A Comparative Study to Assess the Self-Reported and Observed Practices Regarding Quality of Food among the Mess Workers of Baru Sahib, Sirmour (HP)

Jyoti Thakur¹, Beant Kaur²

Abstract

The practice of improper food handling and lack of knowledge in food hygiene among food handlers can lead to inadequate nutrition, malnutrition and nutritional deficiencies. This study compared self-reported and observed practices regarding mess menu of Baru Sahib. Comparative survey design was adopted to get data from 50 mess workers using consecutive non-probability sampling technique. For assessing practice, self-reported checklist, observation checklist and mess menu aided by a structured interview and direct observation technique was used. Data was analysed using SPSS version 23 for descriptive and inferential statistics. About 88 percent of mess workers reported good practice and only 12 percent reported average practice. No one reported poor practice in food handling in messes. Good practice was not observed in any of the messes. Out of six messes, three messes namely University mess, Nursing mess and Academy mess were found to follow average practice. Poor practices regarding food handling were noticed in remaining three messes namely Main mess, C4 mess and Langar hall. Among socio-demographic variables, age (0.001) and marital status (0.020) showed association with self-reported practice. Strength of people served with food in mess (0.003), regular inspection in mess (0.003) and source of information (0.012) showed association with self-reported practice. Considering the whole week, average values of carbohydrates, fats, proteins, and energy per day found in SRP menu were 575.2 gm, 40.2 gm, 130.7 gm, 3201 Kcal respectively. Average values of carbohydrates, fats, proteins, and energy per day found in OP menu were 549.4 gm, 37.57 gm, 127.9 gm, 3057 Kcal respectively. SRP menu reported higher carbohydrates, fats, proteins, and energy values than observed practice menu. Both SRP menu and OP menu indicated higher values of carbohydrates, fats, proteins, and energy than RDA values (for moderate workers: women students, 55 kg) of carbohydrates (446.25 gm), fats (30 gm), proteins (55 gm), and energy (2230 Kcal). Over all, mess worker self-reported that they were following good hygiene and healthy food practices while delivering services, but the researchers’ observations were not consistent with self-reporting practices of the mess workers. A variation in self-reported menu and observed menu can be entertained, as per the availability of food items, but the nutritive constituents’ values should not be compromised at any cost.

Researchers visited the mess and observed that mess workers were not following safety guidelines in handling, preparing and distributing food. Also, students used to complain about the mess menu on regular basis. Therefore, the analysis of the food items was required. The researcher wanted to know the gap between observed food practices (OP) or menu and self-reported food practice (SRP) or menu.

Objectives

The study was set with three objectives: (1) To compare self-reported and observed practices followed in messes while handling meals; (2) To determine the quality of food through study of constituents of self-reported menu provided by mess incharge; (3) To analyse the quality of food through study of constituents of observed menu followed in messes.

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Review of Literature

Ebenezer Narbey assessed the knowledge and practice of food safety and hygiene among catering staff of two different Senior High Schools (SHS) in Koforidua in Eastern Ghana. A total of 40 catering staff was selected from two SHS using purposive sampling technique. The results indicated that caterer’s practices of personal hygiene such as hand washing before cooking and regular bathing were both high (95%); their food production practices such as maintaining clean working area and wearing of protective clothing were high (95%). However, most of them (42.5%; 70%) agreed that they kept ready-to-eat food at 20°C and thaw food at room temperature (Bajaj, 2020).

Frank Konishi: A food intake study of 98 soldiers was conducted under an ad libitum regimen for 28 days (Sivaramakrishnan & Kamath, 2012). Daily nutrient intakes were determined for each individual. The mean daily intakes of calories, protein, fat and carbohydrate from all sources were 3669 Cal, 150.7 gm, 162.3 gm, and 296.6 gm, respectively. Ninety-five of the 98 men gained in body weight at an average of 2.03 kg over the 4-week period. A parallel relationship was observed between calorie intake and energy expenditure for the same day. The intake was highest on Wednesday and lowest on Sunday, coincident with the highest and lowest activity levels, during the respective days. By employing individual body weights and calorie intakes (adjusted for weight change) an equation was derived to estimate the calorie requirement for individuals of comparable age, sex and size as follows: E=452.88, W=0.458, where E is the estimated calorie requirement and W the body weight in kg. One of the most significant observations was the high intake of milk which averaged 1537 gm (one and one-half quarts) daily for each man.

Methodology

Quantitative research approach and comparative descriptive research design was used. Research setting included all messes of Baru Sahib (Main Mess, Nursing mess, C4 Mess, University Mess, Langar Hall, and Academy Mess). Consecutive non-probability sampling technique was opted to collect the sample. A final sample size of 50 mess workers was taken. Research tool comprised of three sections.

