

Study of Working Conditions in a Hospital Collective Catering Service in Abidjan in 2025

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Abstract

Introduction: Hospital collective catering exposes workers to various occupational hazards. The objective of this study was to assess the working conditions of staff in the catering department of the Angré University Hospital Centre (UHC) in 2025. **Methods:** This was a descriptive cross-sectional study conducted among catering staff at the Angré UHC. Data were collected using a questionnaire, direct observation of the working environment, and environmental measurements. **Results:** A total of 33 workers participated in the study, with a mean age of 27.7 ± 6.9 years and a female predominance (57.6%). Most participants worked more than 40 hours per week. Cooks accounted for 72.7% of the workforce. Two-thirds of the workers (66.7%) rotated between different workstations. Ergonomic, physical, chemical, biological and psychosocial occupational hazards were identified. The working environment showed several deficiencies, including slippery floors, unsanitary premises, high temperatures (29°C to 38°C), and insufficient lighting (148 to 550 lux). Nearly 61% of workers had experienced an occupational accident. Regarding prevention, no statutory medical examinations had been carried out, personal protective equipment was inadequate or absent, and vaccinations had not been administered. **Conclusion:** Improving working conditions and implementing appropriate preventive measures are essential to protect the health and safety of catering staff.

Keywords

Working Conditions, Collective Catering, Hospital Setting, Occupational Risks

1. Introduction

Collective catering, also referred to as out-of-home catering, encompasses all activities involved in preparing and providing meals to people working and/or living in collective settings (prisons, universities, companies, public administrations, trains, aircraft and hospitals) [1]. In the hospital setting, it is intended for hospital staff, visitors and patients. Hospital collective catering therefore includes meals prepared and served to patients and staff, from breakfast to dinner, including snacks. This sector employs a diverse and often multi-skilled workforce (cooks, assistant cooks, kitchen assistants, butchers, servers, etc.).

Because of the demands of the work environment, employees in this sector are exposed to a wide range of occupational hazards. Indeed, in a hospital catering service in Asia, the overall prevalence of occupational accidents and musculoskeletal disorders (MSDs) was reported to be 35% and 53%, respectively [2]. The physical demands of work, such as working posture, applied force and repetitive movements, have been described by Xu *et al.* as risk factors for the occurrence of MSDs in the catering sector [3]. In addition to occupational accidents and MSDs, hospital catering staff are often exposed to the risk of contracting infectious diseases (listeriosis, tuberculosis, COVID-19, etc.) due to contact with food, patients and healthcare personnel.

Furthermore, extreme temperatures, work in wet environments, noise, stress, chemical products or pollutants, as well as shift and night work, are additional risk factors to which catering staff are exposed. Authors have reported that contact dermatitis affects around 10% of all workers in the catering industry, which may be directly related to exposure to wet work and to the irritant and allergenic potential of a wide variety of materials and foodstuffs [4] [5]. Svendsen *et al.* also demonstrated an association between kitchen work and respiratory symptoms resulting from exposure to cooking fumes [6].

All these identified risk factors, together with the near absence of published data on the working conditions of hospital catering staff in our context, motivated the conduct of the present study at the Angré University Hospital Centre (UHC) in Abidjan in 2025. With the aim of contributing to the improvement of working and hygiene conditions for hospital catering employees, this study was initiated. The general objective was to assess the working conditions in the catering department of the Angré UHC in 2025. Specifically, the study sought to identify the occupational hazards present in the catering service of the Angré UHC in 2025, to measure levels of exposure to these hazards, and to describe the existing preventive measures.

2. Materials and Methods

2.1. Type, Duration and Setting of the Study

We conducted a descriptive cross-sectional study of working conditions in the catering department of the Angré University Hospital Centre (UHC) in 2025, from 1 February to 31 May 2025 (four months). This department operates 24

hours a day, 7 days a week, and provides an average capacity of 200 meals in the refectory and 140 meals for breakfast, lunch and dinner. It is subdivided into five units: the storage area, the kitchen, the dishwashing area, the refectory, and the operations manager's office.

2.2. Study Population and Inclusion Criteria

The study exhaustively included all workers in the department, regardless of age, sex or job function.

2.3. Data Collection Instruments

A structured interviewer-administered questionnaire was used to collect data related to the workers. It included:

- **Socio-occupational characteristics** (age, sex, level of education, occupational category, job position, length of service in the position, work organisation, number of working days per week, number of working hours per day, occupational hazards present, verbal workplace violence from hospital staff and patients during services, perceived level of working conditions, and reasons for dissatisfaction);
- **Medical data** (medical history, reported symptoms, lifestyle).

