

Prison Foodservice in England

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Abstract

Feeding a prison population presents a number of challenges, not least of all because the food provided is often the only or primary source of sustenance on which inmates must depend, often for a number of years. This paper draws on two major studies conducted in 16 prisons (12 male, 2 female and 2 young offenders' institutes), to examine the foodservice provision of prisoners in England.

Both studies used observation, kitchen records and unstructured interviews to establish food preparation methods, kitchen practices and food service techniques and procedures. The first study measured the intake of food provided by the prison service in eight male prisons (n=506) over a 24-hour period using a modified visual estimation technique. In the second study, data were collected from eight prisons, four male, two female and two young offenders' institutes for three days, from the cyclical menus. The institutions' recipes, methods and standard or average portion sizes were used to calculate food and nutrient intake. Unstructured interviews were conducted with inmates and prison warders in both studies.

Results show that prisoners are provided with a high standard of food and, with the exception of some nutrients, consume a healthy diet. In the second study it was shown that prisons have attempted to provide meals that conform to the Balance of Good Health model but menus are not always correctly annotated and some dishes are not as healthy as they could be.

Introduction

It is estimated that the world's prison population is more than 9.25m with 2.19m in the United States, 1.55m in China and 0.87m in Russia (Walmsley, 2007). Apart from Luxembourg, England and Wales lock up more prisoners per head of the population, which over the last five years has increased by 18%.

In nineteenth century England, the prevailing attitude towards prisoners often centred on the 'principle of less-eligibility' in that a pauper living in the work-house should not be better fed than the poorest labourer and by inference, a prisoner not better fed than the labourer (Tomlinson, 1978). However today, prison is a significant opportunity to address the health needs of a group, many of whom make little use of outside health service facilities (Harris, *et al.*, 2006). Prisoners are invariably a disadvantaged segment of society as indicated in recent reviews of their health (Condon, *et al.*, 2007; Harris, *et al.*, 2006). Prisoners are more likely to have smoked (males, 77%; females, 82%; compared with 27% of the general population), drunk (over twice as many women admitted to hazardous drinking than the general population), taken drugs (55% of females prisoners have a history of drug problems compared with 8% of the general population) and practiced unsafe sex with a greater number of partners. Similarly, young offenders (under 21 years of age) come predominantly from backgrounds of abuse, school exclusion, family disruption and local authority care with higher rates of drug and alcohol use, beginning sexual intercourse at a younger age, cigarette smoking, lack of exercise and eating junk food.

Food plays a major role for prisoners; it conditions their life in custody and in many respects is symbolic of the prison experience (Smith, 2002). It relieves the boredom and monotony of a routine existence and a number of authors (NAO, 1997) have suggested that it is also a catalyst for aggression. An ill-designed menu, inadequate portion sizes, lack of variety and poorly cooked food can also contribute to serious complaints and dissension (Blades, 2001). In addition, food is often seen as currency, and used to barter for other goods on the underground economy (Godderis, 2006).

Ensuring, that all prisoners have the opportunity to choose and consume a healthy, nutritionally balanced diet is therefore essential, particularly when it is their sole or primary source of food. This task is further compounded by the special dietary requirements of some groups such as vegans, vegetarians, Muslims and Jews.

The purpose of this paper is to examine the dietary provision of prisoners in England from a foodservice perspective, using two major studies conducted in 16 prisons (12 male, 2 female and 2 young offenders' institutes (YOI)).

Methods

Overview

In both studies observation, kitchen records and unstructured interviews were used to establish food preparation methods, kitchen practices and food service techniques and procedures. Two methods were used to gather food intake data. In the first study, a modified visual estimation technique was used to record the dietary intake of 506 prisoners over a 24-hour period in eight male prisons. The methodology used during the second study centred on collecting three days' data from the cyclical menus of four male and two female prisons and two young offenders institutes. The institutions' recipes, methods and standard or average portion sizes were then used to calculate food and nutrient availability. Unstructured interviews were conducted with inmates and prison warders on prison wings.

