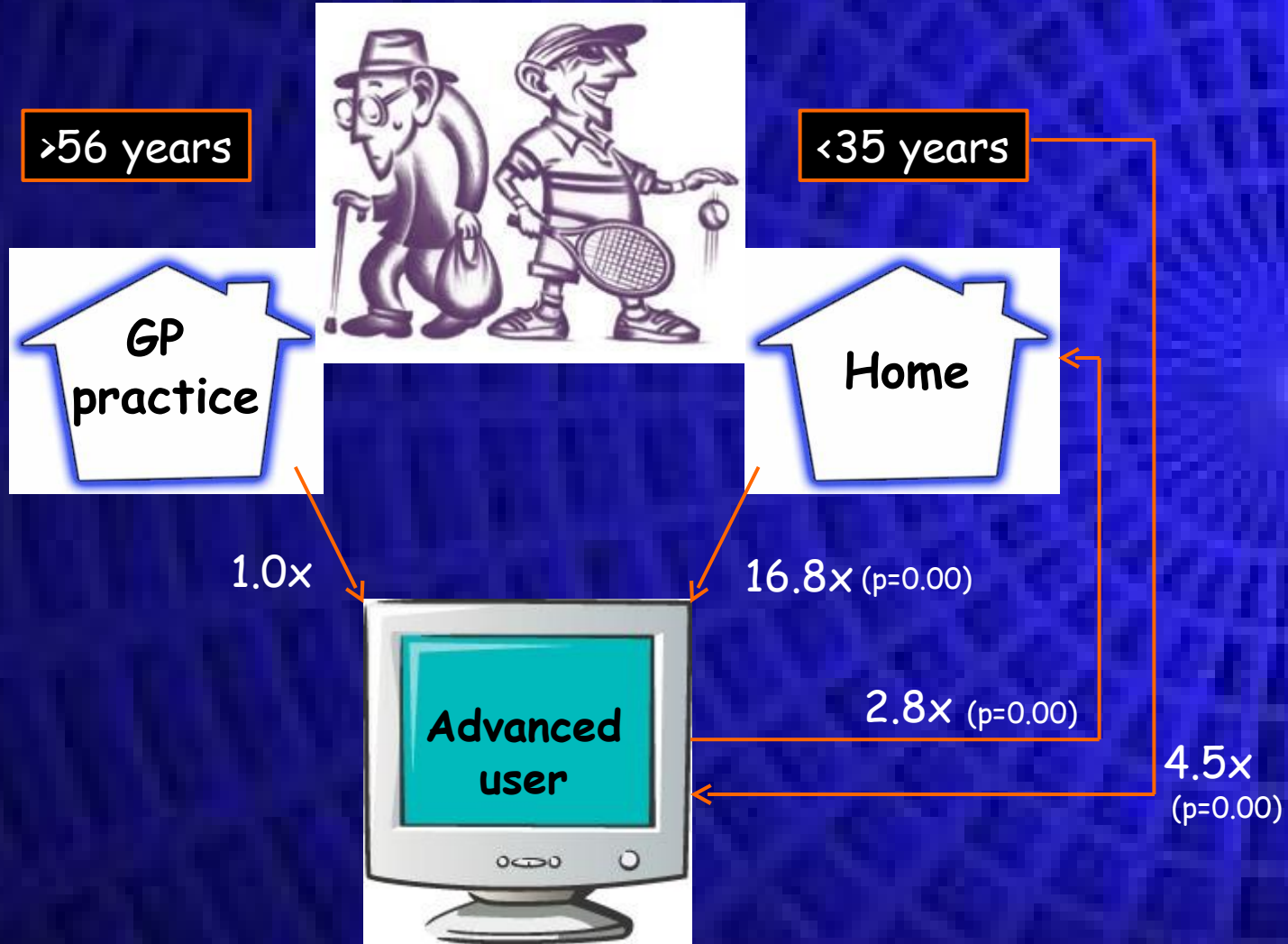
1.9x



(p=0.04)

