

Occupational Stress among Chefs in Commercial Kitchens

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ABSTRACT: A chef is a trained cook who is proficient in almost all aspects of cooking and specializes in one or few cuisines. Professional chefs face a number of work-related challenges at their workplace. This paper focuses and emphasizes on the work-related challenges faced by chefs in their workplace, i.e., commercial kitchens.

A study was conducted among 121 chefs working in various types of commercial kitchens with the aim to investigate the prevalence of work-related musculoskeletal discomfort. The specific objectives being to assess the psychological factors related to work. The research is exploratory in nature and is supplemented with quantitative data. The data was collected by surveying in different work kitchens with a structured self-constructed questionnaire. Modified Discomfort questionnaire was administered to record the extent of discomfort faced.

It was observed that 67 (55%) chefs suffered from high stress while cooking, followed by moving/lifting heavy equipment 62 (51%) and chopping 56 (46%) among other activities due to pressure of job, low job satisfaction, long working hours, improper work-life balance and lack of rest breaks.

The results recognized the need and urgency to reduce the factors for occupational stress among chefs.

KEYWORDS: chefs, commercial kitchens, occupational stress, low job satisfaction

I. INTRODUCTION

Hospitality has a wide assortment of administrations that incorporates housing, nourishment and drink administration, occasion arranging, amusement parks, transportation, journey line, voyaging. A hospitality unit, for example, an eatery comprises of different gatherings, for example, office support and direct tasks that incorporate kitchen laborers, gourmet experts, servers, barkeeps, the board and human asset.

Chef is a proficient cook who is masters one or more cuisine and creates a job opportunity for self. The term "Chef" originated from a French terminology *chef de cuisine*, which means the chief of a kitchen. These culinary experts get their course from an organization or a culinary school. Foundations course programs for chefs are used to increase a hand-on involvement with arranging menus, knowledge of gear and buying supplies for the kitchen. Many institutions expect learning chefs to work as a *sous-chef* in a business kitchen. Chefs utilized in culinary industry are expanding step by step with the expanding request.

(<https://www.revfine.com/hospitality-industry/>)

Ergonomics is the scientific discipline of work that centers around altogether tending to the collaboration of people with the workplaces and the devices utilized while doing the assigned activity. The standards of ergonomics are not kept to conventional age-old word related conditions like workplaces or manufacturing plants, however are widely stretched out towards tending to the requirements of all client situations which incorporate various fields of administration, social insurance, and recreational enterprises.

(https://www.who.int/occupational_health/publications/ILO_WHO_1984_report_of_the_joint_committee.pdf)

Chefs and other kitchen staff are exposed to many hazards in the daily course of duties. Mishaps, falls, sharp tools, heavy equipment and other varied issues. This is the primary purpose for most injuries and accidents that occur. Significant injury will be injury that can possibly cause delayed handicap or demise. Chefs in commercial kitchens are

also posed with a high risk of ergonomic factors such as lifting heavy articles, utensils, pushing/pulling things, working in awkward stances or performing difficult errands etc.

https://www.ccohs.ca/oshanswers/occup_workplace/cooks.html

Prevention and safety of chefs interlace with their psychological aspects like work satisfaction, stress, optimal work, etc. It also includes environment work studies like overtime, excess work, temperature, sound, vibrations, etc,

Different organizations like OSHA, NIOSH, IEA and many others focus on guidelines and safety standards in an occupational stress. These guidelines are helpful for all occupations including chefs.

<https://www.cdc.gov/workplacehealthpromotion/health-strategies/musculoskeletal-disorders/index.html>

Even though Restaurant sector is developing vastly as a sector in the world, and employ a large number of people, their Health and Safety is been lost sight of and hence resulted various work-related diseases including occupational cancers, blood diseases, GI diseases. MSDs, and in top of that work related injuries and pains like cuts, burns, trips, slips and fall all together include the stress developed in the chef and hence his health is in danger. Gibbons, C., Murray-Gibbons, R. (2007) in their paper, focused on the stress experienced by chefs and the ways to reduce them. The study reported that increasing evidence over the last 15- 20 years has been documented the marked occupational stress experienced by the chefs and within hospitality and leisure industry generally, as compared to any other professional. Overtime is very common with average number of people working in excess 65 hours a week. One of the biggest injuries seen amongst chefs is burn-out.

