

Service evaluation to promote healthy eating and improve the nutrition and health of residents with a learning disability, especially those who are overweight/obese

Project report

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Introduction

Adults with a learning disability are more likely to have a worse diet than the general population (Hamzaid et al., 2020; Humphries et al., 2009), and have a higher prevalence of obesity (NHS Digital, n.d.). Conditions of the circulatory system are the second cause of death for people with a learning disability (White et al., 2022). However, as these conditions are modifiable, the risk of developing these conditions can be reduced by promoting a healthy lifestyle including a healthy, balanced diet (National Institute for Health and Care Excellence, 2023).

Adults with a learning disability are often dependent on others, whether this is their families or care staff, to provide their meals and other food and drinks (Smith & White, 2011). For those living in residential homes, they may have limited opportunity to influence their food choices where care staff predominately determine their dietary intake. It has been identified that care staff often have inadequate knowledge and understanding about healthy eating, which is a significant barrier for people with a learning disability to have a healthy lifestyle (Hamzaid et al., 2018; Harris et al., 2019; Larkin, 2021; Rostad-Tollefsen et al., 2021; Smith & White, 2011).

In the UK mandatory nutrition training for care staff is lacking, focusing on food safety/hygiene with limited guidance about supporting a healthy, balanced diet (Skills for Health, n.d.). Despite there being nutritional standards for public services (Department of Health and Social Care, 2021), there are no comprehensive nutritional standards specific for learning disability residential settings in the UK (British Dietetic Association, 2017; Crawley, 2007). Interventions addressing staff nutrition training and menu planning and delivery, are therefore required to initiate positive change (Dean et al., 2021; Humphries et al., 2009; Larkin 2021; Ozdemir et al., 2023; Smith & White, 2011).

Aim

The aim of this dietetic intervention was to increase knowledge and skills of the care workforce regarding The Eatwell Guide and the Mental Capacity Act and to improve food provision by promoting healthy eating recommendations (Public Health England, 2018).

Objectives

- To improve care staff's knowledge about the impact of weight and diet on health; The Eatwell Guide (Public Health England, 2018); and the Mental Capacity Act (Department for Constitutional Affairs, 2007) in relation to diet, weight and health.
- To improve care staff's skills in delivering a healthy, balanced diet.
- To improve food provision within the residential home to align with healthy eating guidance (Public Health England, 2018).
- To positively impact upon the residents' weight and health.

Funding

The project was successful in its bids and awarded funding from the Regional LeDeR Team in 2019 as well as the South West Learning Disability and Autism Programme 2022.

Literature search

A literature search was undertaken with the support of the Cornwall Health Library to identify the evidence base to support this intervention. The search terms were learning disability/intellectual disability residents in care homes/institutions/residential homes/food provision/nutrition/healthy eating guidance/intervention/dietitian/nutritionist/dietetic/weight loss/weight management/residential care/menus/meals. The database/search engines used were Cochrane, Embase, Medline, CINAHL, EMCare, and SCIE. Grey literature was also included in the search.

The search identified 137 main results, though only nine were selected as having relevance to support the intervention. The search showed limited interventions addressing the physical environment, such as nutrition training for care staff and menu planning in residential homes, with the majority being weight loss interventions at the individual level. This is supported by a recent systematic review which identified most studies at the individual level, and the authors calling for further interventions addressing the physical environment (Dean et al., 2021). Out of the nine results, there were none which included a tool to monitor adherence to national nutritional standards, such as the Eatwell Guide (Public Health England, 2018).

Implementation

The intervention took place at a residential care home for people with a learning disability (N = 14) in Cornwall between April – August 2023. 13 residents were weighed at the start of the intervention in April where 31% were overweight, 23% obese, 38% a healthy weight and 8% underweight. The proportion of residents within each BMI category is comparative with other data from residential homes and national data (Table one).