Selection of Prisons

In the first study, the prison service identified what they considered to be eight 'typical' examples of male prisons. It could be argued that selection in this way would bias the sample, but due to the nature of the food intake data collection, it was important to ensure that prisoners would cooperate with the research. Prison wings within the prison were also chosen to ensure the greatest likelihood of cooperation.

In the second study, the prisons, male (category A, B and C), female and young offenders institutes were randomly identified from the entire prison population ensuring that they represented all regions of the country and that one privately operated (contract) prison was included. Once prisons had been selected, each was contacted and dates for the visit proposed and arrangements made for the data collection.

Data collection

In general, similar procedures were adopted for each of the visits within the two studies. Researchers arrived in the afternoon in order to introduce the team, meet the key personnel, explain the nature of the research and identify any documentation required. The opportunity was also taken to become familiar with the layout, operating practices and procedures used, commence the data collection and see the evening meal.

The main data collection commenced the following day and in both studies, data collectors worked in the kitchen collecting details of dishes, their composition, methods

of cooking and portion sizes in order to provide details of the nutritional composition. This continued for the duration along with an audit of equipment and procedures, and unstructured interviews/discussions with both inmates and supervisory staff working in the kitchen.

In the first study, details of what prisoners chose to eat were captured by positioning researchers at the end of the service counter. Once prisoners had collected their meals, they were then shown and, using a modified visual estimation technique, how much each prisoner had chosen was assessed. Data were collected for the breakfast, midday and evening meals and also for any additional items, such as the beverage pack provided by the prison catering service.

In the second study, three days from the prisons' cyclical menus, along with standard recipes and portion sizes were used to calculate the meals available. Where standard recipes were not available, recipes were calculated from the kitchen observations. The most popular items chosen were then used as the basis to calculate food and nutritional availability. Finally, observation at the service counter enabled 'additional' items such as bread, spread and salt to be ascertained.

In both studies, unstructured interviews were conducted with prisoners and warders on an opportunistic basis in order to gather opinions, feelings, experience and context in which food consumption occurred.

Analysis of Menus

The nutritional content of the food consumed or provided was calculated from the data collected using standard food tables (Holland, et al., 1991; FSA, 2002) and additional information obtained from the manufacturers of ready-made items. In the first study, nutritional analysis was undertaken using a computer based spreadsheet, and in the second study, a computer program 'Microdiet'¹. Results were compared with current recommendations for nutrient intakes (Department of Health, 1991) and the percentages of energy derived from macronutrients; for the appropriate age-gender groups.

In the second study, cyclical menus, varying in length from 14 to 28 days, were compared with the 'Balance of Good Health' model (Food Standards Agency, 2001) which makes recommendations for amounts of food to be consumed. In addition, menus were also analysed for their gastronomic content, using a value judgement from the experienced data collectors, in terms of a balance between variety and choice, and for aspects including colour, flavour and texture.

Results and Discussion

Introduction

Generally speaking, people in prison have poorer health than the general population, hence foodservice providers have an important role to play in influencing access to and ensuring that individuals consume a healthy balance diet (HM Government and DoH, 2005).

The Prison Menu

In all prisons, breakfast is now given out as a 'pack', either the evening before or in the morning and contains a number of items: an example is given in Figure 1.

¹ A computer programme (Salford University) details available at www.microdiet.co.uk.

Figure 1. An example of a breakfast pack

Food	Quantity
Breakfast cereal (various)	Various ($\pm 30g$)
Full fat milk	284 g
Tea bags	13 g
Coffee whitener	10 g
Sugar, white	20 g
Brown or white bread	2 slices
Jam	25 g
Spread	10 g