Murray-Gibbons, R. & Gibbons, C., Occupational Stress in Chef Profession International Journal of Contemporary Hospitality Management, 2007, Vol.19 02.09.19

Many employees in that stressed environment suffered high fatigue, high emotional exhaustion and low personal control. This may be possible due to poor management, life skills and time management. Main reasons are this are rules, policies at workplace, specifically quoted as being working hours and/or overtime (excess work) and the pace of work (Murray-Gibbons, R. & Gibbons, C., Occupational Stress in Chef Profession International Journal of Contemporary Hospitality Management, 2007, Vol.19 02.09.19).

This implies that the stress maybe underestimated as compared to the actual cases of reported levels of stress. The workplace environment adds to the stress. Other reasons detailed by the interviewees were repetitive work, poor fixture and fittings, increasing workload and being short staffed. Better job designs are said to be a step towards better solution. <http://www.economicdiscussion.net/human-resource-management/what-is-job-design/31762>

Very few researches consider the health of culinary specialists. Individuals are investing a greater amount of their energy and cash in cafés and lodgings and this has become a convenient daily practice to eat outside at least once every week. Subsequently, the customer wellbeing and satisfaction is given prime importance. Chefs, inspite of assuming a critical role in ensuring satisfaction and customer loyalty are a neglected on a high scale. This study hence, probed the level of work-related stress among chefs employed in commercial kitchens.

II. OBJECTIVES

The objectives of the study is to (i) assess the psychological factors (stress experienced and satisfaction levels) related to work; (ii) suggest ergonomic solutions to reduce these stress factors.

III. METHODOLOGY

An exploratory study was conducted among 121 (aged 20 – 60 years) from 30 restaurants, commercial kitchens and hotels in Mumbai city and its suburbs selected through snowball sampling technique. Since this profession is male-dominated, only male chefs were included in the study. A self-constructed and validated questionnaire was used to collect data.

A self-constructed and validated questionnaire was used to collect information. The questionnaire was divided into 3 parts:

- Part A collected information on the demographic profile of the participants
- Questions probing the work-related information formed Part B

- Part C and Part D comprises of information related to the respondent’s occupational health and stress levels like workload, shift-hours, rest-breaks, etc.

IV. RESULTS

Sample Profile:

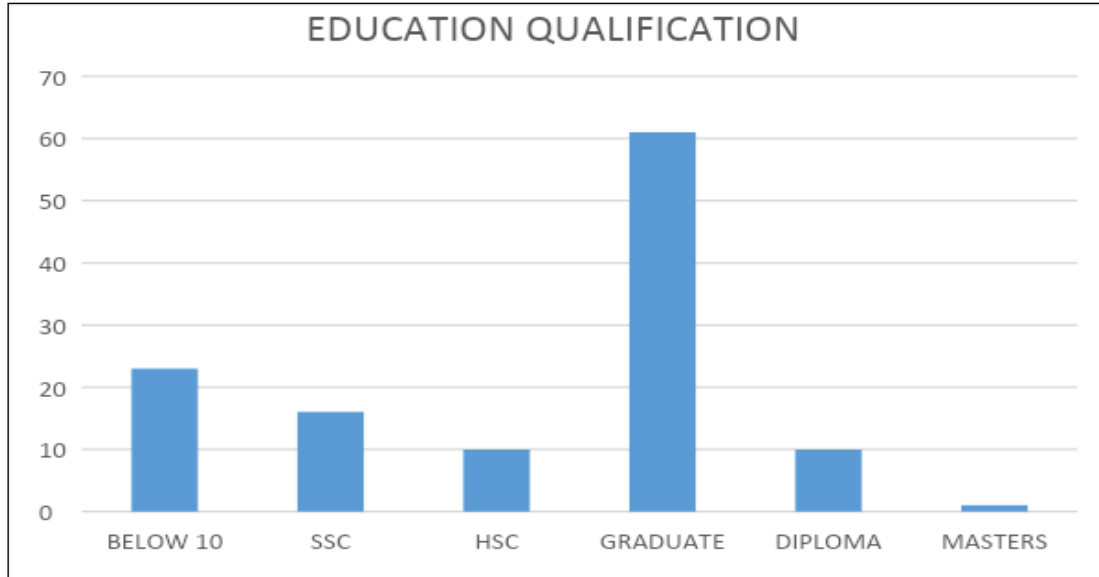


Figure 1.1: Educational Qualification of Chefs

23(19%) of the chefs were below 10th grade. 16(13%) of the chefs had completed their SSC. 9(8%) of the chefs had completed their 12th standards. 1(1%) of the workers working within the hotels had a post-graduation. 62(51%) of the workers who graduated were head chefs and executive chefs.

Work Experience:

Job Title	Range of Work Experience (in yrs)				Age group of Chefs
	<=1	1<=5	5<=10	>=10	
Head Chef	0	1	9	14	31-40 41-50 51-60
Asst. Chef	1	7	8	2	21-30 31-40
Chef	3	18	23	24	21-30 31-40 41-50 51-60
Trainee	3	3	1	0	21-30

Figure 1.2: Interrelation between Job Title, Work experience and Age group of Chefs.

The table above indicates the connection between the job designation, age group and the range of work experience in years. 7 (5.78%) chefs have less than a year of experience is designated as trainees and chefs, rarely considered for assistant chef. They belong to the youth group. 29(23.9%) chefs are given job titles of chefs and head chefs, who majorly belonged between 31-40 and 41-51 years with 1-5 years of work experience. 41(33.8%) chefs with work experience of 5-10 years where usually designated as the chefs and head chefs. 40 (33%) Chefs with an experience of more than 10 years are mostly given the job title of chefs or head chefs.

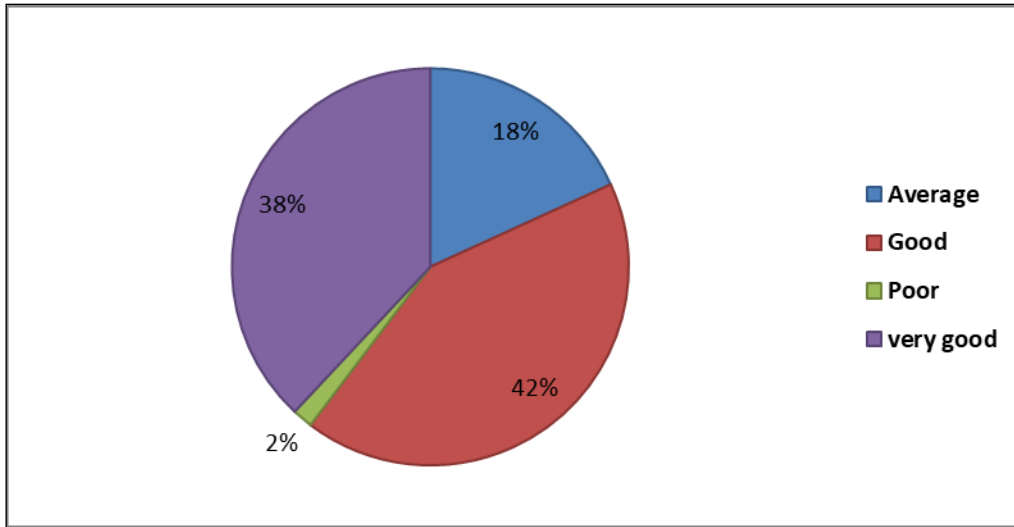


Figure 1.3.1: Self-rated health of Chefs

The graph below indicates the self-rated health of the chefs. 46(38%) of the chefs working within the kitchen rated their health as excellent with no illnesses and no medication.51(42%) of the chefs rated their health nearly as good. 22(18%) of the chefs rated their health as average due to some illness and body pains and aches once during a while. 2(2%) of the chefs rated their health as poor due to illness, fatigue and stress.