Socio demographic data of mess workers like name, age, gender, marital status, monthly income, education status, permanent residence, work experience, current health status.

Other study variables: name of mess, work responsibilities/role of worker, strength of people served in mess, person involved in framing weekly menu of mess, culture practices that compromised quality of food, type of fuel used for cooking food, attended any short term training programme regarding quality of food/cooking practices, frequency of inspections in mess regarding assessment of quality of food, source of information regarding quality of food.

Self-reported and observed checklist regarding practice of food handling – A structured checklist was framed by researcher which included 126 items, 60 items of self-reported checklist comprising list of activities reported by the mess workers while handling food and 66 items of observed checklist comprising list of activities performed by mess workers as observed by researcher while handling food. Checklist carried two options (YES and NO). Response ‘NO’ was given zero marks and ‘YES’ was given one marks. A structured interview and direct observation were used as techniques for data collection. A scoring key with minimum score of 0 and maximum score of 60 was utilised for assessing self-reported practice and a scoring key with minimum score of 0 and maximum score of 66 was utilised for assessing observed practices. The tool was validated by five experts from the different nursing specialities. Reliability of self-reported checklist was calculated as 0.9 by split-half method. Therefore, tool was recognised as reliable. Data analysis was done with SPSS software. Descriptive

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<td>42-55</td>
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<td>&lt;41</td>
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Mean ± SD = 63±4.4

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Table 2: Distribution of observed practice regarding food handling (n=6)
Figure 1: Frequency distribution of self-reported practice regarding food handling.

Statistics like mean, standard deviation, frequency percentage and simple computations were used to get the results.

**Pilot study:** After obtaining formal permission from concerned authorities, a pilot study was conducted on five mess workers who were working in nursing hostel mess, Baru Sahib, District, Sirmour (HP). The pilot study was conducted on 19 February and 20 February 2019.

### Results

Table 1 depicts the practices of self-reported checklist in which 88 percent of mess workers reported good practice, 12 percent reported average practice and no one reported poor practice.

Table 2 depicts the observed practices, in which no observation was recorded as good practice. Out of six messes, three (50%) namely University Mess, Nursing Mess and Academy Mess were observed and were found to have followed average practice. In remaining three messes (50%) namely Main Mess, C4 Mess and Langar Hall, poor practices regarding food handling were noticed.

Figure 1 indicates that good practice was not observed in any of the messes. Out of six messes, three messes namely University Mess, Nursing Mess and Academy Mess were found to follow average practice. Poor practices regarding food handling were noticed in remaining three messes i.e. Main Mess, C4 and Langar Hall. Figure 2 shows that SRP and OP values of carbohydrates are almost similar. But when compared with RDA of moderate workers (students, women, 55 kg), it was found to be more than RDA.

Figure 3 depicts that SRP and OP values of proteins are almost similar. But when compared with RDA of moderate workers (students, women, 55 kg), it was more than twice the RDA value. Figure 5 shows that SRP and OP values of fats in whole week are almost similar. But on few days, it was found to be more than RDA of moderate workers (students, women, 55 kg). Figure 6 illustrates that SRP and OP values of energy were almost similar. But when compared with RDA of moderate workers (students, women, 55 kg), it was found to be more than RDA.

### Discussion

#### Food Handling Practice

Self-reported practice: In present study 88 percent of mess workers reported good practice and only 12 percent reported average practice. No one reported any poor practice regarding food handling to be followed in messes. Similar findings were noticed by Ebenezer Narkey in Koforidua in the Eastern Region of Ghana by Ebenezer Narkey. The results indicated that caterer’s practices of personal hygiene such as hand washing before cooking and regular bathing were both high (95%). Again, their safe food production practices such as maintaining clean working area and wearing of protective clothing were high (95%). However, most of them (42.5%; 70%) agreed that they kept ready-to-eat food at 20°C and thaw food at room temperature.

Funmilola Adenike Faremi conducted a study in Nigeria and found that 115 (78.2%) of respondents had satisfactory safety hygiene practices and 28 (19.0%) had unsafe hygiene practices.
Observed practice: Present study shows that good practice was not observed in any of the messes. Out of six messes, three (University Mess, Nursing Mess and Academy Mess) were found to follow average practice. Poor practices regarding food handling were noticed in remaining three messes namely Main Mess, C4 Mess and Langar Hall.

