Nutritional status and dietary intake pattern of male drug addicts undergoing rehabilitation

### Abstract

**Background:** Drug addiction is now prevalent everywhere in Bangladesh; in the house, streets, in the workplace, parks, slums, markets and even in educational institutions both in rural and urban areas. Although there is no precise figure of the drug dependent people, it is estimated that around 4.0 million people, mostly youth are dependent to some form of drugs, and increased trend among all kinds of people is alarming.

**Objective:** This study was conducted to explore nutritional status and dietary intake pattern of male drug addicts undergoing rehabilitation.

**Methodology:** This was a cross sectional descriptive study carried out among male drug addicts who were admitted for detoxification and rehabilitation therapy, counseling and motivation. A total of 100 samples were collected randomly with face to face interview by using pre-tested semi structured questionnaire.

**Result:** Mean age of respondents was 34.02±7.12 years. The prevalence of malnutrition among the respondents was assessed by body mass index. Fifty four percent of the drug addicts were suffering from varying degrees of Chronic Energy Deficiency (CED) of which 16%, 09%, and 29% were in CED-111, CED-11 and CED-1 respectively whereas 46% of the addicts were normal. It was observed that more than half of the respondents (56%) were irregular to take three meals in a day and 44% were taking their meal regularly. Mean energy intake of below 30 years of age was 2179 kilocalorie and it met 78.9% of recommended dietary allowances. Mean energy intake of 30 and above years of age was 2420 kilocalorie and it met 86.19% of recommended dietary allowances.

**Conclusion:** Nutritional status of drug addicts was not satisfactory. Further large scale study may be recommended.

**Keywords:** nutritional status, diet intake pattern, drug addicts

### Abbreviations:

CED, chronic energy deficiency; DAM, dhaka ahsania mission

### Introduction

Though Bangladesh is not a drug producing country, but due to its geographical location in between the golden and crescent triangle and passing of the crescent ways through it, here the problem of drug abuse has got epidemic form that destroys the productive forces creating special imbalances through narco-terrorism and handicaps the development process. Consequently it has now turned into a wide drug market for the drug traders having national, regional and international roots and during last one and half decade, it has flooded over the countries through a compact network of distributive channel. This flood appeared so abruptly that the traditional values and inherent social security system even could have any time and scope to develop any preventive measure. Drug addiction is now prevalent everywhere in Bangladesh; in the house, streets, in the workplace, parks, slums, markets and even in educational institutions both in rural and urban areas. Although there is no precise figure of the drug dependent people, it is estimated that around 4.0 million people, mostly youth are dependent to some form of drugs, and increased trend among all kinds of people is alarming. Virtually all segments of society are severely affected by this problem. Near about 25 thousand hundred people are drug addicted and among them about 22 thousands are addicted in Dhaka city. In Bangladesh about 80 percent of the drug addicts are adolescents and young men of 15 to 30 years of age. Drug addiction is a lifestyle disease. In recent times it has become a universal social and public health problem. No nation is immune to the horrendous consequences of illicit drug use. Devastation of family and social values has reached unprecedented levels. It has become a challenge to traditional and civic human norms and values. Emergence of illicit drug use has resulted in an explosive social violence around the world. Productive young adults are wading into the sea of drug experimentation. Drug addiction induces immunonutritional deficiency. Use of illicit drugs produces multiple nutrient deficiencies or malnutrition, which is the most common cause of immunodeficiency. Immunoineptence is a sensitive and functional determinant of nutritional status because it is altered even before the onset of clinical symptoms of malnutrition. Illicit drugs are themselves immunosuppressive. Use of these drugs undermines appetite, affects food habits, leading drug addicts to crave ‘empty-energy’, potentially nutrient-deficient foods and causes micronutrient deficiency. Thus, the use of illicit drugs produces immunonutritional deficiencies, and influences susceptibility to infectious agents, including HIV infection. In addition drug addicts’ behavioral risk factors such as needle-sharing, unprotected sex, sex with multiple partners, etc. ranks them at the highest risk of HIV infection. Because of its geographical position in the middle of the world’s two largest illicit drug-producing regions, the ‘Golden Triangle’ and the ‘Golden Crescent’, Bangladesh is being used as a trans-shipment point for the international drug markets. This has resulted in severe infliction of drug addiction in Bangladesh, which is rising with time. As in the developed world, illicit drug use amongst young adults is also...
soaring. It has also been addressed as a social and health problem. However, despite a focus on its fatal consequences worldwide, until recently research on illicit drug use has received little attention in Bangladesh. In continuation of our previous attempts, we report here the nutritional status of drug addicts and influence of their drug habit and lifestyle factors on their nutritional indices.

**Methodology**

**Study design**

This was a cross sectional study.

**Study population and area**

This study was carried out among male drug addicts who were admitted for detoxification and rehabilitation therapy, counseling and motivation at Dhaka Ahsania Mission (DAM).

**Study sample and sampling method**

For the purpose of this study, 100 drug addicts were selected randomly from DAM.