BMI Category	f	%
Underweight	8	7
Healthy	41	34
Overweight	13	11
Obese	32	26
Extremely obese	27	22

Figure 1.3.2: Body Mass Index of Chefs

This table indicates that 32 (26%) of chefs were obese, 27(22%) were extremely obese followed by 13 (11 %) and 8(7%) chefs being overweight and underweight respectively. It is observed that out of 121 chefs, only 41 (34%) have a healthy BMI.

Stress due to the tasks performed in commercial kitchens

The below given pie charts illustrate the data regarding the stress faced by the chefs in terms of high, medium and low stress. The given data is calibrated in percentage.

Task 1: Cooking:

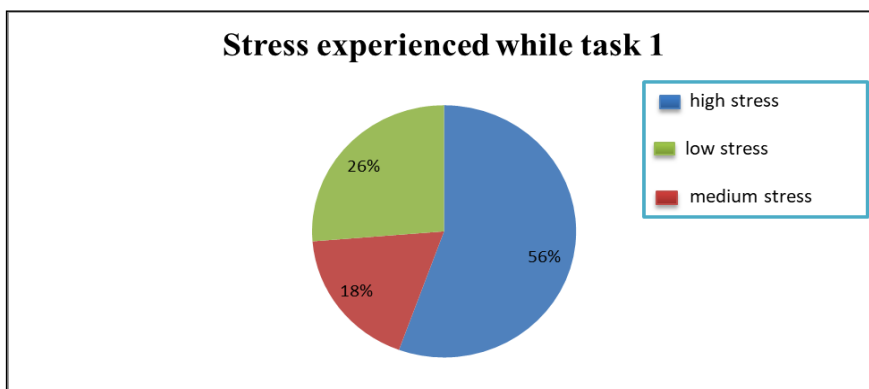


Figure 2.1: Stress experienced while cooking

67(56%) chefs experienced high stress. This was due to the amount of pressure of job, low job satisfaction, long working hours and improper work-life balance.

This was followed by chefs who experienced medium stress with a number of 32 (26%).

Only 22 (18%) chefs experienced low stress due to proper rest break and allowance in a designated pace of work according to the suggestions of management as well as the chefs.

Task 2: Chopping

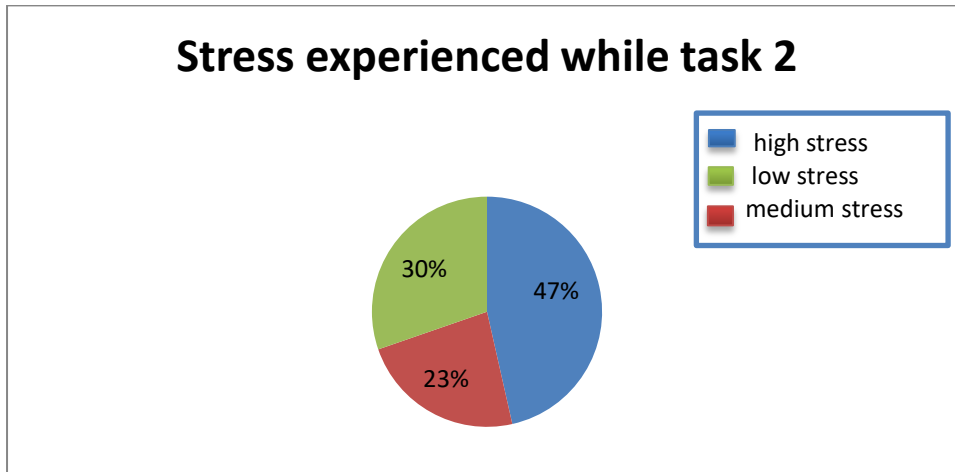


Figure 2.2:Stress experienced while chopping w.r.t. Chefs

56 (47%) chefs encountered high mental worry because of tedious movement and power required for cleaving. This was trailed by chefs who experienced medium stress i.e. 28 (30%)

Just 36 (23%) cooks experienced low stress as these chefs take breaks in the middle of to limit dreary developments and were changing their stance.