Data relating to the premises, the working environment and existing preventive measures were collected in the different units during work activities, through workplace visits, using a checklist.

Noise levels were measured using a Voltcraft SL-50 sound level meter. Illumination levels were measured with a Voltcraft BL-10L lux meter. Temperature and humidity were measured using a CONRAD Mignon LR6 thermo-hygrometer. In addition, a digital camera (Canon EOS 1300D, 18 megapixels, with an EF-S 18 - 55 mm zoom lens) was used to take photographs.

2.4. Data Collection Procedure

Workers were interviewed to complete the questionnaire. Data related to the working environment were collected through direct observation of workers performing their daily tasks during workplace visits.

Noise measurements were carried out using a calibrated sound level meter positioned at human height, with sound pressure levels in dB(A) recorded in the different work areas. Illumination levels were measured on the relevant work surfaces in the units using the Voltcraft BL-10L lux meter.

Temperature and humidity measurements were taken in the vicinity of the equipment and machinery.

2.5. Data Analysis

The collected data were entered and analysed using Epi Info version 7 software. Quantitative variables were described using means and standard deviations, while qualitative variables were described using frequencies and proportions.

2.6. Ethical Considerations

The study was conducted in compliance with data confidentiality requirements. Data collection was anonymous, and the results of the study will be used solely for scientific purposes.

3. Results

3.1. Sociodemographic Data

Thirty-three (33) workers responded to the survey out of a total of 35, corresponding to a participation rate of 94.3%. There was a female predominance (57.6%), and the mean age was 27.73 ± 6.90 years, with a range from 19 to 49 years.

3.2. Occupational Data

The workers were mainly cooks (72.7%). Most had less than one year of professional experience (57.6%), a secondary level of education (54.5%), and all worked more than 40 hours per week (100%). Two-thirds of the workers (66.7%) rotated between different workstations. The majority of workers reported experiencing work-related stress (75.7%) and having been victims of workplace violence (72.7%) (**Table 1**).

Table 1. Distribution of workers according to occupational characteristics.

Occupational Characteristics	Number	Percentage (%)
Level of education		
Not educated	5	15.2
Primary	7	21.2
Secondary	18	54.5
Higher education	3	9.1
Job position		
Operations manager	1	3.0
Cook	24	72.7
Dishwasher	2	6.1
Server	2	6.1
Cleaner	4	12.1
Length of service (years)		
<1	19	57.6
1 - 2	10	30.3
>2	4	12.1
Job rotation		
Yes	22	66.7
No	11	33.3

Continued

Work-related stress		
Yes	28	75.7
No	5	24.3
Workplace violence		
Yes	24	72.7
No	9	27.3

3.3. Medical Data

The main health problems reported were sleep disorders, headaches and anxiety, observed in 81.8%, 72.7% and 66.7% of workers, respectively (**Table 2**).

Table 2. Distribution of workers according to reported symptoms and illnesses.

Conditions	Number	Percentage (%)
Anxiety	22	66.7
Contact dermatitis	4	12.1
Asthma	1	3.0
Low back pain	5	15.1
Typhoid fever	2	6.1
Asthenia	6	18.2
Headaches	24	72.7
Sleep disorders	27	81.8

3.4. Data Related to Working Conditions**3.4.1. General Characteristics of the Work Premises**

- Mouldy walls and uneven, slippery floors (presence of cooking oil and cracks);
- Watertight ceilings;
- Generally unsanitary environment;
- Presence of rats and insects;
- Clear and unobstructed circulation areas with adequate floor marking;
- Cluttered storage area with poor organisation;
- Welfare facilities (changing rooms, showers and toilets) available.

3.4.2. Identification of Hazards

Ergonomic, mechanical, physical, chemical and biological occupational hazards were present in this hospital collective catering service (**Table 3**, **Figure 1** and **Figure 2**).

3.5. Occupational Accidents Reported by Workers

Twenty (20) respondents reported having experienced an occupational accident. These accidents mainly occurred as a result of tool-related injuries (70%) and contact with hot liquids (20%). No occupational accidents had been officially reported or declared (**Table 4**).

Table 3. Observed occupational hazards.