Table one

| | Intervention site (n=31) | Other learning disability residential home in Cornwall (n=68) | Larkin (2021) (n=64) | NHS Digital 2021 – 22 |
|-----------------------------|--------------------------|---|----------------------|-----------------------|
| Underweight (percentage) | 8 | 0 | 9 | 4.8 |
| Healthy weight (percentage) | 38 | 37 | 20 | 19.2 |
| Overweight (percentage) | 31 | 32 | 35 | 17.4 |
| Obese (percentage) | 23 | 31 | 36 | 25.2 |

The dietitian assessed food provision by visiting the home over two days in May, where she observed meals being served and food supplies; tasted some meals; and spoke with staff including the chef and manager.

Meals are mainly home cooked by an experienced chef and when she is away prepared by care staff. There is no set menu plan, and meals and ingredients are listed in a kitchen diary. Meals are prepared for both residents and staff.

The main observations pre-intervention:

- Flavoursome, mainly home cooked meals.
- Good variety of vegetables.
- Too much red meat.
- Too many dishes with pastry.
- Plant based meals lacking in protein and with excess cheese.
- Limited fish and no oily fish.

- Limited choice of lower calorie starchy carbohydrates (roast potatoes and mashed potato with added cream and butter often served).
- Inclusion of processed meats several times a week.
- Meal portion sizes based upon staff perceptions of portion size and not portion size guidance.

Two face-to-face training sessions on The Eatwell Guide (Public Health England, 2018) and the Mental Capacity Act (Department for Constitutional Affairs, 2007) in relation to nutrition and health were offered over two separate days in May and July. Ten staff members, including the chef, carers/support workers, and the care home manager participated.

A set of slides directed the training and interaction with participants was encouraged to enhance learning (see Appendix 1). The staff took part in a quiz to test their knowledge about healthy eating and the Mental Capacity Act pre and post training (see Appendix 2); there was a food portion measuring game where participants measured out food and compared with food portion guidance (Appendix 3); and staff had the opportunity to have their questions answered.

A menu checklist to self-assess and monitor food provision against the Eatwell Guide (Public Health England, 2018) was given to the care home (see Appendix 4). This tool outlines standards for each food group and provides information about how to implement each food group. There is limited guidance about food standards for learning disability care settings. The British Dietetic Association (2017) recommends that food provided is varied and nutritious, and menus are based upon the Eatwell Guide unless advised by a medical professional for revision due to a person's specific dietary requirements. The Caroline Walker Trust (Crawley, 2007) offers useful in-depth nutritional guidance including food-based standards, but some of the information is now out of date and revision is underway. Due to this lack of guidance the menu checklist was inspired by school food standards (Department for Education, 2023) and nutritional standards for public services (Department of Health and Social Care, 2021).

Five weeks after the second training the dietitian revisited the home to discuss with staff any changes that have been made to food provision.

Findings

Improvement to staff understanding and knowledge about nutrition.

The pre and post training quiz showed an 11% improvement in learning (74% answers were correct pre and 85% post). For 3 out of 10 questions, there was a

marked improvement in learning. These were calcium servings (change from 20% to 67%), portion size of fruit juice/day (change from 20% to 100%), and foods high in sugar and fat as a food group (change from 50% - 78%). For 5 out of 10 questions there was no improvement in learning, but most participants gave the correct answer pre and post training. For 2 questions (*Which meal would you offer for the highest fibre content?* and *If a person has capacity and is often choosing an unhealthy meal, such as fish and chips or pasty, would you try to limit this?*) fewer participants gave a correct answer post training (change from 100% - 66% and from 80% - 77% respectively).

Overall, it appears that most participants had a good knowledge and understanding about healthy eating and supporting residents to make healthy choices whether they have capacity or not. This is supported by the research carried out by Ozdemir et al. (2023), however other researchers have found an inadequate knowledge and understanding about healthy eating amongst care staff (Hamzaid et al. 2018; Harris et al., 2019; Rostad-Tollefsen et al., 2021; Smith & White, 2011).

The participants gave a range of responses in their feedback to the question about what they would do differently. These included portion control; to reduce fresh juice and sugary drink consumption; to increase the intake of fibre, fruit and vegetables, calcium, and vitamin D; to use colour coded food labelling; and to limit unhealthy choices. It was encouraging that the manager is intending to liaise more with the chef about menu planning following the intervention.