Task 3: Moving, Lifting and Managing Heavy Equipment:

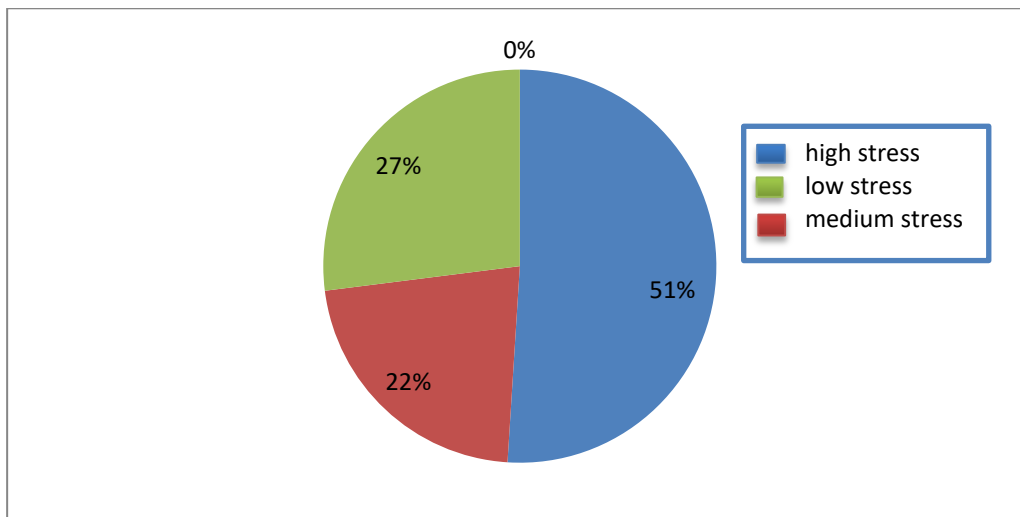


Figure 2.3:Stress experienced while moving and lifting heavy equipment

62 (51%) chefs experienced high mental stress as they lifted or moved all types of gear immediately without taking breaks in the middle of the assignment. This was trailed by gourmet specialists who experienced medium stress with different 27 (22%).Just 33 (27%) cooks experienced low stress as they were happy with working in the kitchen conditions.

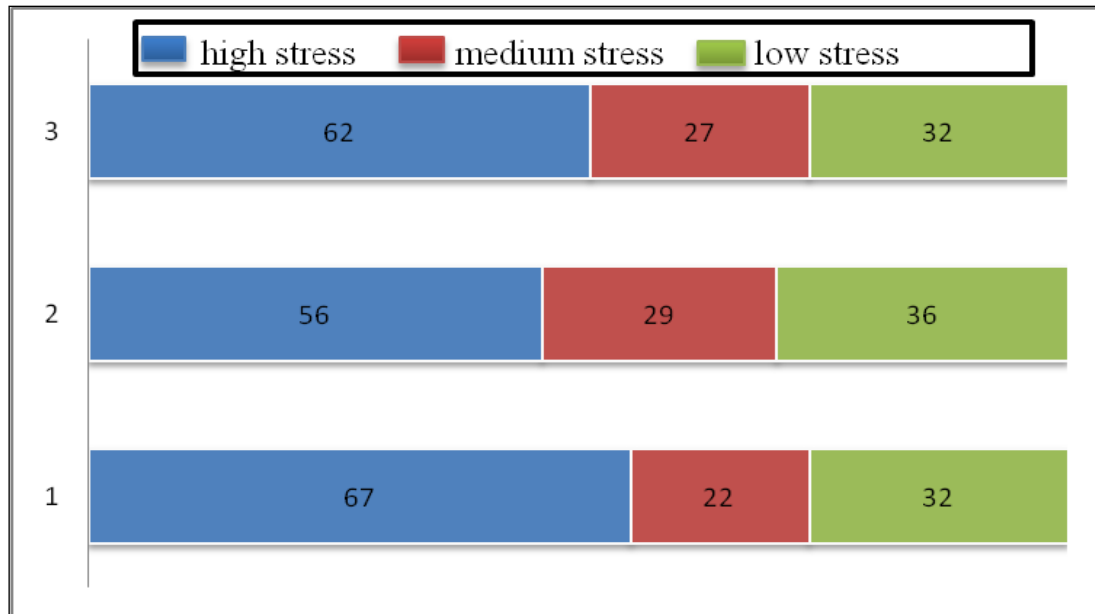


Figure 2.4: Comparison between level of stress experienced for task 1,2 and 3.