In addition, there is a ‘beverage pack’, containing tea (but no coffee), sugar and coffee whitener, enabling prisoners to ‘make a brew’ when they want, usually from water boilers, available on each wing. Other ‘packs’ are also available to cater for specific considerations; including vegans, vegetarians, diabetics, and Mormons. In the first study, all of the prisons had recently switched to a ‘pre-select’ menu for the midday and evening meals, which had subsequently been in operation for six years prior to the second study. The pre-select menu includes a choice of approximately five main meal items (entrées) for both the midday and evening meals from which prisoners order, approximately three days in advance. At the service counter when meals are collected, a warder calls out the prisoner’s name and his previously chosen entrée; the inmate then walks along the service counter where potatoes (or other starch item) vegetables and gravy are served and also collects a dessert or fresh fruit which may have been pre-ordered. Sliced bread, primarily white, although some wholemeal is generally available, spread and condiments are freely available. Inmates then, with three exceptions, returned to their cells where they consumed the meals. In the two female prisons, inmates collected their meals from a service counter and then ate in a dining room; whilst in the young offenders’ institution, the young men sat at tables of four in the communal area between cells. An example of a prison pre-select menu is given in Figure 2.

Figure 2. An Example of a Pre-Select Menu

Day	Midday	Evening
Day 1	Vegetarian Pasta Bake Chicken & Mushroom Pie Halal Jamaican Beef Patti Corned Beef & Pickle Roll Jacket Potato & Coleslaw	Vegetable Supreme Chicken Supreme Halal Chicken Curry Grilled Gammon Pork Pie Salad
Day 2	Vegetable Pancake Roll Breaded fish Cheese & Beano Grill Cheese & Tomato Roll Jacket Potato & Tuna	Bean & Vegetable Curry Chicken Chasseur Halal Beef Casserole Fish in Parsley Sauce Vegetable Quiche Salad
Day 3	Vegetarian Sausage & Egg Bacon, Sausage & Egg Halal Sausage & Egg Turkey Salad Roll Jacket Potato & Curried Beans	Soya Lasagne Minced Beef Lasagne Halal Beef Italienne Rice & Bean Stuffed Pepper Salad Cheese Salad

Food Budget

The amount of money available for prison food throughout the UK varies considerably, ranging from £1.20 in an open prison to £3.41 in a young offenders institute (mean £1.87) (NAO, 2006) although it is difficult to assess the absolute value as in some prisons, food can often be supplemented with items purchased from prison farms and gardens, or grown in a local greenhouse. Even so, it would be fair to state that the amount of money is limited, for the meals, which have to be provided.

Food Procurement

Food procurement is primarily through commercial suppliers and in the second study, the standard of produce seen was high, particularly in view of the funding available. As might be expected, some comments were made on the consistency/reliability of supplies and the quality actually delivered.

Kitchen Practices

Staffing

In two prisons, one in both studies, the foodservice operation had been contracted out, partly because of the type of prisoners involved (young offenders), and partly the longer-term availability and reliability of labour. In the other prisons, food preparation was undertaken by prisoners supervised by prison catering staff; either uniformed or civilian. Supervisory staff were appropriately qualified and experienced, whereas prisoners generally had little or no previous experience, and had 'volunteered' to work in the kitchen where they received appropriate on the job training. One prison kitchen had introduced a 'National Vocation Qualification' scheme for the training of chefs and in others 'cookery lessons' were part of the general education process designed in part to rehabilitate inmates for their release. In prisons with a high proportion of Muslim prisoners, many of these individuals were encouraged to work in the kitchen so as to ensure that food was, and was known to be, prepared and cooked using Halal ingredients and methods.

The selection, retention and training of prisoners posed specific problems, particularly when considering the working conditions where prisoners are using knives. Selection was therefore carefully controlled and monitored and any 'volunteers' for the kitchen had to be 'drug free'.

Service at the hotplate in the prison wing, was undertaken by prisoners, closely monitored and supervised by prison staff for it is here that prisoners come together with an increased opportunity for conflict. The treatment of individual prisoners and aspects such as portion sizes had to be, and had to be seen to be, fair, hence this accounted in part for the use of a large number of pre-portioned, 'identical' products. The use of these products also had the additional effect of ensuring that portion control of the more expensive commodities (entrées) was good, with starch and vegetable items being relatively freely available.

Recipes and Methods

In all prisons visited during the second study, no comprehensive lists of recipes and methods were available or where they were, these were either incomplete or not always referred to, hence composition varied each time a dish was produced. Whilst this might be considered 'normal' practice in a high-class restaurant, it is perhaps a little unusual in

an institutional setting, where budgets are tight and recipes/methods need to be carefully controlled.

