

MONITORING BEHAVIOUR, ANTHROPOMETRIC CHANGES AND DIET TO EXPLAIN LOW WEIGHT GAIN IN CLIENTS WITH A SEVERE LEARNING DISABILITY

Simon B. N. Thompson and Jacci Muir

Introduction

Following the philosophy of normalisation (Wolfensberger, 1972), there has been much written on policies of care for people with a learning disability (DHSS, 1981). These have included numerous papers on problems with managing clients' behaviour, especially in "long-stay" institutions and specific problem behaviours such as chronic vomiting (Hinds and Oliver, 1985), food regurgitation (Hewitt and Burden, 1984) and ruminative behaviour (Greene *et al.*, 1991).

However, there has been far less written on the prevalence of eating disorders in people with a learning disability. With our western culture beginning another wave of fashionable diets, weight-watching (Thompson, 1993) and healthy living (Thompson and Morgan, 1990; Thompson, 1992), and with an increasing interest in resettlement in the

community, it is perhaps important that we address such issues as diet, body weight and menu choice in this population.

A number of referrals were received by the Department of Nutrition and Dietetics requiring dietary intervention for clients with a range of abilities on the Special Needs wards at Lynebank Hospital, Dunfermline, Scotland. The Senior Dietitian had been involved with advising nursing staff and in compiling diet plans for these clients. Apart from overcoming some of the practical difficulties of standard hospital procedures (such as diet supplements being issued on the ward by nursing staff rather than by a designated Diet Kitchen), these clients had gained very little weight, despite dietary intervention.

A collaborative study was set up with the Department of Nutrition and Dietetics and the Department of Clinical Psychology to investigate diet- and

Dr. Simon B. N. Thompson, B.A.(Honours), M.Phil., Ph.D., P.G.D.I.S.
Chartered Clinical Psychologist
Department of Clinical Psychology, Lynebank Hospital, Dunfermline KY11 4UW
Mrs. Jacci Muir, B.Sc(Honours)
Research Assistant
Department of Clinical Psychology, Lynebank Hospital, Dunfermline KY11 4UW

weight-related issues with these clients. An examination was made of staff-client ratios and clients' behaviour before, during and after mealtimes. In addition, clients' anthropometric measurements (such as body weight and skinfold thicknesses) were monitored over a 3-month period and weighed intakes recorded at clients' mealtimes.

Method

Subjects

Two male and seven female clients (aged 26-59 yrs.; average age: 35 yrs., mode: 32 yrs.) from the Special Needs wards at Lynebank Hospital, Dunfermline, Scotland, were selected from consultant psychiatrists' referrals to the hospital dietitian. All of these clients had

been reported by nursing staff as having low body weight and little or no weight gain over a 6-month period as measured by the nursing staff on the ward at regular monthly intervals (Fig. 1).

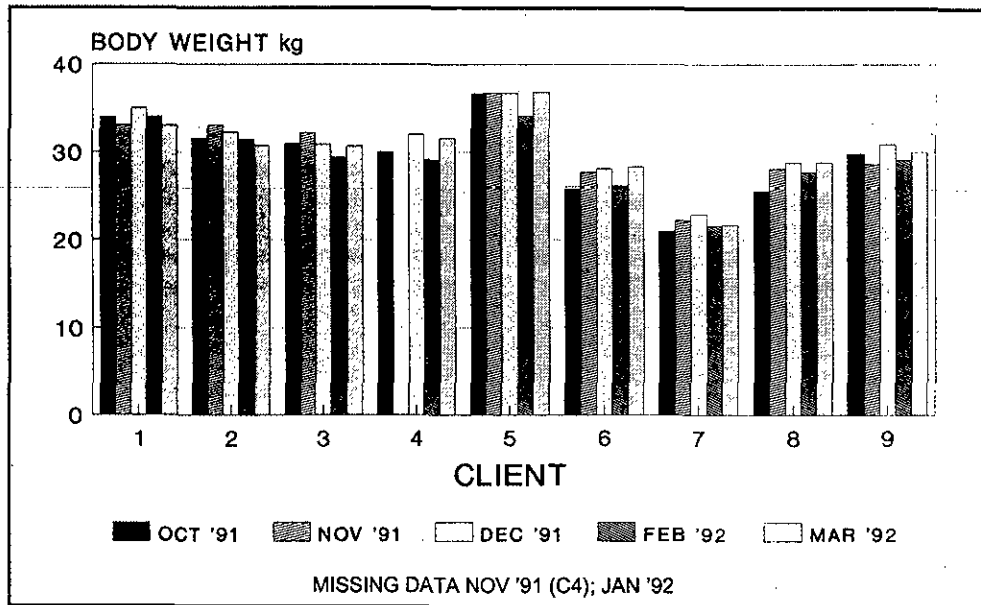
Objectives of the Study

1. To investigate possible causes of low weight gain in these clients;
2. To make recommendations for the facilitation of weight gain in these clients.

