

PRISONERS WOMEN AND CHILDREN – FROM NUTRITIONAL PERSPECTIVE

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ABSTRACT

The objective of present study was to evaluate diets of prisoners' women and children in Pakistan. Data on dietary scales were collected from Pakistan Prison Rules (PPR). Nutrients were calculated from these dietary scales using food composition tables. A survey of PPR indicated that for prisoner non-pregnant non-lactating (PNPNL) women foods like milk (58 g), tea leave (2.5 g), sugar (29 g) and wheat flour (58 g), pulses (43 g), vegetables (56 g) vegetable ghee (12 g) salt (7 g), turmeric (0.58 g), garlic or onion (2.16 g) and chillies (1.16 g) are sanctioned. The prisoner pregnant (PP) and prisoner lactating (PL) women get some extra foods in addition to those sanctioned for PNPNL women. For PP women the additional foods sanctioned are milk (467 g) and sugar (29 g), while for PL women the additional foods are milk (700 g), fresh fruits (233 g) and fresh vegetables (233 g). Children (<1 yr) get milk (467 g), sugar (29 g) and children (> 1 yr) get milk (467 g), sugar (29 g), rice (117 g), pulses (29 g) and ghee (12 g). Data on % adequacy of nutrients were: protein 175, energy 123, Ca 165 and Fe 66 % (for PP women); and 148, 128, 63, and 141%, respectively for PL women. Percent adequacy of these nutrients for the children (< 1 yr) meals were 1.6, 63.3, 3.9, and 7.4 %, respectively; while for children (>1 yr) meals were 76, 42.6, 7.6, and 10 %, respectively. In conclusion, the diets of prisoners' women were insufficient in Fe and those of children were insufficient in protein, energy, Ca, and Fe. There is a need to include rich protein, iron and calcium sources in their daily diets.

INTRODUCTION

The diet of women and children prisoners is an issue of concern. In all countries, women constitute a small fraction of the total prison population – the world average being 4 percent (Taylor, 2004). However, this percentage has been increasing in recent years. Even in developed countries, it has more than doubled in the last six years (YWCA, 2001) and only in Spain; the number has increased almost 800% between 1980-94 (Blanco, 2001). Data around the world show that most of the women prisoners are mothers (Fawcett Society Commission on Women and the Criminal Justice System, 2003; Owen, 2003; Howard, 2003), which implies significant health care to be considered. Estimates of the percentage of pregnant women in prisons and jails range from 4-9 percent, which must be understood as a high-risk situation, both medically and psychologically, for inmate women and their children. The deficiencies in the correctional response to the needs of pregnant inmates include lack of prenatal and postnatal care, including nutrition (Taylor, 2004). Women prisoners in Hyderabad, India, reported complaints of low energy level in diet leading to other associated complications (Shankardass, 2001). Women frequently enter jails and prisons in poor health, and they experience more serious health problems than do their male counterparts. Their poor health is often due to a number of factors including inadequate nutrition (Bloom et al 2003). In countries like Pakistan, where extremely poor state of female and child nutrition exists (Pakistan Demographic Survey, 2003; Pakistan Nutrition Surveys, 1977, 1988, 2003; Pakistan Integrated Household Survey, 2003), nutritional care of these population groups in prison becomes even

more important. Female offenders represent a growing percentage of prisoners' population in Pakistani jails. There have been studies showing female and children prisoners had increased in number since 1980 (Auolakh, 1986; Jahangir and Jilani, 1990; Sumar and Naqvi, 1988; Mumtaz and Shaheed, 1989). It is claimed that pregnant women are not provided medical attention or special food in prison. However, data regarding the nutritional sufficiency of women and children prisoners is fragmentary in Pakistan. The present study was undertaken to find out the nutritional composition of dietary scales for women and children prisoners and to evaluate them for their nutritional adequacy.

MATERIALS AND METHODS

The dietary scales of female and children prisoners, given in Pakistan Prison Rules (PPR), were surveyed. Data about the ingredient composition of morning, midday and evening meals was used for calculation of nutrients and energy of these three large meals in a day. Nutrients from these dietary scales were calculated using various food composition tables (Hussain, 1986; Gopalan, 1996). Our calculations were for all seven days of a week and nutrients and energy intake for a single day were calculated simply by dividing the total intake for a week by the number of days in a week. Four types of pulses are cooked, alternatively, for midday meals and the same is true for preparing evening meals except the fact that beef is also included twice a week for evening meals. For, our convenient of calculation, we used the average chemical composition of four types of pulses for calculating the chemical composition of the whole

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meal. No specific vegetables or fruit are mentioned to be served on a particular day but in practice, seasonal vegetables and fruits are served. Thus calculations were made on the basis of average chemical composition of such common vegetables and fruits.