Production Techniques

Despite the large quantity of items bought in ready made and pre-portioned, a number of dishes were also made in the central prison kitchens. Here traditional techniques were used although a number of recipes had been modified to reflect the tight budget. Practices such as the minimal use of added salt and margarine, the latter primarily because of budget constraints had the effect of contributing to healthier diets. Only in one kitchen was margarine seen to be added to potatoes and this was in part because of a poorer product quality.

The deep-frying capacity in most kitchens was limited although it was not clear whether this was by design or default but it did ensure that in all except the female prisons, fewer foods were fried. Most foods that would have normally been fried were cooked in combination ovens, thereby contributing to a healthier diet.

All prisons had sandwiches and rolls as part of their menu. In some prisons these were ready-made whilst in one, ingredients were provided separately wrapped so that prisoners could make-up their own. This was considered a very effective practice and enabled sandwiches/rolls to be filled by prisoners; omitting items they did not want. It also gave prisoners a sense of independence, encouraged them to feel involved with the food served and help take ownership of their lifestyle whilst serving a sentence.

Kitchen Equipment

The equipment seen in all of the kitchens and service areas visited was of a high standard, well maintained and cleaned by prisoner kitchen porters. A full range of equipment was available, including, for example, combination ovens, which as already alluded to, ensured and enabled items to be cooked in an oven, rather than fried.

Food Transportation

In the majority of prisons, food had to be transported to wings where it was served: procedures which involved loading food into trolleys, often well prior to the start of service, waiting for collection, and transported to the wings where there were further delays. Any delay from the time a food is cooked to when it is served needs to be avoided, for it is here that most of the nutritional losses take place. It has been estimated (Carlson and Tabacchi, 1988), for example, that up to 39% of vitamin C can be lost in vegetables if held for 30 minutes at 145°F (63°C).

Any action, procedural or foodservice system, which can reduce this delay or decouple food production from consumption, might help although within the current constraints, there is unlikely to be one solution that is feasible throughout the prison service. Possible solutions include:

- Building dining rooms adjacent to the prison kitchen – this would involve major capital outlay but with a number of offset savings. Clearly though, this would not be a workable solution in all prisons due to the difficulty of moving large numbers of prisoners at meals times.
- Site kitchens closer to the wings – this is unlikely to be a feasible solution, as the wings invariably need to be dispersed for security reasons.
- Centralised cook-chill, cook freeze and sous vide systems - this is unlikely to be suited to the prison service as additional duties would need to be undertaken on the wing which in the present climate would not be feasible.

Food Service Interaction

The location where food is served provides an opportunity for interaction between both prisoners and foodservice personnel (prisoners and staff). A number of previous authors have commented on this as a source of tension (NAO, 1997; Blades, 2001) and complaining about the food provides a way of 'kicking-off' at the system, and to those with few ways in which to rebel, food provides one means of doing so (Smith, 2002). It was noted during the second study that the interaction was both positive and negative. In one female prison, an officer at the service counter made a disparaging comment regarding the presentation of the food '*... this doesn't look very appealing does it*'... In another, positive encouragement and empathy, was demonstrated by prison servers encouraging their fellow prisoners to try dishes, with comments such as '*...green beans are good for you... don't you want some*'.

This interaction is important as it has been shown that positive comments can influence both what is chosen and how much is consumed; negative comments have the opposite effect. Where younger serving staff are involved, positive and negative comments can influence food selection (Edwards and Meiselman, 2005). When a person in authority makes a positive or disparaging remark, this can affect not only the acceptability of the food but also how much is consumed (Engell et al., 1988).