Materials

A screening questionnaire was designed so that information relevant to the clients' diet and feeding behaviour could be collected in a systematic way (Appendix I). Reference to medical and

FIGURE 1
Weight change in clients before study



nurses' notes was made during completion of these questionnaires for each client. A checklist was also devised for helping record observations of clients at mealtimes (Appendix IIa, b). An evaluation questionnaire was devised for use by independent raters to assess inter-observer reliability.

Procedure

The screening questionnaire was completed for all clients by a clinical psychologist and duty ward nurse, ensuring that at least one of these people knew the client in question. Additional information concerning medication administered to the client, past medical conditions and diet supplements issued was also collected and recorded. Direct observations of clients were made by two psychologists, sometimes simultaneously (but independently) for the purpose of inter-observer reliability. Each was seated in a discrete part of the ward where the client was being fed. A task analysis of the sequences involved in feeding the client was compiled and used to assess the degree of dependence/independence of each client during mealtimes. (All clients were considered both by the observers and nursing staff to be totally dependent on carers for feeding.)

Four mealtimes were routinely observed for each client: breakfast (08.00 a.m.); lunch (12.00 p.m.); afternoon snack (02.00 p.m.); dinner (05.00 p.m.).

54 different mealtime sessions were observed which included two lunchtimes and two snack-times over an 8-week

period. In addition, clients were weighed on the ward at the end of each month and a record of their anthropometric measurements was taken, i.e. Body Mass Index (Garrow, 1988) and skinfold thicknesses measured at standardized sites using skinfold calipers. These were taken at monthly intervals during the three months of the study. The dietitian also scheduled three days during which clients' food and drink intake was carefully monitored by weighing and recording.

Results

It was found that snack-times were consistently used by the nursing staff for the issue of "puddings" and diet supplements not previously issued at other mealtimes. The order in which clients were fed varied but generally, the same care assistant fed the same clients, except when the staff-client ratio was particularly low on the ward (e.g. 2 staff to 26 clients). However, qualified nursing staff were apparently randomly allocated to feed individual clients.

The reliability of observers' observations was judged by three independent raters who were naive to the study. Findings showed 52.9 per cent agreement in observers' descriptions of clients' behaviour but there was a much higher agreement in assessing clients' food and drink intake (87.5 per cent). This gave an overall agreement of 70.2 per cent between observers.

Results from mealtime observations of clients revealed the following (see

TABLE I for raw data):

i *breakfast* - mean duration was 6.4 mins.; mean time client left on own was 0.0 mins., no food remaining at end of meal (100.0 per cent of clients); no food discarded (100.0 per cent); no

drink remaining (55.6 per cent); no drink discarded (55.6 per cent); visit to toilet, incontinence, regurgitation, ejection or vomiting after meal (0.0 per cent);

ii *lunch* - mean duration was 8.5 mins.;