The yield factor method (YFM) and the retention factor method reported by Powers *et al.*, (1989) were used for calculation of nutrients from recipes. Rand *et al.* (1991) has provided the detailed procedure for these calculations. Energy was calculated from protein, fat, and carbohydrate using the Atwater method as described by Merrill *et al.* (1973), which is: Energy (kcal) = (4 kcal/g protein 1 g protein) + (9 kcal/g fat 1 g fat) + (4 kcal/g carbohydrate 1 g carbohydrate).

RESULTS AND DISCUSSION

Meal Patterns

Three meals in a day i.e., morning, mid day and evening meal, is the general protocol for all prisoners. Morning, mid day and evening meals for prisoner *non-pregnant non-lactating* (PNPNL) women contain: milk (58 g), tea leave (2.5 g), sugar (29 g) and wheat flour (58 g); while for each midday and evening meals the foods are: wheat flour (26 g), pulses (43 g), vegetables (56 g) vegetable ghee (12 g) salt (7 g), turmeric (0.58 g), garlic or onion (2.16 g) and chilies (1.16 g). Four kinds of pulses are cooked alternatively for mid day and evening meals in a week. Pulses are sanctioned 12 times (for 7 mid day and 5 evening meals) in a week, while for the remaining 2 times in a week; beef (58 g) for evening meals is sanctioned. No pulse is cooked when beef is cooked. Vegetables are cooked every 2 times a day but in combination with pulses or beef. No specific vegetable is mentioned for a particular day; however, seasonal vegetables available locally are cooked. Fruits are sanctioned to the pregnant and lactating women. Like vegetables, no specific fruit is mentioned and seasonal fruits locally available are served.

The prisoner pregnant (PP) and prisoner lactating (PL) women get some extra foods in addition to those sanctioned to PNPNL women. For PP women the additional foods sanctioned are milk (467 g) and sugar (29 g), while for PL women, the additional foods are milk (700 g), fresh fruits (233 g) and fresh vegetables (233 g). Children < or of 1 year get milk (467 g) and sugar (29 g) and children > 1 year get milk (467 g), sugar (29 g), rice (117 g), pulses (29 g) and ghee (12 g).

Percent adequacy of nutrients of the dietary scales

Percent adequacy of each of four nutrients was calculated dividing the total nutrient content by the value of RDA for that nutrient and multiplying with 100. In PPR dietary scales for children are given in accordance to their age. The dietary scales for women, however, are not given with reference to their weight or age. To make the calculation and comparison convenient, we assumed a reference woman (46 Kg body weight) and the % adequacy of nutrients were calculated on the assumption of RDA's for this reference woman.

Nutrient densities of various meals for PNPNL, PP, PL women and children (< and above 1 year) are shown in table 1 & table 2. The nutrient density of PNPNL women meals were 83 g protein, 2772 Kcal energy, 502 mg Ca, and 34 mg Fe. The nutrient density of PP women meals were 116 g protein, 3089 Kcal energy, 1983 mg Ca and 54 mg Fe. The nutrient density of PL women meals was 101 g protein, 3380 Kcal energy, 1363 mg Ca and 16 mg Fe. The nutrient density of children (< 1year) meals were 0.35 g protein, 759 Kcal energy, 32 mg Ca, and 0.8 mg Fe. The nutrient of children (> 1year) meals were 19.6 g protein, 533 Kcal energy, 61 mg Ca and 1.1 mg Fe. The % adequacy of protein, energy, Ca and Fe for the PNPNL women meals were 148, 128, 63, and 141%, respectively. The % adequacy of protein, energy, Ca and Fe for the PP women meals were 175, 123, 165, and 66 %, respectively. The % adequacy of protein, energy, Ca and Fe for PL women meals were 148, 128, 63, and 141%, respectively. The % adequacy of these nutrients for children (< 1 year) meals was 15, 63, 4, and 7 %, respectively. The % adequacy of protein, energy, Ca and Fe for the children (> 1 year) meals were 76, 42, 8, and 10 %, respectively.

The % adequacy of nutrients of women prisoners shows enough energy and protein. However, the protein seems to chiefly come from plant sources, which is inferior in quality. Further more, % adequacy of iron in women diet is inadequate and it is further worrisome as much of its part is from non-haeme sources (pulses and cereals) and hence must be poor in nutritional quality.

The situation is more serious in case of children. Their diets seem to fail in providing nutrients adequately (Table-II). There is a need to include protein rich foods in their daily diets. The U.N. Rules for the Protection of Juveniles state that juveniles shall receive food "of a quality and quantity to satisfy the standards of dietetics, hygiene, and

health (UNO, 1990). The Pakistan Prison Rules prescribe the meals that prisoners are to be provided with considerable specificity. Prisoners are entitled to 58 grams of milk every day at breakfast, along with *roti* (unleavened bread) and tea (PPR, Rule 472). Their midday and evening meals are supposed to consist of *dal* (lentils), vegetables, and *roti*; twice a week, beef is to be substituted for *dal* at the rate of 58 grams per prisoner (PPR, Rules 473(I) and 473(iii)).