**Study Period**

This study was conducted from March, 2011 to December, 2011.

**Tools**

A semi structured questionnaire was used to conduct this study. Questionnaire includes socio-demographic conditions, anthropometrical information, twenty four hour dietary intake and dietary habit on some selected food item.

**Data collection methods**

Data was collected by face to face interview from the respondents.

**Data analysis**

The data were analyzed using SPSS/PC (version 12). The raw data recorded in questionnaire was coding first. The coded data were entered in to computer in SPSS program. Finally all required analysis was done by simple cross-tabulation.

**Results**

**Socio-economic characteristics of the respondents**

Table 1 showed distribution of the respondents by age. About 30% were in the 26-30 years age group. About 10% were found in the age group of 20-26 years. Besides, 23% were in the age group of 31-35 and 21% were found in 36-40. The overwhelming more than 50% of the respondents were married and 44% of them unmarried. Table showed that 35% of the respondents had passed secondary classes while 19% were completed primary education. Almost 21% respondents were found to sign, read and write only. Moreover, 17% were illiterate whereas only 8% respondents had graduation degree and higher secondary certificate examination. Regarding occupation, 36% of the respondents had small business. 14% respondents were Rickshaw puller and driver. Day laborer was 5% and 6% were jobless. 10% respondents were found to picking paper and remaining 10% were involved in other function. Study shows 07% respondents had no income. 36% of the respondents were found in 4100-8000/- income group and 28% had income within 4000/-. About 40% of the respondents were addicted due to their friend’s incitement and 2% were addicted due to self curiosity. 1% were addicted intentionally and carelessness of their family member. 8.0% were addicted due to their surrounding environment. 24.0% were addicted during buying drugs for other. 9% were addicted due to more than one reason whereas 10.0% were for other reasons. In case of the age when they first took drug, 58.0% of the respondents were found in the 13-18 years age group whereas 12.0% were in the 8-12 years age group. 30% respondents were found in the 19 and above year’s age group.

| Table 1 | Socio-economic characteristics of the respondents (n=100) |
|---------|----------------------------------------------------------|
| **Items** | **Frequency** | **Percentage (%)** | **Mean±SD** |
| Age | | | |
| 20-25 | 10 | 10.0 | |
| 26-30 | 30 | 30.0 | |
| 31-35 | 23 | 23.0 | 34.02±7.12 |
| 36-40 | 21 | 21.0 | |
| 41 & above | 16 | 16.0 | |
| Marital Status | | | |
| Married | 56 | 56.0 | |
| Unmarried | 44 | 44.0 | |
| Educational Level | | | |
| Illiterate | 17 | 17.0 | |
| Can sign, red, write | 21 | 21.0 | |
| Primary | 19 | 19.0 | |
| Secondary | 35 | 35.0 | |
| Graduate | 08 | 8.0 | |
| Occupation | | | |
| Rickshaw Puller and Driver | 14 | 14.0 | |
| Day labor | 05 | 5.0 | |
| Small business | 36 | 36.0 | |
| Service | 19 | 19.0 | |
| Jobless | 06 | 6.0 | |
| Paper picking | 10 | 10.0 | |
| Others | 10 | 10.0 | |
| Monthly Income | | | |
| No income | 07 | 7.0 | |
| Up to 4000 | 28 | 28.0 | |
| 4,000-8,000 | 36 | 36.0 | |
| 8,000-12,000 | 18 | 18.0 | |
| > 12,000 | 11 | 11.0 | |
| Reason for Addiction | | | |
| Self curiosity | 2 | 2.0 | |
| Friend incitement | 40 | 40.0 | |
| Intentionally | 1 | 1.0 | |
| Carelessness of the family | 1 | 1.0 | |
| Environmental | 8 | 8.0 | |
| During buying drugs | 5 | 5.0 | |
| Emotional | 24 | 24.0 | |
| Self curiosity & Emotionally | 9 | 9.0 | |
| Others | 10 | 10.0 | |
| Age of Taking First Drug | | | |
| Child hood (8-12) | 12 | 12.0 | |
| Teen age (13-18) | 58 | 58.0 | |
| 19 & above | 30 | 30.0 | |

**Anthropometric measurement of the respondents**

Table 2 shows that the mean Ht. and Wt. of the respondents were 163.38 cm and 50.19 kg respectively. The prevalence of malnutrition...
among the respondents was assessed by body mass index (BMI). 54% of the drug addicts were suffering from varying degrees of CED of which 15%, 69%, and 29% were in CED-I11, CED-II and CED-I respectively. 46% of the addicts were normal.