TABLE I
Observations of Clients at Mealtimes

CLIENT	Mean Duration of meal (mins)	Behaviour (Active/Passive) 5 mins -		Mean Time left on own (mins.)	Attempt to feed on own or whilst being helped	Amount of food (0.25 segments) remaining	Amount of food (0.25 segments) discarded	Amount of drink (0.25 cupfuls) remaining	Amount of drink (0.25 cupfuls) discarded	
		Before	After							
C1	Breakfast	6	Active	Active	0	No	0.00	0.00	0.00	0.00
	Lunch	5	Passive	Passive	0	No	0.00	0.00	0.25	<0.25
	Dinner	12	Active	Passive	0	No	0.00	<0.25	0.25	<0.50
C2	Breakfast	7	Active	Active	0	No	0.00	0.00	0.00	0.00
	Lunch	5	Active	Active	0	No	0.00	0.00	0.00	0.00
	Dinner	7	Active	Active	0	No	0.00	0.00	0.00	<0.25
C3	Breakfast	4	Passive	Active	0	No	0.00	0.00	0.00	0.00
	Lunch	7	Passive	Passive	0	No	>0.75	<0.25	>0.75	<0.25
	Dinner	10	Passive	Passive	0	Yes (helped) food	0.00	<0.25	0.00	0.00
C4	Breakfast		Active	Active	0	No	0.00	0.00	<0.25	<0.25
	Lunch	7	Passive	Passive	2	No	>0.75	<0.25	0.50	<0.25
	Dinner	17	Passive	Active	10	Yes (helped & own) food	>0.75	0.00	0.00	0.00
C5	Breakfast	8	Passive	Active	0	No	0.00	0.00	0.00	0.00
	Lunch	8	Passive	Passive	1	No	0.00	0.00	0.00	0.00
	Dinner	10	Passive	Passive	0	No	0.00	<0.25	0.00	<0.25
C6	Breakfast	5	Active	Active	1	No	0.00	0.00	<0.25	<0.25
	Lunch	7	Passive	Passive	0	No	0.00	0.00	<0.25	<0.25
	Dinner	5	Active	Active	0	Yes (own) drink	0.00	<0.25	0.00	<0.25
C7	Breakfast	6	Active	Active	0	No	0.00	0.00	<0.25	<0.25
	Lunch	12	Active	Active	1	No	>0.75	<0.25	<0.25	0.25
	Dinner	10	Passive	Passive	0	No	0.00	<0.25	0.00	0.00
C8	Breakfast	6	Active	Active	0	No	0.00	0.00	0.00	0.00
	Lunch	12	Passive	Active	2	No	0.00	<0.25	0.00	<0.25
	Dinner	10	Passive	Passive	0	No	0.00	<0.25	0.50	0.00
C9	Breakfast	12	Passive	Passive	0	No	0.00	0.00	<0.25	<0.25
	Lunch	14	Passive	Passive	1	No	<0.25	0.00	<0.25	<0.25
	Dinner	6	Passive	Passive	0	No	0.25	0.00	0.00	0.00

mean time client left on own was 0.8 mins., no food remaining at end of meal (55.6 per cent of clients); no food discarded (55.6 per cent); no drink remaining (33.3 per cent); no drink discarded (22.2 per cent); visit to toilet, etc. after meal (0.0 per cent);

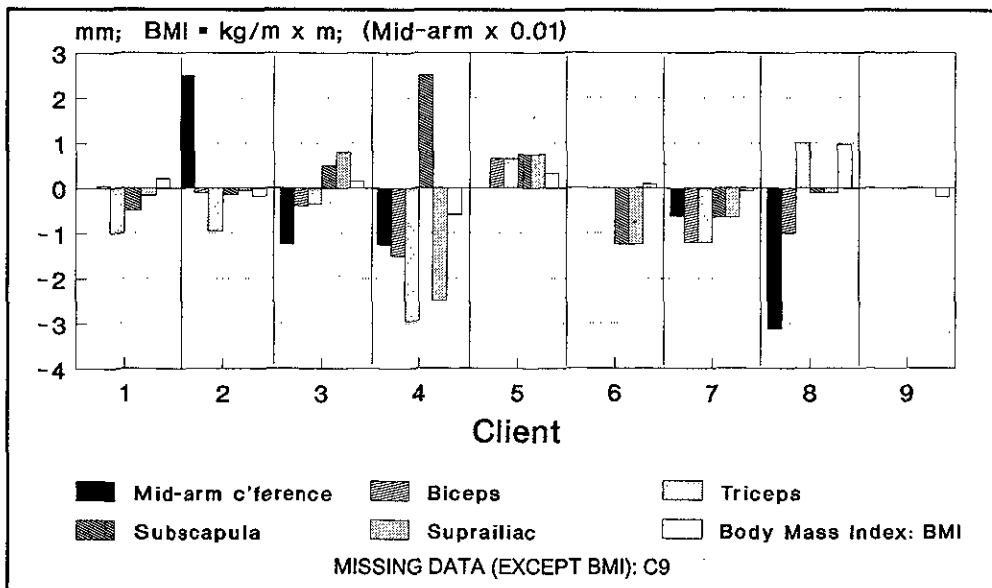
iii *dinner* - mean duration was 9.7 mins.; mean time client left on own was 1.1 mins.; no food remaining at end of meal (77.8 per cent of clients); no food discarded (33.3 per cent); no drink remaining (77.8 per cent); no drink discarded (55.6 per cent); visit to toilet, etc. after meal (0.0 per cent);

iv. *snack* - no food remaining at end of snack (100.0 per cent of clients); no food discarded (94.4 per cent); no drink remaining (94.4 per cent); no drink discarded (100.0 per cent); visit to toilet, etc. after meal (5.6 per cent).