Types of hazards	Observations
Ergonomic and mechanical	Manual handling of loads (cooked dishes in containers weighing more than 20 kg) on staircases, with a risk of falls.
	Contact with hot dishes, with a risk of skin burns.
	Meat cutting without personal protective equipment (PPE).
	Repetitive movements of the upper limbs during kitchen tasks, in the dishwashing area and in the refectory.
Physical	Prolonged standing posture during cooking, bedside meal distribution to patients, and service in the refectory.
	Wet areas (butchery, dishwashing area, offices).
Chemical	Hot and noisy kitchen environment.
	Insufficient natural and artificial lighting (fluorescent tube lighting).
Biological	Contact with chemical products used for dishwashing.
	Contact with potentially contagious patients (tuberculosis, influenza, COVID-19, etc.).

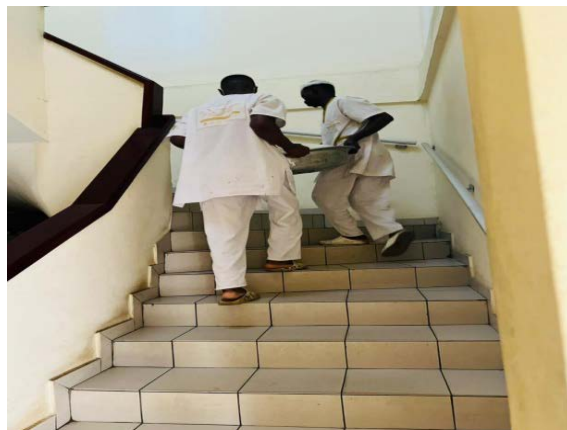
**Figure 1.** Manual handling of a rice basin by two servers on a staircase, with a risk of falling.**Figure 2.** Cutting tasks performed without gloves and wearing inappropriate footwear.

Table 4. Distribution of workers according to self-reported occupational accidents.

Items	Number	Percentage (%)
Occupational accident		
No	13	39.4
Yes	20	60.6
Mechanism (N = 20)		
Object falling on the head	1	5.0
Same-level fall	1	5.0
Tool-related injury	14	70.0
Contact with hot substances	4	20.0

3.6. Metrology Data

Noise levels ranged from 60 to 75 dB(A) across the work units. The highest temperature was recorded in the kitchen (38°C), and relative humidity ranged from 65% to 80%. Illumination levels varied from 148 to 550 lux (**Table 5**).

Table 5. Noise, illumination, temperature and humidity levels in the different units.

Area	Noise dB (A)	Illumination (lux)	Temperature (°C)	Humidity (%)
Kitchen	75	360	38	70
Office	70	148	29	80
Refectory	65	550	30	65
Dishwashing room	60	20	32	75
Storage room	65	280	31	72

3.7. Preventive Measures

3.7.1. Observed Collective Technical Prevention

- Natural and mechanical ventilation (extraction hoods present but not functional);
- Faulty goods lift;
- Rodent and insect control (quarterly treatment);
- Absence of displayed work procedures;
- Lack of worker training on occupational risks. (**Table 6**)

Table 6. Personal protective equipment (PPE).

PPE	Observations
Work clothing	Appropriate but insufficient
Aprons	Appropriate but insufficient
Footwear	Non-slip shoes not provided
Head coverings	Insufficient
Gloves	Absence of cut-resistant gloves in the butchery

3.7.2. Observed Individual Technical Prevention

Workers used unsuitable footwear and gloves; head coverings and work clothing were insufficient.

3.7.3. Medical Prevention

No statutory medical examinations (pre-employment, periodic or return-to-work) had been carried out for employees. With regard to vaccination, the vast majority of respondents had not received the vaccines recommended for the catering sector: diphtheria, tetanus, poliomyelitis, hepatitis B and hepatitis A.

3.7.4. Perceived Level of Working Conditions

Twenty (20) workers in the catering department of the Angré UHC considered their working conditions acceptable, whereas 13 workers (39.4%) judged them to be poor.

Low remuneration, high workload and lack of rest were the main reasons for dissatisfaction, reported by 90.9%, 69.7% and 66.7% of workers, respectively.

4. Discussion

4.1. Study Limitations

The data were collected from workers through interviews. Initially, we encountered some reluctance on the part of the workers to participate in the study, despite assurances regarding the confidential nature of the data. Reporting bias may therefore have persisted, particularly concerning medical and professional data claimed by the workers. The small size of our sample and the single-center design of the study may have limited the study's power.