Similar results were shown by Zemichael Gizaw’s study in a substandard food establishment of Gondar town, Northwest Ethiopia which reported low level of food safety practice (good-30.30%, fair-47.60% and poor-22.10%). Rayza Dal Molin Cortese showed that 12 percent of the vendors did not provide ice at the point of sale for perishable ingredients; 95 percent did not wash hands between food and money transactions and restroom breaks; 91 percent did not have hair coverings and 100 percent of the vendors had no access to a water supply. The interviews revealed that 12 percent of the vendors did not provide proper cold holding during transportation; 33 percent did not wash their hands at all, whereas 24 percent only used water to wash their hands; and 33 percent never took the required food-handling course.

Considering the whole week, average values of carbohydrates, fats, proteins, and energy per day found in SRP menu were 575.2 gm, 40.2 gm, 130.7 gm, 3201 Kcal respectively. Average values of carbohydrates, fats, proteins, and energy per day found in OP menu were 549.4 gm, 37.57 gm, 127.9 gm, 3057 Kcal, respectively. RDA values (for moderate workers: women students, 55 kg) of carbohydrates, fats, proteins, and energy are 446.25 gm, 30 gm, 55 gm and 2230 Kcal. Similar findings were found by Irena Colić Barić et al on Croatian university students. It depicted that daily menus on average provided an adequate amount of energy, protein and most micro nutrients: 88.2 percent of daily menus provide a balanced intake of protein,
fat and carbohydrates, 22.5 percent of daily menus provide more than 300 mg of cholesterol, and 58.8 percent have more than 25 gm dietary fibre.

Present study reveals that in SRP menu the energy intake exceeded RDA (female moderate worker) of a value, it was between 545 (2775–2230) to 1320 (3990–2230) Kcal/day in summers; in OP menu, the energy intake exceeded RDA (female moderate worker) of a value comprised between 400 (2629-2230) to 1172 (3402-2230) Kcal/day in summers. For SRP menu, proteins exceeded RDA (female moderate worker) of 41-117.5 percent in summers. And for OP menu, proteins exceeded RDA (female moderate worker) of 61-90 percent in summers. For SRP menu, the daily lipid intake was deficient on Monday (-8.6%) but excess on other days by 26 percent when compared with RDA (female moderate worker). And for OP menu, the daily complex carbohydrate intake was deficient on Sunday (-21.7%) but exceeded on other days by 210.4 percent, when compared with RDA (female moderate worker). For SRP menu, the daily complex carbohydrate intake was deficient on Monday (-9%) but exceeded on other days by 31.2 percent when compared with RDA (female moderate worker).
in excess for F in both periods. The daily complex carbohydrate intake was deficient for M (-25% of LARN), especially in summer, less deficient for (-5% of LARN), these consuming also too much simple carbohydrates (+32% of LARN). The results of the computerised survey were fairly close to the laboratory data and proved that this form of control is sufficiently reliable.

**Nursing Implications**

**Nursing practice:** Nurses should create awareness and education about quality of food among the mess workers residing in the selected mess of Baru Sahib, District Sirmaur, HP, India.

**Nursing education:** Nursing curriculum is responsible for preparing future nurses with emphasis on curative, preventive and primitive health practices.

**Nursing administrator:** Nursing administrator in hospital and in the community can conduct in service education for nurses and health awareness camp for community about mental illness and its consequences.

**Nursing research:** The descriptive survey provides baseline data for the study will be a motivation for budding researches on similar topic on large scale.

**Recommendations**

1. For food handling process, a huge difference was found between self-reported and observed practice. None of the messes were found to have good practices, which indicates a need for improvement of environmental conditions at messes.

2. For mess menu, only macronutrients were calculated with 100 gm of each item of menu. A new study can be done considering the individual menus of all students with macronutrients as well as micronutrients.

3. Therapeutic diets can be assessed for patients in hospitals for proper intake of nutrients.

**Conclusion**

When self-reported and observed practices regarding quality of food were compared, a major difference was found. Mess workers were self-reporting that they were following good hygienic and healthy food practices while delivering services, but our observations were not consistent with the self-reporting practices of the mess workers. When practices regarding provision of food menu items were compared for all nutritive constituents (carbohydrates, fats, proteins and energy) within acceptable limits, it was found that the planned menu (self-reported practice) was showing variations. The food items observed in the daily menu served in mess were at times found to be different than the planned food items in self-reported menu. But when nutritive constituent’s values in the observed menu were compared to the self-reported menu, it was seen that the food items in observed menu had high nutritive constituent values than the RDA. A planned food handling teaching programme should be organised for the mess workers on regular basis. A variation in self-reported menu and observed menu can be entertained, as per the availability of food items, but the nutritive constituents’ values should not be compromised at any cost.

**References**