In general terms, clients seldom attempted to "finger feed" themselves if they were left on their own with food, and the "offending" mealtimes when some clients did not consume all of the food were at lunch and dinner. Snacks were considered to be the most successful in terms of intakes of diet supplements and breakfasts were the most successful for foods; all meals had poor records for clients' intake of drinks. Generally, it was thought the clients received very little fluids throughout the day.

Clients' anthropometric measurements during the period of the study (April to June) revealed that all nine of the clients maintained below normal BMI's and that skinfold thicknesses generally decreased (see Fig. 2).

FIGURE 2
Anthropometric Measurements of Clients during Study (April - June)



Discussion

A number of dependent variables were thought to influence clients' food and drink intake. These included: liquidized versus solid food; speed with which the client was fed; whether or not the diet supplement was palatable to the client; the client's dietary preferences; and psychological and medical factors, such as oesophagitis, gastro-oesophageal reflux (Richter, 1992), mood swings, etc. Medication was also considered to affect clients' appetites in some cases.

It was evident from these findings that nursing staff took little time to feed clients; on average, the duration of a main meal was no more than 10 mins. It was considered necessary to re-examine this aspect of nursing procedure and to carefully assess each client's requirements, making special consideration for any evidence of dysphagia or oesophagitis, etc. Designing a programme for each client was also thought to be useful where dietary preferences, as far as possible, could be established.

It seems that such choices have been overlooked historically where the ward scene is often one in which each client receives an identical menu with the only exception being a liquidized or solid presentation of food.

Other aspects of mealtime procedures were thought to be important to monitor. For example, whether or not it was merely a time issue dictating the issue of "puddings" and certain diet supplements in the afternoon, and whether or not puddings could be re-

placed with a biscuit and tea (or other preference) with the puddings being supplied at the lunchtime meal. Likewise, there was some evidence to suggest that an adherence to the accurate measuring of quantities of diet supplement was not being made with often extreme variations in these amounts depending on staff and staff-client ratios. In fact, it may have been the case that diet supplements had become "substitutes" rather than "supplements" in the daily diet of clients. A period of time (e.g. one month) when these would be removed altogether from the diet was considered to see if this affected clients' anthropometric status or food and drink intake. Finally, it was considered useful to continue to measure clients' weights and skinfold thicknesses in order to monitor anthropometric changes. A follow-up study is envisaged once these recommendations have been implemented.

Summary

A collaborative study involving the Departments of Nutrition and Dietetics and Clinical Psychology examined the mealtime procedures for nine clients with a severe learning disability who were totally dependent on nursing staff for feeding. Following dietary intervention, these clients had low weight gain over a 6 month period. Clients' behaviour before, during and after mealtimes was examined as well as staff-client ratios. An examination was also made of changes in clients' anthropometric measurements (body mass index and skinfold thick-

nesses) and food and drink intake. A number of conclusions were reached to explain clients' low weight gain, such as speed of feeding, timing and accuracy of diet supplements, clients' dietary preferences and liquidized versus solid foods. Recommendations, in line with these conclusions, were made for improving nursing practice on these Special Needs

wards and for facilitating weight gain in these clients.

Acknowledgements

The authors would like to thank Dr. W. McCrea, Consultant Psychiatrist, Mrs. L. Smith, Senior Dietitian, nursing staff and clients of Lynebank Hospital who contributed to this study.

APPENDIX I

Investigation into Apparent Small Weight Gain Following Dietary Intervention

Screening Questionnaire

(Information to be collected from nurses' notes, medical notes and nursing staff).

CLIENT'S NAME: _____ NURSING STAFF _____

GRADE _____

1. To what extent is the client dependent on nursing staff for feeding?

2. What medication does the client receive? Does any of this affect appetite or cause the patient to vomit, or have bowel disturbance in any way?

3. What are the times of the client's meals? (Is the client the first person to be fed, etc?)

4. When does the client receive snacks (times)?

5. Details of past personal/medical history relevant to eating/feeding? (History of disorders?)

6. Any observations/comments that the nursing staff have made concerning the client's behaviour before, after or during mealtimes?