4.2. Socio-Occupational Characteristics

The mean age of workers was 27.73 ± 6.9 years, indicating a young and active workforce. According to the National Institute of Statistics, more than three-quarters (75.6%) of the Ivorian population is under 35 years of age [7]. This youthfulness may reflect occupational instability, frequently observed in low-skilled jobs in the hospital catering sector, which often attract a young and relatively inexperienced workforce.

The moderate female predominance (57.6%) also reflects a trend observed in certain segments of the catering sector, particularly in food preparation and service occupations, where women are often overrepresented but remain exposed to specific forms of job insecurity and harassment [8].

Secondary-level education was the most common (54.5%), while only a small proportion of workers had higher education (9.1%). This finding is consistent with the generally low level of qualification required for recruitment in this sector. Low educational attainment is well documented as a risk factor in occupational health, particularly due to limited understanding of safety instructions and poor awareness of social protection rights [9].

Nearly 73% of workers were employed as cooks. This limited diversification of

job roles is typical of small and medium-sized enterprises in the food sector, where polyvalence is often imposed.

Indeed, 66.7% of workers rotated between several positions. This multi-tasking, which is often unrecognised, constitutes a source of physical and mental overload, exacerbated by a lack of professional recognition [10]. More than half of the workers (57.6%) had less than one year of seniority, reflecting a high turnover rate, often linked to job insecurity in hospital catering. This situation limits opportunities for training and investment in occupational health and safety [11]. Weekly working hours largely exceeded Ivorian legal recommendations. Excessive working hours are known to be associated with sleep disorders, reduced cognitive performance and metabolic disorders [12].

4.3. Health Data and Working Conditions

Workplace observations revealed major deficiencies, including uneven and slippery floors, mouldy walls, cluttered storage areas and generally poor hygiene. Such conditions not only increase the risk of occupational accidents (60.6%) but also raise concerns regarding food contamination, which is particularly critical in a hospital environment [13].

Tool-related injuries (70%) and contact with hot liquids (20%) were the most frequent accident mechanisms. These accidents are characteristic of poorly supervised environments lacking formalised safety procedures and appropriate equipment.

Observations of working conditions noted regular manual handling of heavy loads and prolonged standing, which are well-known risk factors for musculoskeletal disorders (MSDs) [14]. The presence of these factors in this sector, particularly in our context, highlights the urgent need to improve workplace ergonomics.

Work-related stress affected 84.8% of workers, and 72.7% reported being victims of verbal violence. These factors are known to contribute to burnout and reduced performance [15]. Additionally, sleep disorders and anxiety were reported in 81.8% and 66.7% of cases, respectively. These symptoms reflect a deterioration in workers' mental and physical health, likely related to work overload and exposure to physical and psychosocial hazards.

Indeed, these high rates of psychosocial disorders reported by workers can be explained by excessive working hours, high workloads, inadequate working conditions, and low pay.

All workers were exposed to noise, with sound levels ranging from 60 to 75 dB(A). Although these levels remain within regulatory limits, they may still cause discomfort or long-term auditory fatigue. Lighting was insufficient in several areas (148 lux in offices compared with a recommended standard of 300 lux), and high temperatures (up to 38°C in the kitchen), combined with high humidity (70% - 80%), created conditions conducive to thermal discomfort, physiological stress and occupational accidents [16].

4.4. Prevention and Perception of Working Conditions

With regard to prevention, personal protective equipment was either inadequate or absent (masks, gloves, footwear). This lack of a prevention culture is common in small enterprises and in the informal sector and represents a major public health challenge.

Finally, 39.4% of workers considered their working conditions to be poor. The main sources of dissatisfaction were low remuneration (90.9%), high workload (69.7%) and lack of rest (66.7%), factors widely recognised as predictors of demotivation, absenteeism and high staff turnover [10] [15].

5. Conclusions

This study conducted in the catering department of the Angré University Hospital Centre highlights a young, low-skilled workforce subjected to job polyvalence, long working hours and insufficient and inappropriate preventive measures. Ergonomic, chemical, biological, physical and psychosocial hazards were ubiquitous.

The lack of both collective and individual technical prevention, combined with the absence of medical surveillance and inadequate personnel management, jeopardises not only workers' health but also the sanitary quality of food production.

These findings require the implementation of a formal occupational health program focused on reviewing work schedules in accordance with the law, training workers on the risks involved, regular medical monitoring of workers, and providing personal protective equipment (PPE) specific to the catering sector.

Conflicts of Interest

The authors declare no conflicts of interest.

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