Table 2 Mean height, weight and prevalence of malnutrition among the respondents (n=100)

| Parameter            | Number | Percent (%) | Mean±SD |
|----------------------|--------|-------------|---------|
| Average Height(cm.)  | 163.38±7.48 |
| Average Weight(kg.)  | 50.19±7.72  |
| BMI(kg/m²)            | 18±2.64   |
| <16.0 (CEDIII)severe | 15      | 15.0        |
| 16.0-16.99(CED-II)moderate | 09      | 9.0         |
| 17.0-18.49(CDE-I)mild | 29      | 29.0        |
| 18.5-24.99            | 46      | 46.0        |
| 25-29.99(over wt.)    | 01      | 1.0         |
| Total                 | 100     | 100.00      |

Distribution of the respondents by taking three meals regularly in a day

Table 3 shows daily frequency of food intake of the respondents. It was observed that, more than half of the respondents (56%) were irregular to take three meals in a day and 44% were taking their meal regularly.

Table 3 Dietary intake pattern of the respondents (n=100)

| Items                          | Frequency | Percentage |
|-------------------------------|-----------|------------|
| Taking three meal regularly   |           |            |
| Yes                           | 44        | 44.0       |
| No                            | 56        | 56.0       |

Frequencies of food items

Period | Fruits(%) | Egg/ Milk(%) | Meat/ Fish(%) | Vegetable(%) |
-------|-----------|-------------|---------------|--------------|
1-2days | 60        | 52          | 36            | 20           |
3-4day  | 7         | 4           | 33            | 47           |
>4days  | -         | -           | 17            | 23           |
Never taking | 33 | 44 | 14 | 10 |

Daily intake energy

Age(years) | Mean±SD | Number | RDA (Kcal) | Intake% of RDA |
----------|---------|--------|------------|----------------|
Below 30  | 2179.74±1063.22 | 26  | 2763 | 78.9 |
30 and above | 2420.34±935.01 | 74  | 2807 | 86.19 |

Distribution of the respondents by consumption frequencies of selected food items

In the table 33.60% of the respondents consumed fruits 1-2days weekly whereas, 7% consumed 3-4days in a week and 33% did not consume fruit in a week. 52% of the respondents consumed egg and milk 1-2days and 44% did not consume in a week. 36% of the respondents consumed meat and fish 1-2days in a week, 33% consumed 3-4days 17% consumed more than 4days and 14% never consumed. A good parents of the respondents consumed vegetables 3-4days and 10% never consumed vegetable in a week.

Daily mean intake of energy by the respondents in relation to RDA and% of RDA intake

In Table 3 it was seen that mean (±SD) energy intake of the respondents were below the RDA. Mean (±SD) Energy intake of below 30years of age were 2179 (±1063) and it met 78.9% of RDA. Mean (±SD) energy intake of 30 and aboveyears of age were 2420 (±935) and it met 86.19% of RDA. Table 4 showed that 46% of the respondents met their energy requirement but protein requirement were fulfilled in 74% addicted people. Iron intake was satisfactory and fulfilled by more than 80% of the respondents. Vitamin C intake was alarming and no respondents were found to meet their daily need.

Table 4 Distribution of the respondents by their meting requirements of different nutrients (n=100)

| Nutrients      | Respondents meeting requirement | Respondents below requirement | Total |
|----------------|--------------------------------|------------------------------|-------|
| Energy(Kcal)   | 46.0                           | 54.0                         | 100   |
| Protein(g)     | 74.0                           | 26.0                         | 100   |
| Fat(g)         | 6.0                            | 94.0                         | 100   |
| Calcium(mg)    | 15.0                           | 85.0                         | 100   |
| Iron           | 87.0                           | 13.0                         | 100   |
| Carotene(mcg)  | 45.0                           | 55.0                         | 100   |
| Vit B1(mg)     | 75.0                           | 25.0                         | 100   |
| Vit B2(mg)     | 24.0                           | 76.0                         | 100   |
| Vit C(mg)      | -                              | 100                          | 100   |

Discussion

Of the studied drug addicts, more than one third (38%) had mild to moderate BMI, and 15% were suffering from severe malnutrition. Lowered BMI and nutrient deficiencies had also been previously reported for drug addicts. The reduced nutritional indices may be possibly because of the consumption of poor quality nutrient-deficient foods. The clinical signs of nutrient deficiency, particularly, were reported to be associated with micronutrient deficiencies, which have also been documented for drug addicts. Study showed that 44% took 3 time meal everyday. Two third (60%) and half (50%) respondents took fruits and milk 1-2days weekly where as almost half (47%) respondents take vegetables 3-4days weekly. However the present study revealed that drug addicts had moderate nutritional status. Mild multiple malnutrition or nutrient deficiency was prevalent among them. In addition to illicit drug use, some of the socioeconomic factors contributed to affect their nutritional indices. Since malnutrition or nutritional deficiency was the main cause of immunodeficiency that may influence susceptibility to HIV infection, an efficient careful nutritional intervention would be of particular importance in the clinical management of drug addicts, as well as of HIV-infected or AIDS patients.

Conclusion

Nutritional status of drug addicts is a vital issue as it increases the risk of HIV/AIDS. So it is very necessary for any detoxification
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program to consider the nutritional status as a part of rehabilitation program. Further study is needed by considering the immunological assessment.

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Conflict of interest
Author declares that there is no conflict of interest.

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