Improvement to meal provision

The intervention site had started to make several changes to their menu provision. These include reducing the intake of red meat, pastry, processed meats, cream, and butter. The home has started to trial new dishes to support healthy changes, such as swapping red meat with turkey meat; topping dishes with potato or sweet potato instead of pastry; making pastry free quiches; serving half and half white and wholemeal tortillas; and offering more fish, including oily fish. Some of the new recipes have been accepted well while for others they have not, and for these the chef is making ongoing adaptations.

The home has identified several challenges including some residents not eating the new dishes and some staff being resistant to the changes due to their own food preferences. Food waste and residents being given a less nutritious alternative were expressed as a concern. There needs to be ongoing education about appropriate portion sizes. The care home manager will continue to remind staff about this and will make copies of the pictorial portion size guidance to display in areas where food is served (Appendix 3).

It appears that the home is committed to support a healthier menu and to make further changes. The menu checklist is being referred to by the chef and will be used in the monthly kitchen audit (Appendix 4).

Conclusion

This dietetic intervention has improved the menu quality in several key areas and improved care staff's nutrition knowledge and understanding. It has promoted the care home manager and chef to make changes to the menu to improve its nutritional content and to regularly monitor compliance to healthy eating recommendations (Public Health England, 2018).

It is anticipated that this intervention will improve the nutrition and health of overweight and obese residents (Larkin, 2021). In addition, other residents will benefit from improvements in the menu quality and staff knowledge and understanding about healthy eating, such as the importance of adequate fibre and calcium in reducing health inequalities related to constipation (NHS England and NHS Improvement, 2019; White et al., 2022) and osteoporosis (Frighi, et al., 2022).

Gaining the commitment from the care setting manager to educate staff and regularly monitor their food provision against healthy eating recommendations is important to ensure sustainable changes.

Recommendations

Outlined below are recommendations to promote healthy eating in residential homes for people with a learning disability:

- To secure the full commitment of the care home's management for training, to implement changes and to regularly monitor food provision. Without this full commitment training could become a box ticking exercise without changes being made to food provision.
- To suggest small, gradual changes to be made to the food provision rather than a complete overhaul as this will help to prevent resistance to change from management, staff, and residents.
- To encourage a culture of healthy eating by the ongoing promotion of key healthy eating messages through relevant trainings, healthy eating visual displays in the home, and health promotion initiatives for staff. This will help to challenge those staff who may have strong food preferences, which do not align with healthy eating and the health needs of the residents.
- To offer a menu checklist to support the home to monitor their food provision and to identify where improvements could be made. This will support the home to take ownership of monitoring and making menu changes rather than being dependent upon an external organisation, such as a dietetic service.
- To run the project over a longer duration than four months to enable:
 - assessment of impact upon body weight of the residents.

- higher number of staff to be trained due to high staff turnover and limited staff being able to be released from their duties at one time.
- assessment of changes made to food provision to increase accountability and to enable further support from the dietetic service, if required.

Appendices

1. Training slides (on request)
2. Quiz
3. Portion size guidance from the British Heart Foundation
4. Menu checklist

Healthy eating quiz: pre training

Please select only one for your chosen answer by putting a tick against it. Thank you for taking part.

1. **How many portions of fruit and vegetables are recommended to have each day?**
 - 7
 - 5
 - 3
 - 10

2. **What is the maximum amount of unsweetened fruit juice that is recommended each day?**
 - 500ml
 - 150ml
 - 50ml
 - 250ml

3. **Are foods high in sugar and fat eg cakes, biscuits, crisps, a food group of the Eatwell Guide?**
 - Yes
 - No

4. **How many portions of calcium rich foods are recommended to have each day?**
 - 3
 - 2
 - 6
 - 4

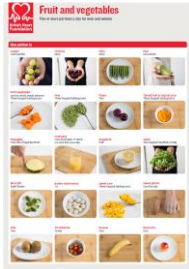
5. **Which colours on a colour coded/traffic light food label would offer the healthiest choice? Select more than one answer.**
 - Red
 - Green
 - Amber
 - Purple

6. **Which meal would offer for the highest fibre?**
 - Jacket potato, baked beans and salad
 - Macaroni cheese (made with standard pasta) and salad
 - Fish fingers, mashed potato and peas
 - Sausages, chips and carrots