Nutritional Intake

Details of the nutritional intake for the standard diets in both studies are given in Table 1. In general, food provided by the prison service had a nutrient content close to recommendations and mirrored guidelines. Average energy intake was in excess of the recommendations and for the male prisons slightly higher in the second study. What should be pointed out though, particularly in the second study, is that these data are for the average amounts of food served or provided at the service counter and take no account of food that might have been wasted or not consumed. The remaining results compare favourable with the recommendations (Department of Health, 1991) with relatively small variations. One aspect which is of concern is the amount of salt consumed, and it is recommended that intake is reduced to 6g/day. However, the difficulty in achieving this level, even in prison where little or no salt is added during the cooking processes, is illustrated and the high levels here can be attributed to the large number of dishes which are bought in ready made, and high quantities of bread consumed. Even so, the overall levels of nutrients available and consumed compare favourably with the UK population figures (Hoare, 2004), and in many respects, prisoners' diets being better.

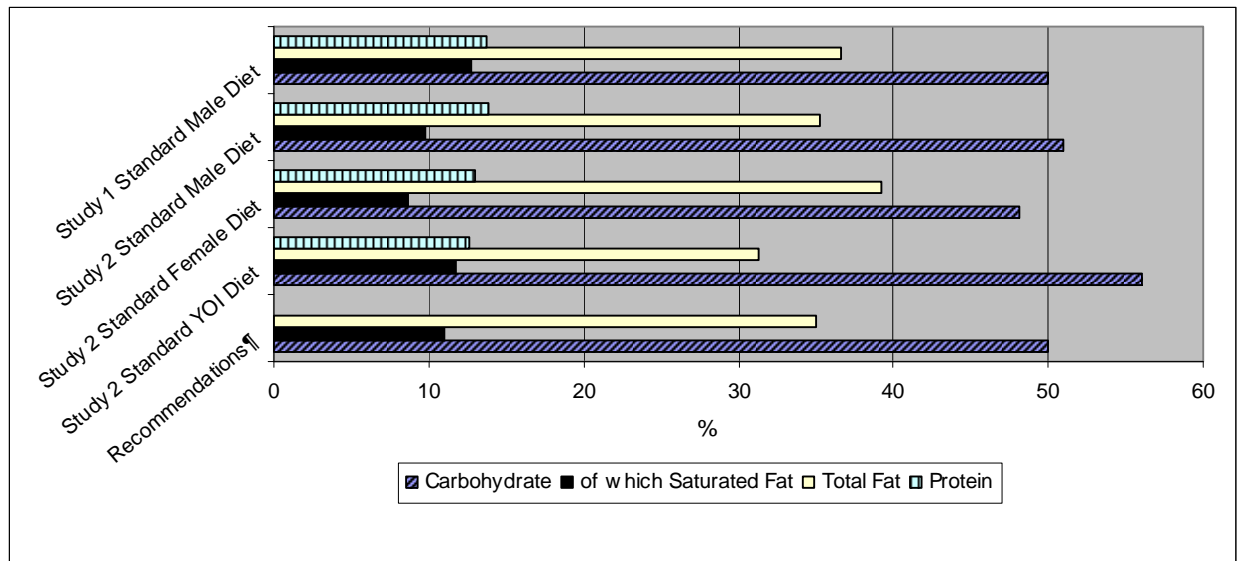
Table 1. Mean Nutrient Provision Both Series of Studies

Nutrient	Unit	Study 1 Standard Male Diet		Study 2 Standard Male Diet		Recommendations ^a	Study 2 Standard Female Diet		Recommendations ^b	Study 2 Standard YOI Diet		Recommendations ^c
		Mean	SD	Mean	SD		Mean	SD		Mean	SD	
Energy	kcal	2561	665	3042	87	2550	3007	471	1940	3115	561	2755
	MJ	10.77	2.79	12.80	0.37	10.6	12.64	1.96	8.1	13.13	2.53	11.51
Protein	g	88.0	27.0	104.6	7.4	55.5	98.1	5.2	45	98.4	5.4	55.2
Total Fat	g	103.1	33.2	119.2	3.2		130.9	30.1		108.3	32.2	
Carbohydrate	g	341.8	101.7	413.9	18.2		385.5	44.8		465.6	78.8	
SFA	g	--	--	33.1	3.9		28.6	1.1		40.6	3.2	
Vitamins												
A Retinol Eq.	mcg	1950	3897	1381	828	700	666	129	600	1558	701	700
B ₁ Thiamin	mg	2.0	.08	2.3	0.3	1.0	2.6	0.1	0.8	2.5	0.8	1.1
B ₂ Riboflavin	mg	1.9	0.9	2.4	0.4	1.3	2.2	0.1	1.1	3.5	0.6	1.3
C Ascorbic Acid	mg	64.6	38.0	93.3	13.8	40	72.3	27.8	40	132.8	28.8	40
D Calciferol	mcg	4.03	2.96	2.7	1.5	10	2.3	1.8	10	2.6	0.0	10
E Tocopherol	mg	9.3	5.9	4.4	2.0	>4	1.5	1.4	>3	4.5	0.2	>4
Minerals												
Ca Calcium	mg	908	325	938	52	700	907	93	700	1377	308	1000
Na Sodium	mg	4096	1286	4534	847	1600	4208	268	1600	3912	706	1600
Fe Iron	mg	15.9	4.9	21.7	4.3	8.7	16.4	0.2	14.8	16.9	1.4	11.3

