

Assessing misreporting of energy intake in third trimester of pregnancy

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Misreporting of food intake has been shown to affect the validity of dietary data collected in nutritional surveys and this may affect the interpretation of associations between dietary intakes and health outcome measures⁽¹⁾. The aim of this study is to assess the extent to which misreporting of energy intake occurs in the third trimester pregnancy.

The data were collected as part of the Belfast arm of the Hyperglycaemia and Adverse Pregnancy Outcome (HAPO) study that was designed to investigate associations between blood glucose levels below the current criteria for the diagnosis of gestational diabetes and adverse pregnancy outcomes⁽²⁾. At approximately 28 weeks gestation (24–32 weeks) forty women within the Belfast cohort completed a 7 d food diary. Data from the food diaries were entered into WISP version 3.0 (Tinuviel Software, UK) to calculate estimated nutrient intakes and statistical analysis was performed in SPSS version 17.0 (SPSS Inc, Chicago, USA).

Misreporting of energy intake within the dataset was assessed using the Estimated Energy Requirement (EER): Energy Intake (EI). The appropriate equation published by the Institute of Medicine (IOM, 2002) was used to calculate EER for each participant⁽³⁾ and an EI:EER was calculated for each individual. Intra-individual variation in EI and the median of EI:EER were used to calculate the EI:EER 95% CI cut-offs for misreporting⁽⁴⁾. Using these cut-offs (0.83–1.23) eight (20%) women are classed as under-reporting (UR), twenty-six (65%) women are classed as accurately reporting (AR) and six (15%) women classed as over reporting (OR) energy intake. When investigated with BMI category, levels of misreporting are shown to be higher in overweight and obese individuals when compared with those with a BMI within the normal range.

HAPO BMI categories (kg/m ²)	<i>n</i>	Median EI:EER	UR (%)	AR (%)	OR (%)
Underweight <22.6	3	1.00	0	2 (66.6)	1 (33.3)
Normal weight 22.6–28.4	20	1.04	3 (15.0)	15 (75.0)	2 (10.0)
Overweight 28.5–32.9	10	1.10	1 (10.0)	7 (70.0)	2 (20.0)
Obese >33.0	7	0.80	4 (57.2)	2 (28.5)	1 (14.3)

Descriptive statistics were carried out to calculate mean nutrient intakes for those AR (*n* 26).

	Mean	SD	Range	DRV COMA (1991)
Energy, kJ (kcal)	8882.632 (2123)	1154.784 (276.0)	6656.744–11723.568 (1591–2802)	2140 (8953.76)
Protein (g)	78.8	13.9	51.8–118.3	51
Fat (g)	89.9	17.2	44.4–137.9	—
Carbohydrate (g)	262.4	40.5	205.4–352.9	—
Sugars (g)	116.2	37.6	35.5–195.5	—
Englyst fibre (g)	13.7	3.5	8.5–20.5	18
Ca (mg)	1002	271	523–1710	700
Fe (mg)	11.0	3.08	5.7–17.1	14.8

The mean intakes of the twenty-six women accurately reporting EI exceeded the dietary reference values for pregnancy for energy, protein and Ca. However, the mean intakes of Fe and Englyst fibre were below the recommended levels. This preliminary analysis gives an indication of misreporting of energy intake within the HAPO dataset. Further investigation of the nutrient intakes of the larger HAPO Belfast cohort (*n* 1639) and associations between nutrient intakes and outcomes of pregnancy is required.

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