7. **If a person DOES NOT have capacity, should you support them in making healthy choices?**
Yes
No
8. **If a person has capacity, should you support them in making healthy choices?**
Yes
No
9. **If a person DOES NOT have capacity and is often choosing an unhealthy meal, such as fish and chips or pasty, would you try to limit this?**
Yes
No
10. **If a person has capacity and is often choosing an unhealthy meal, such as fish and chips or pasty, would you try to limit this?**
Yes
No

Portion size guidance from the British Heart Foundation

Fruit and vegetables



<https://www.bhf.org.uk/information-support/publications/healthy-eating-and-drinking/portion-info/fruit-and-vegetables>

Potatoes, bread, rice, pasta and other starchy foods



<https://www.bhf.org.uk/information-support/publications/healthy-eating-and-drinking/portion-info/potatoes-bread-rice-pasta-and-other-starchy-foods>

Beans, pulses, fish, eggs, meat and other proteins



<https://www.bhf.org.uk/information-support/support/healthy-living/healthy-eating/healthy-eating-toolkit/food-portions/beans-pulses-fish-eggs-meat>

Dairy foods and alternatives



<https://www.bhf.org.uk/information-support/support/healthy-living/healthy-eating/healthy-eating-toolkit/food-portions/dairy-and-alternatives>

Oils and spreads



<https://www.bhf.org.uk/information-support/publications/healthy-eating-and-drinking/portion-info/oils-and-spreads>

Menu checklist

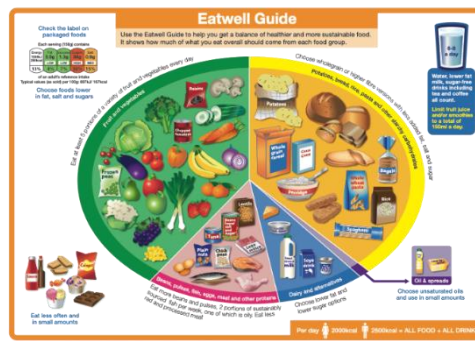
This checklist is for all food provided within the care home at breakfast, lunch, evening meal and snacks. The aim is to follow the Eatwell Guide to promote healthy eating. Guidance is provided for each section to support you with its implementation (see pages 4-7).

| Potatoes, bread, rice, pasta and other starchy carbohydrates | | Yes | Comment |
|--|--|-----|---------|
| | Is there a healthier plain starchy carbohydrate at lunch and evening meal? e.g. plain rice, boiled potatoes, new potatoes | | |
| | Is there a higher energy starchy carbohydrate at lunch and evening meal? e.g. roast potatoes, wedges, creamed mashed potato | | |
| | Is there a choice of bread available? e.g. white, 50:50 and wholemeal | | |
| | For residents offered texture modified meals, is there a starchy carbohydrate available at lunch and evening meal? | | |
| | For breakfast is there a choice of wholegrain cereals e.g. wheat or oat biscuits, oats, and lower fibre cereals e.g. rice pops, cornflakes? (aim to offer lower sugar varieties) | | |

| Fruit and vegetables | | Yes | Comment |
|--|--|-----|---------|
| | Throughout the day is there an offer of at least 5 servings of fruit and vegetables? | | |
| | Is fresh fruit available every day? | | |
| | Is there a choice of two vegetables at lunch and evening meal every day? | | |
| | Do people needing texture modified meals have a range of fruit and vegetables? | | |
| | Is there a pudding offered two or more times a week which contains at least 50% of fruit? | | |
| | Is there a choice of at least 3 different types of fruit and vegetables a week? | | |
| Beans, pulses, fish, eggs, meat and other proteins | | Yes | Comment |
| | Does lunch and evening meal offer a portion of protein? | | |
| | When serving plant-based meals, does it include a source of protein? | | |
| | Are two portions of fish offered each week, one of which is oily? Oily fish e.g. mackerel, sardines, salmon. | | |
| | Is red meat limited to no more than 3 servings per week? e.g. beef, pork, lamb. | | |
| | Are processed meats limited per week e.g. ham, bacon, chorizo? (It is advised to avoid or have minimal amounts). | | |

