Development of an at-risk assessment approach to dietary data quality in a food-based clinical trial

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Aims

- Dietary data entry within a lifestyle clinical trial
- Explore dietary data entry discrepancies
- Identify at-risk areas
Dietary Data Flow

Data collections
- Diet history interview
- Usual weekly intake

Quantity
- Foods
- Frequency

Data
- Simple Food
- Complex Food
- Mixed Recipes
- Drop-down list
- Create new
- Enter number
- Portion size
- Drop-down list
- Enter number
- Drop-down list
- An average intake/day

On Paper-Based Records (Source Data)

Enter to the FoodWorks Software (Food Output Data)
Discrepancy

• **Source Data Verification procedure**
  — Pilot study (n=4) → Discrepancy classification
  — Sample (n=38) → 100% manual verification
  — Re-enter identified discrepancies

• **Food-based classification for meals**
  — Main meals and snacks
  — Meal–based food consumption combinations

• **Statistical analysis**
Discrepancies

• **8940 Source** vs. 8775 Food output data points (P=0.463)

• 436 discrepancies → Rate: 4.88%
Re-entered discrepancies

- 8% (3/38) records > 1000KJ (Daily intake energy)

- No significant difference (Original vs. Re-entered data)
  - Daily intake energy
  - Protein
  - Fat
  - Carbohydrate
  - Fibre
Dinner

• 48% (209/436) discrepancies
  – Highest discrepancy frequency
  – All discrepancy types

• Meal-based food consumption combinations = 6
  (Breakfast: 3 vs. Lunch: 4)

• 16% (6/38) records → Overestimated Consumption frequency
4.88% → Acceptable for analysis?

• Complexity of dietary data

• Acceptable discrepancy rate
At Risk Area = Dinner

• Increased consumption variety

• Homemade dishes

→ Complexity of the dinner meal data
Limitation

• Dietary assessment method
  – Professional judgement

  – Investigator subjectivity
Conclusion

• Source Data Verification
  → Dinner meal data
  → Quantity and frequency

• Method application
  → A systematic approach
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