Age

Diet Advice



Results

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N=224

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Cross section of patients
N=200

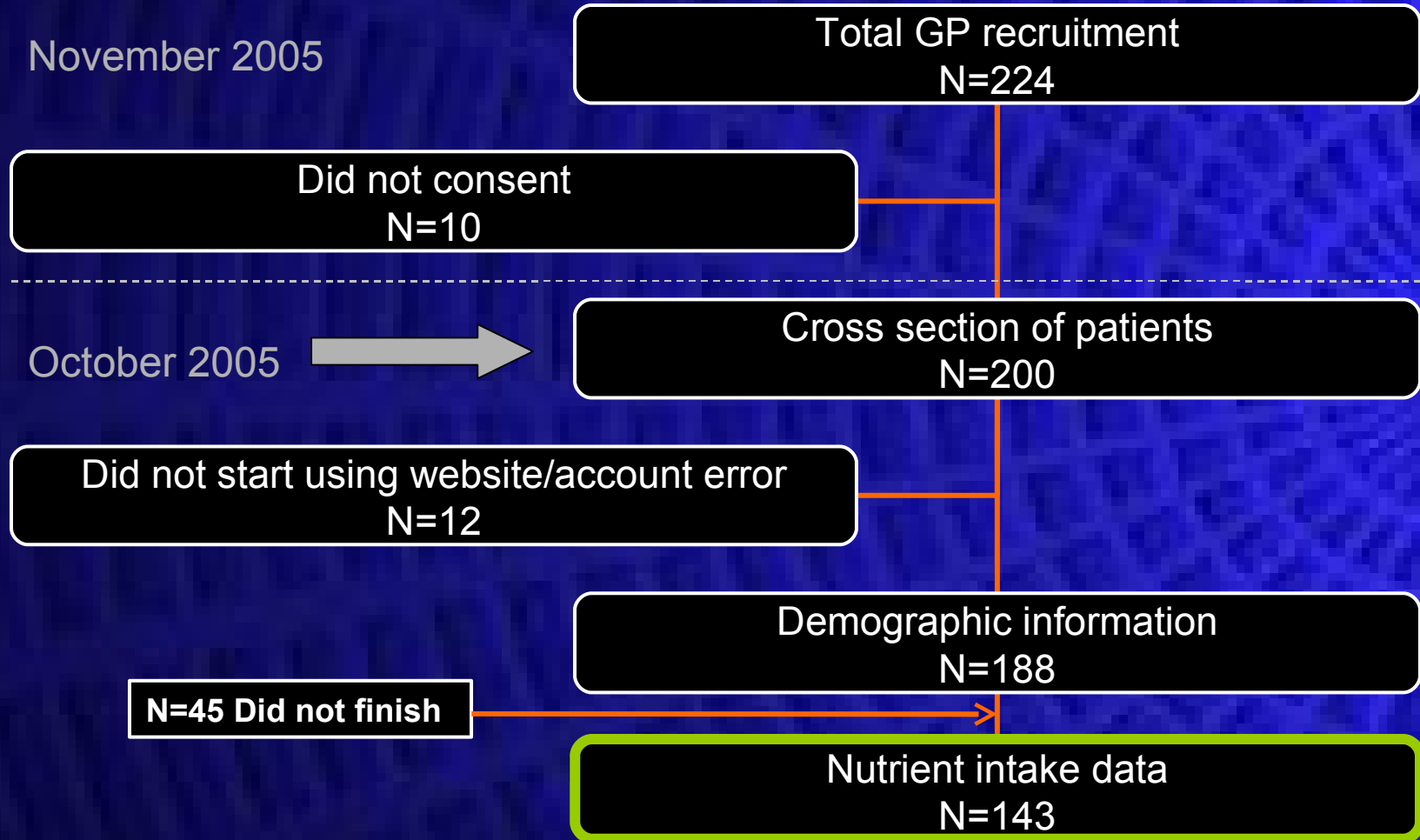
Did not start using website/account error
N=12