7. What is the client's ability to respond/comprehend to requests made by nursing staff?

8. Any language/special disabilities?

9. Does the client have any physical disabilities or disfigurements that make independent feeding difficult?

10. Any previous involvement of the client with speech therapy or physiotherapy? (Specify with dates)

11. Staff-client ratio on ward during mealtimes

12. Client's daytime activities (a.m./p.m.)?

Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Sun.

13. Client's diagnosis (borderline learning disability; mild; moderate; severe; profound; unspecified)?

14. Specific syndrome (Down's; Autism; prenatal; perinatal; postnatal; not known)?

15. Length of hospitalization?

APPENDIX IIa
Investigation into Apparent Small Weight Gain Following Dietary Intervention

Today's Date:		Times of Observations:	
Name of Client:		Name of Meal:	
Name of Observer:		What does it comprise:	
Location of Observation:			Drinks:
Staff-to-Client Ratio at this mealtime			

APPENDIX IIb
Checklist of Behaviours Observed at Mealtime

CHECKLIST	DESCRIPTION/COMMENTS
1. Behaviour during 5 minutes prior to feeding session?	
2. Amount of time client is left on own?	
3. Does client attempt to feed self whilst left on own (or when being helped) Specify?	Whilst being helped: Left alone (is food available)?
4. Quantity (¼ segments/¼ cupfuls) of food and drink remaining at end of feeding session?	Food: Drink:
5. Quantity (¼ segments/¼ cupfuls) of food and drink discarded (e.g. on floor; removed by staff; left on table) at end of feeding session?	Food: Drink:
6. Duration of client's feeding session?	
7. Behaviour during 5 minutes after feeding session? (e.g. self-induced vomiting; visits toilet)	
8. Any other behaviour observed before, during or after feeding session?	
COMMENTS:	

APPENDIX III

CLIENT'S NAME: TODAY'S DATE:

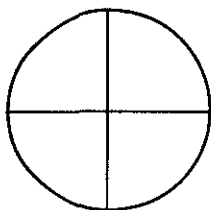
TYPE OF MEAL: TIME OF MEAL: a.m./p.m.
 (i.e. breakfast, lunch, dinner, snack)

WHAT DOES THE MEAL COMPRISE?
 (include any diet supplements)

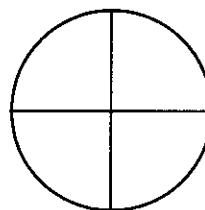
Food:
Drink:
Diet supplements:

Please indicate, as accurately as possible, the following information for this client by shading areas on the diagrams of food bowls and drinking cups below:

1. How much food remains (i.e. uneaten) at end of meal?



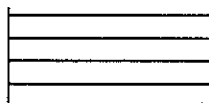
2. How much food was discarded (i.e. on floor; regurgitated; etc.)?



3. How much drink remains (i.e. not drunk) at end of meal?



4. How much drink was discarded (i.e. on floor; spilt; regurgitated; etc.)?



5. Did the client visit the toilet (or become incontinent), vomit, regurgitate or eject any food or drink after the meal? Please give details:

References

- Department of Health and Social Security.** (1981). *Care in the Community: A Consultative Document on Moving Resources for Care*. DHSS, London.
- Garrow, J. S.** (1988). *Obesity and Related Diseases*. Churchill Livingstone, London.
- Greene, K.S., Johnston, J. M., Rossi, M., Rawal, A., Winston, M. and Barron, S.** (1991). The effects of peanut butter on ruminating. *American Journal of Mental Retardation*, Vol. 95, No. 6, 631-645.
- Hewitt, K. and Burden, P.** (1984). Behavioural management of food regurgitation: Parents as therapists. *Mental Handicap*, Vol. 12, No. 12, 168-169.
- Hinds, P. and Oliver, C.** (1985). Chronic vomiting in people who are mentally handicapped. *Mental Handicap*, Vol. 13, No. 12, 152-154.
- Richter, J.** (1992). Reflux disease. *International Journal of Hospital Medicine*, Vol. X, No. 5, 49.
- Thompson, S. B. N.** (1992). Traitement de la dépression en rééducation cardiaque ambulatoire. *Visage de la Dépression*. March, 9 - 10.
- Thompson, S. B. N.** (1993). *Eating Disorders: A Guide for Health Professionals*. Chapman and Hall, London and New York.
- Thompson, S. B. N. and Morgan, M.** (1990). *Occupational Therapy for Stroke Rehabilitation*. Chapman and Hall, London and New York.
- Wolfensberger, W.** (1972). *The Principle of Normalization in Human Services*. National Institute on Mental Retardation, Toronto.