The above mentioned bar diagram showcases the tasks that induce maximum stress among chefs, which in this case is task 1 i.e. cooking.

When gotten some information about psychological wellness, it was seen that 64(53%) Chefs perceived indications of stress 57(47%) had no information with respect to the pressure they experienced on an everyday premise.

V.DISCUSSION

Fig. 1.1 focuses on the educational qualification and training capability of chefs working in this industry. It is seen that people who have completed their graduation course are given more opportunities and better job title in the field of hospitality industry and commercial kitchens. People with secondary and higher secondary certificate were given pre-preparation jobs i.e. cleaning, wiping, stirring, washing vegetables, etc. chefs with secondary certificate as an education qualification were given jobs on the basis of their work experience. This infers that some hotels give more weight-age to experience in comparison to educational qualification. Chefs with diploma degrees were given in-house employment opportunities with reputable hotels though, now hotels employ people having a degree course in culinary expertise. Out of many chefs who completed degree, not many chefs pursued post graduation degree courses.

The chefs were categorized dependent on their activity titles which incorporate head chef, assistant or sous-chefs, chefs and student-trainee. The sous-chefs instructed the chefs to prepare dishes and these dishes were examined by the head chefs who gave them some key points to alleviate their work. The chefs were assisted by trainees who were given the task of pre-preparation. It is observed that more years of work experience leads to better job designation and increases the authority of chefs in the kitchen. The head chefs are selected from chefs on the basis of higher range of experience as well as the age group which is more matured. Experience in kitchen comes with age and thus people with higher age group are often titled chefs and head chefs as seen in Fig. 1.2. There are also chefs belonging to a younger age who are designated as chefs. This is because of the educational qualification of these chefs as well as the demand for educated chefs as seen in Fig.1.1. Thus, it is also observed that this industry follows the hierarchical pattern of promotion with a few exceptions w.r.t. hotel employers and/or companies.

Many chefs working in the kitchens appraised their well-being as observed in Fig.1.3.1, which contradicted to their actual body mass index which showcases that maximum chefs suffered from obesity when seen in Fig.1.3.2. This is largely seen in chefs and trainees. As they are examined for each dish they prepare, they suffer from anxiety and stress which further leads to increase in weight and thus obesity. increase in BMI further leads to physical and psychological fatigue which can in turn bring about low job satisfaction.

Stress due to the tasks performed in commercial kitchens

Chefs did many tasks throughout their daily work hours like cleaning, washing vegetables, etc, out of which cooking, chopping and lifting and moving heavy equipment was considered most stressful by chefs when they were interviewed.

Cooking is the most essential job in a commercial kitchen. Chefs had to withstand for long working hours. This is in connection to the research paper by Gibbon, C which says that occupational stress is experienced ore due to overtime i.e. long working hours. This increased the amount of work pressure the chefs had to endure which then lead to mental stress among chefs. For cooking, chefs were forced to work fast by the employer which reduced their liking to work and thus brought fatigue and absenteeism. When referred to Fig. 1.2. Maximum employees are designated as chefs. Chefs who were older, but designated as chefs had to do all the cooking, which in turn brought about low job satisfaction and thus affected their mental health. They also worked in environment with higher temperatures, vibrations, etc which further elevated their stress, both physical and mental. As seen in Fig.2.1. It is observed that chefs suffer from stress due to all such causes

Chopping is a task that requires attention and repetitive motion. They have to maintain static posture for long period of time which can lead to fatigue among chefs. When interviewed, chefs implied that lack of break between the chopping procedure led to pain as well stress and mental fatigue. Due to arguments in the workplace some people found chopping as a stressful job as one negligent move could lead to injuries. The pressure to prepare everything before time also elevated their stress levels and leads to low productivity.