Demographic information
N=188

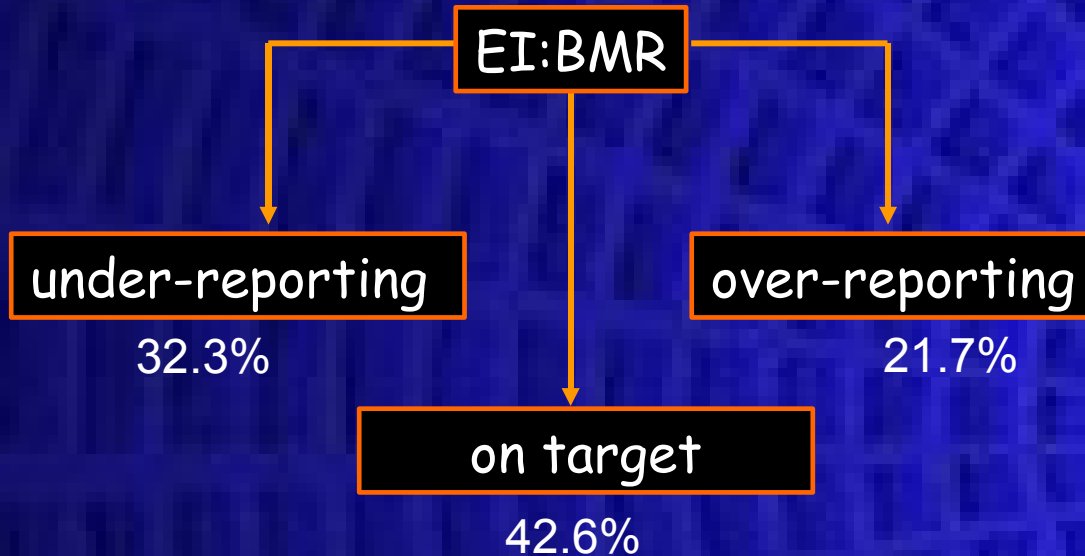
N=45 Did not finish

Nutrient intake data
N=143

Diet Advice



Reporting status



- Nutrient intake data more likely to be over-reported or on target than under-reported

Relationship to age

Age category	Under-reporting	On target	Over-reporting
<35 years	9 (33%)	14 (52%)	4 (15%)
36-55 years	17 (27%)	28 (45%)	17 (27%)
>56 years	20 (37%)	24 (44%)	10 (19%)
Total	46 (32%)	66 (46%)	31 (22%)

- No relationship to age

$p=0.58$ ($\chi^2=2.86$)

Relationship to BMI

BMI category	Under-reporting	On target	Over-reporting
Normal BMI	3 (50%)	2 (33%)	1 (17%)
Overweight BMI	13 (27%)	29 (59%)	7 (14%)
Obese BMI	30 (34%)	35 (40%)	23 (26%)
Total	46 (32%)	66 (46%)	31 (22%)

- No relationship to BMI

p=0.19 ($\chi^2=6.08$)

Relationship to gender

Gender	Under-reporting	On target	Over-reporting
Male	17 (35%)	23 (47%)	9 (18%)
Female	29 (31%)	43 (46%)	22 (23%)
Total	46 (32%)	66 (46%)	31 (22%)

- No relationship to gender

$p=0.77$ ($\chi^2=0.54$)

Discussion

- Overweight patients may feel greater comfort having diet assessed at home
 - ↓ social desirability bias due to ↓ face-to-face contact required
- Computerised assessment
 - report usual diet with less bias than verbal diet history assessment with a dietitian

Conclusion

- Finding innovative ways for overweight patients to report intakes may include the use of computers

Acknowledgements

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