| Dairy and alternatives | | Yes | Comment |
|-----------------------------------|--|-----|---------|
| | Is there an offer of at least 3 servings of dairy every day? e.g. milk, cheese, milky pudding/custard, yogurt. | | |
| Oil and spreads | | Yes | Comment |
| | Is there a choice of a lower calorie/unsaturated fat spread and higher calorie option/saturated fat e.g. butter available at each meal time? | | |
| | Is the main source of fat used for cooking unsaturated e.g. rapeseed or olive oil/spread? | | |
| Foods high in fat, sugar and salt | | Yes | Comment |
| | For lunch and evening meal is there not more than two servings of pastry per week? | | |
| | Does the menu not offer more than two servings of food that are deep fried, coated in batter or breadcrumbs per week? | | |
| | Is no more than 150ml of unsweetened fruit/vegetable juice/smoothie given each day? | | |
| | Is salt not available to add at meals? | | |
| | Is there a choice of healthier snacks available? (some residents may need more nutrient dense snacks) | | |

Guidance



Potatoes, bread, rice, pasta and other starchy carbohydrates

These foods provide energy for the body and a range of important nutrients, including calcium, iron, and B vitamins. Offer some at each meal for a steady supply of energy throughout the day. Preferably choose wholegrains, such as brown rice, wholewheat pasta, wholemeal bread, and oats/alternative wholegrain breakfast cereal, to support having enough fibre (30g is required for adults per day).

Wholegrains are more nutritious and satisfying, supporting in controlling weight by not feeling as hungry between meals. 50:50 bread or mixing white and wholewheat pasta may be more acceptable if trying to change a resident from eating white carbs. Jacket potatoes with their skins are a good fibrous option. You could mix plain and wholemeal flour when baking.

Offer a choice of plain carbs as well as higher carb choices at each meal to tailor the meal to the calorie needs of the residents. For residents who are overweight offer plain options that are lower in calories, such as boiled potatoes or new potatoes, plain rice or pasta in a non-creamy sauce, and limit to one choice of starchy carb (e.g. not garlic bread and pasta, or a tortilla wrap with potato wedges), whereas for residents who are underweight offer higher energy options, such as creamed mash potato, roast potatoes and creamy pasta sauces.

Fruit and vegetables

Aim for 5 A Day as a minimum and offer a variety of fruit and vegetables to ensure that a full range of nutrients are provided. Offer different colours (think of a rainbow) daily and across the week.

A portion is 80g or

- A whole fruit e.g. apple or banana
- A slice of fruit e.g. a melon
- 2 small fruits e.g. 2 tangerines
- Handful of berries

- Dried fruit - 30g/ 3 dried apricots/ 1 tablespoon raisins
- Salad - bowl

You can offer one portion (80g) of pulses (beans, peas and lentils) as part of 5 A Day, though as they are not as rich in nutrients as fruit and vegetables, offer a range of other fruit and vegetables. Beans on toast, hummus, lentil casserole or mixed bean soup are good ways of including more fibre in the diet.

Limit unsweetened fruit/vegetable juice and smoothies to no more than 150ml per day. Drinking too much can contribute towards weight gain and tooth decay. However, if a resident has a limited intake of fruit and vegetables, juices can be a useful source of vitamin C. To reduce the amount served you could dilute with some water.

Offer fruit and vegetables at each meal, including at breakfast, and when having snacks. Frozen, dried and tinned (not in syrup, no added salt and sugar) can be offered as well as fresh. You could offer chopped fruit or berries as toppings on cereal and plain yogurt, salad or a few tomatoes/cucumber chunks with sandwiches, raw vegetable sticks with dips, and a mix of vegetables and pulses in soups, curries, and stews.

Beans, pulses, fish, eggs, meat and other proteins

These foods provide protein for the body to repair itself, build muscle and have strong bones. Include a good source of protein at lunch and evening meal. If offering a plant-based meal, make sure that a source of plant-based protein (e.g. Quorn, beans and lentils) is included rather than serving only vegetables and carbs.