^aMales 19-50 years; ^bFemales 19-50 years; ^cMales 15-18 years -Department of Health (1991)

The amount of energy provided by macronutrients, (fat, protein and carbohydrate) (Figure 3), with the exception of fat in the female prisons, also compare favourably with the recommendations. The female figure is high, primarily because of the large number of fried potato dishes offered.

Figure 3. Contribution (%) of Macronutrients to Energy from Standard Diets



[¶] Department of Health (1991)

Healthy Diet Options

One issue that arose during the second study was the interpretation of the term healthy diet. In many cases the rationale for using the term 'healthy option' was primarily based on catering officers' experience, but when asked what those criteria were, the answer was invariably fat content. Even then, the basis on which fat content was calculated was rather arbitrary and far from clear. Others based their decision on information from suppliers and if a supplier labelled a ready-made dish as 'healthy', then this was annotated on the menu. It is perhaps not surprising that some dishes were incorrectly indicated.

Associating a healthy diet with what were perceived as low-fat dishes and perhaps salad items, had a limiting effect on menu choice. There are many 'healthy' dishes, which are both popular and do not necessarily rely on salads, and these could be a welcome addition to the menu.

Menu Balance

The prison catering service has progressed since the introduction of the pre-select menu shortly before the first study. In all prisons visited, menus have now been structured in such a way as to provide inmates with the opportunity to select from a range of different meals. Hence if prisoners wished to eat vegetarian one day, Halal the next and then the 'healthy eating' option, they had the opportunity to do so.

In general, all prisons have now attempted to embrace the Balance of Good Health model (Food Standards Agency (2001) and to provide a nutritionally balanced, healthy diet, although some were more successful than others. Dishes were mainly traditional with the emphasis on starchy, high carbohydrate foods, a menu pattern not dissimilar to that seen during the Second World War, as a result of rationing. Conversely, a number of dishes, including burgers and pies, are purchased frozen, ready made and are an extremely convenient and cost effective means of providing an entrée. Even so, care must be taken to monitor their usage as historically, they tend to be high in salt and often fat and may contain low-quality mechanically recovered meat.

Some prisons rely heavily on boiled and mashed potatoes, whilst others continue to serve high fat options. There are probably in excess of 150 potato dishes, many of which are 'healthy'. Dishes, such as Duchesse and Macaire, which could be finished in the oven, and retain their healthy profile, might be considered.

Fresh fruit was available in all prisons but with some exceptions, this was primarily apples, oranges and bananas although some prisons have introduced melons and peaches. Wherever possible, other seasonal, perhaps local, fruit might be sourced thereby increasing variety and tempting consumption. There is also a heavy reliance on tinned and frozen vegetables and although these are not necessarily nutritionally inferior, in season fresh items have the ability to increase the range of produce offered. Fish is regularly served, but this tends to be repetitive, and included mainly in sandwiches/rolls and salads. Here, there is a great reliance on Tuna, always tinned, which is not classified as an oily fish².

² "Fresh Tuna is an oily fish and is high in omega 3 fatty acids. But when it's canned, these fatty acids are reduced to levels similar to white fish. So although canned tuna is a healthy choice for most people, it doesn't count as an oily fish" – Food Standards Agency, www.eatwell.gov.uk/healthydiet/nutritionessentials/fishandshellfish/?view=prin... Accessed 17 June 2005.