Women prisoners are often the sole or primary carers for small children: it implies that the imprisonment of the mother cannot be considered in isolation. It is common for babies and young children to be taken into prison with their women. This may well be preferable to separating them. However it also raises complex issues, particularly those related to nutrition. Data available from the United Kingdom for 2002 illustrate a typical scenario for imprisoned women in developed countries: 66 % of female prisoners were mothers; 55 percent of female prisoners had at least one child under 16, over a third of the women had one or more children under 5 years old; 34 percent of women were single parents before prison, with the proportion rising to 43 percent for those who expected to be single parents on release. Estimates based on the survey results suggest that on average, 4,500 children under 16 had a mother in prison during 1998 (Statistics on Women and the Criminal Justice System, 2002). Diets of women and children are often imbalanced both in terms of quantity and quality. In Andhra Pradesh, India, a research study showed that children prisoners did not like their food for it was 'adult food' and that milk (200ml) was given in the morning; and eggs once a fortnight. This very nominal food is insufficient to meet the nutritional requirements (Shankardass, 2001). Women who are pregnant or breastfeeding in prison also have particular needs. Adequate healthcare, both preventive and curative, is of primary importance for both the mother and child. A former prisoner in Jamaica reported that pregnant female prisoners were

denied any sort of vitamin supplement (Prisoners Abroad News, 2001). Elderly women prisoners need particular health and nutritional care. It has been noted that elderly prisoners may suffer from chronic ill health; emphysema, arthritis, cardiac, hypertensive disorders, osteoporosis, cancer, stroke etc and that prisoners are physically, on average, ten years older than their chronological ages (Wahidin, 1991). Available data around the globe suggest that jail inmates are at increased risk of contracting pulmonary tuberculosis (Hussain et al. 2003; Aerts, 2000; Rutta, 2001; Coninx, 2000). Factors such as crowding, mal-nutrition and limited access to health care services put prison inmates at high risk. Children and adolescents are even more vulnerable (Rutta, 2001). Balanced diet, particularly to women and children prisoners will help maintain their normal physiology. Balanced nutrition also has good effects on the attitude development of children, in particular. In a study by Bernard et al (2002) it was shown that antisocial behavior in prisons, including violence, are reduced by vitamins, minerals and essential fatty acids with similar implications for those eating with poor diets in the community. Findings of a previous study suggest a need to improve dietary education as well as providing more nourishing diets. Such dietary education has proved more effective at reducing recidivism than conventional probation programmes (Gesch et al. 2002). As women often come to prison with poor health as indicated by a number of previous studies (Arbour, 1996; Shankardass, 2001; Women Health Issues, 2001; Chirva, 2001; Bellamy, 2001; Dankwa, 2000; Howard, 2003; Jonas 2003), therefore maximum care must be provided to them, particularly, in terms of good nutrition.

CONCLUSION AND RECOMMENDATIONS

It is concluded that the dietary scales for women and children prisoners are not nutritionally balanced. It is recommended that the scales be reviewed in the light of present day nutrition knowledge. Further work on nutritional intake of prisoners is suggested.

Table I: Nutrient Intake and % adequacy of nutrients of pregnant and lactating women prisoners

Nutrients	PNPNL			PP			PL		
	RDA	N.D.*	%Adequacy	RDA	N.D.*	%Adequacy	RDA	N.D.*	%Adequacy
Protein (g)	^a 56	83	148	^a 66	115.6	175	82	101	123.2
Energy (kcal)	^a 2165	2772	128	^a 2510	3089	123	2710	3380	124.7
Ca (mg)	^b 800	502	63	^b 1200	1983	165	^b 1200	1363	113.6
Fe (mg)	^c 24	34	141	^c 30	19.82	66	^c 38	16	42

Table II: Nutrient Intake and % adequacy of nutrients of Children prisoners

Nutrients	Children < 12 months			Children above 12 months		
	RDA	N. D.*	%Adequacy	RDA	.D.*	%Adequacy
Protein (g)	^a 24	3.5	14.6	^a 26	19.6	75.4
Energy (Kcal)	^a 1200	759.3	63.3	^a 1250	532.5	42.6
Ca (mg)	^b 800	31.9	3.98	^b 800	61.1	7.6
Fe (mg)	^c 11	0.81	7.4	^c 11	1.1	10

For Table I and Table II. * N.D. = Nutrient density: which here it refers to the nutrients present in the per day dietary scale of the prisoners.

a = RDA from Hussain T. (1986);

b = RDA's from Food and Nutrition Board, Institute of Medicine, Washington D.C.: National Academy Press; 2001; c = RDA's from King. 1992. Note.: The RDA for iron is based on diets of medium availability.

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