Aim for at least two portions (2 x 140g) of fish a week, including a portion of oily fish. Fish is low in saturated fat and includes useful nutrients. Oily fish, such as salmon, sardines, mackerel, and kippers are rich in Omega 3, which has numerous health benefits, including being heart protective. Offer fish as a main meal or as a sandwich filling. Mixing the fish with other ingredients may be more acceptable and cost effective rather than offering the fish as a whole piece, such as making mackerel fish cakes or tuna pasta bake.

Limit the offering of red meat (e.g. lamb, beef, pork) to no more than 3 servings (about 350 – 500g cooked weight or 700 - 750g uncooked weight) a week due to its higher saturated fat content and bowel cancer risk. Offer more meals with white meat (e.g. chicken, turkey and fish) or are plant-based (e.g. pulses: beans, peas and lentils, Quorn). If making meals with red meat, you could reduce the meat content by adding some pulses, which will also increase the fibre content of the diet.

It's recommended to eat little or no processed meats due to their bowel cancer risk. These are meats that have been smoked, cured or had salt or chemical preservatives added. They include ham, bacon, some sausages e.g. hot dogs, chorizo, salami, pastrami, corned beef.

As protein takes longer to digest and makes you feel less hungry, its useful for weight management.

Dairy and non-dairy alternatives

To provide enough calcium aim to have 3 dairy servings a day, such as 200ml milk (small glass), 1 pot of yogurt (125g) or 30g of hard cheese (small match box size). Some residents may need more due to certain health conditions. Dairy also offers protein and other important nutrients.

Offer lower fat options of milk, yogurt and cheese for residents who have a healthy weight or are overweight. Choose reduced fat cheddar, low fat cream cheese, cottage cheese, low fat yogurt, and skimmed or semi-skimmed milk. Grating cheese rather than offering sliced or choosing stronger flavour cheeses can reduce the amount eaten.

For residents who are underweight choose higher calorie dairy options such a whole milk, Greek style yogurt or thick and creamy yogurt.

If the resident does not eat dairy, choose plant-based milks which are fortified with calcium and other nutrients. Check the label as not all will be fortified.

Oil and spreads

As oil and spreads are high in calories offer/cook with them in small amounts. Choose unsaturated fats such as olive or rapeseed rather than saturated fats such as butter, lard, palm oil and coconut oil.

Foods high in fat, sugar and salt

Offer these foods in small amounts as they can cause excess calories and weight gain, especially if eaten in large amounts. These foods can cause increased blood pressure and high cholesterol as well as being low in fibre and nutritionally poor.

Reduce the frequency that pastry and fatty cuts of meats are included in the menu and swap with leaner meats (fish, chicken or turkey) or top dishes with mashed or sweet potato.

It is recommended for adults not to eat more than 6g of salt a day (this is roughly a teaspoon). Aim to reduce the amount of salt added while cooking and don't offer salt that can be added at the table. If using shop bought products, choose reduced salt products, or read traffic light food labels choosing products that have less than 0.3g salt per 100g (green label).

It is recommended for adults to not eat more than 7 teaspoons or 30g/day of free sugars. Free sugars are sugars added to foods and drinks (whether homemade or

manufactured) and the sugars in honey, syrups, fruit/vegetable juices, smoothies, and fruit juice concentrates.

Use the traffic light food labels and choose products that have 5g or less of sugar per 100g (green label) and choose reduced sugar products, such as for baked beans and sauces.

Experiment with reducing the amount of sugar added to puddings/cakes, and replace snacks high in fat, sugar and salt with healthier snacks, which include a wholegrain carb, some protein and healthy fat, such as

- natural yogurt and a topping of fresh fruit, fruit puree or tinned fruit (in juice or water)
- wholegrain crackers/oat cakes with low fat cream cheese or reduced fat hummus
- raw vegetable sticks (carrots, cucumber, and pepper) with a healthy dip and wholegrain crackers/wholemeal pitta
- homemade smoothie or milkshake using natural ingredients (limit to 150ml/day)

As rewards/distractors for behaviour use non-food alternatives and tailor these to individual resident's preferences e.g. garden time, listening to music, colouring, dancing.

For residents who are underweight offering frequent energy dense/nutrient dense snacks may be more appropriate.

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