Summary, conclusions and recommendations

This research has examined the prison foodservice provision in England using two major studies conducted in 16 prisons (12 male, 2 female and 2 YOIs).

Resulting from these studies, it can be concluded that overall prisoners are provided with a high standard of food which, with some exceptions, enables them to consume a healthy, nutritionally balanced diet. In the second study it was shown that prisons have attempted to provide meals that conform to the Balance of Good Health model but menus are not always correctly annotated and some dishes are not as healthy as they could be. Overall, prisoners had access to a range of healthy food options which could be supplemented by other items bought from the prison shops.

In so far as the menu is concerned, further recommendations include:

- Offering fruit and dessert rather than fruit or dessert.
- Incorporating a proportion of wholemeal flour in made-up dishes.
- Including brown rice in selected dishes.
- Using a greater variety of fish and fish dishes, particularly oily fish.
- Purchasing lower fat/lower salt ready-made foods, where these exist.

References

- BLADES, M., 2001. Food and nutrition in the prison service, *Prison Service Journal*, 134, 46-48.
- CARLSON, B.L. and TABACCHI, M.H., 1988. Lots of vitamin C in vegetables during the foodservice cycle. *Journal of the American Dietetic Association*. 88(1). 67.
- CONDON, L., HEK, G. and HARRIS, F., 2007. A review of prison health and its implications for primary care nursing in England and Wales: the research evidence. *Journal of Clinical Nursing*. 16. 1201-1209.
- DEPARTMENT OF HEALTH., 1991. Report on health and social subjects, 41. Dietary reference values for food energy and nutrients for the United Kingdom. London. HMSO.
- EDWARDS, J.S.A and MEISELMAN, H.L., 2005. The influence of positive and negative cues on restaurant food choice and of food acceptance. *International Journal of Contemporary Hospitality Management*. 17(4). 332-344.
- ENGELL, D. et al., 1990. The effects of social influence on the food intake. Paper presented at the Society for Nutrition Education Annual Meeting, Anaheim, California.
- FAMILY FOOD., 2004. A report on the 2003-04 Expenditure and Food Survey. A National Statistics Publication by DEFRA. <http://statistics.gov.uk> accessed 21 August 2005
- FOOD STANDARDS AGENCY, 2001. The Balance of Good Health. London. FSA.
- GODDERIS, R., 2006. Dining in: the symbolic power of food in prison. *The Howard Journal*. 45(3) 255-267.
- FSA., 2002. McCance and Widdowson's the composition of food. 6th ed. Royal Society of Chemistry. Cambridge.
- HARRIS, F., HEK, G. and CONDON, L., 2006. Health needs of prisoners in England and Wales: the implications of prison healthcare of gender, age and ethnicity. *Health and Social Care in the Community* 15(1). 56-66.
- HM GOVERNMENT AND DOH (Departmental of Health)., 2005. Choosing health. Making healthy choices easier. National Health Service. p 129.

- HOLLAND, B. et al., 1991. McCance and Widdowson's, the composition of foods. 5th Ed. The Royal Society of Chemistry and Ministry of Agriculture, Fisheries and is Food. Cambridge. Plus supplements.
- NAO., 2006. HM Prison Service. Serving time: prisoner diet and exercise. The Stationery Office. London.
- NAO., 1997. HM Prison Service. Prison catering. Report by the Comptroller and Auditor General, National Audit Office. London. The Stationery Office.
- SMITH, C., 2002. Punishment and pleasure: women, food and the imprisoned body. The Sociological Review. 50(2) 197-214.
- TOMLINSON, M.H., 1978 'Not an instrument of punishment': Prison diet in the mid-nineteenth century. Journal of Consumer Studies and Home Economics, 2. 15-26.
- WALMSLEY, R., 2007. World Prison Population List 7th ed. Summary available at: <http://www.kcl.ac.uk/phpnews/wmview.php?ArtID=1635> accessed 15 October 2007