The fear of misbalance and falls stresses the chefs while moving heavy equipment in a commercial kitchen.. This further leads to arguments among chefs and thus affects the psychosocial work environment. They pick many types of equipment all at once and do it continuously till all of the required equipment are at their desired station. This can bring about fatigue among chefs. Lack of rest breaks was also major reason for stress among chefs.

It is seen that stress levels are low among chefs who are given proper rest breaks, have job rotation, and have positive stress environment which helps which help them to do their tasks well.

V. SUGGESTIONS

Ergonomics strongly focuses on the occupational needs of human beings in an entire and wholesome manner. It is the study and measurement as well as analysis of work (Rao, R., Introduction to Ergonomics, 2018-19, 05.05.19).Ergonomics is referred as interactions between worker and the workstation. There are three levels of ergonomic interventions that can help the worker for better health and productivity, such as:

Engineering Controls:

- i. Slip-free Flooring – slip free floorings will safeguard chefs from mishaps like slips and trips. This will reduce their fear of hurting themselves and can thus lower their stress levels by reducing fear and nervousness.
- ii. Automation – Automation in kitchen will reduce the work stress by division of labor between machines and employees.
Automation implies utilization of machines to carry out responsibilities handled by humans. It will increase the productivity of chefs and also reduce their anxiety, thus giving them stress-free work environment.
<http://archive.wilsonquarterly.com/sites/default/files/articles/AutomationAnxiety.pdf>

Administrative Controls:

- iii. Job Rotation: Job rotation can be used to motivate chefs and increase their interest levels within the commercial kitchens. This process gives a change of scenario for chefs and thus reduces the stress levels. It also provides with job stability which can bring about job satisfaction.
- iv. Rest Breaks: Such breaks can help in reducing exhaustion due to continuous work in case of chefs. It can give time to release stress among chefs. This will in turn affect the chefs and increase their productivity, thus reducing absenteeism.
- v. Adjustment in pace of work: Rearrangement in the speed of work can help chefs to do their daily tasks as per their will. This will bring about job satisfaction among chefs, thus increasing efficiency by reducing stress. Adjustment in pace of work acts as a stress-buster for chefs and thus leads to better performance.
- vi. Break down of Complex Tasks: this ideology is based on Henry Fayol's principle. <http://andrewmckay.yolasite.com/resources/14%20Principles%20of%20Management.pdf>. This is simplifying complex and stressful tasks like cooking into smaller tasks like stirring, adding spices, checking

the palatability, etc. and dividing it among more people. This can reduce the entire load on just two chefs and thus relive their stress.

- vii. Training and Development: Training on managing stress in a commercial kitchen is necessary for better efficiency in the workforce. It will help them channelizing their fatigue and stress, thus reducing the chances of absenteeism. This will also act as a de-stressor for chefs working in commercial kitchens.
- viii. Informal Education: informal education on stress management can also improve in reducing stress and motivating chefs e.g. Interaction between chefs of all designations.

Personal Controls:

- ix. Safety shoes: Safety shoes have an anti-fatigue sole. This can help in reducing all the physical pressure while working and help in reducing stress.
- x. Exercising: exercising produces endorphins also known as happy hormones which elevates mood and thus reduce stress levels. Some of these exercises for releasing mental fatigue are
 - Trapezius muscle extending and neck isometric activities.
 - Plantar fascia release for heel torment.
 - Breathing exercises
- xi. Behavioral Changes: Chefs need to have an optimistic attitude over utilization of Personal Protective Equipments (PPE). They should inculcate the habit of being positive about their workspace and also should be tolerant of chaos. They should also be able to properly maintain work-life balance which can happen through meditation and prayer. Chefs should also be dedicated towards their work and be dutiful in completing all their tasks through excellence.
- xii. They should be calm at all times and have a positive approach towards the work as well as the organization.

VI. CONCLUSION

This study explored the prevalence of work-related stress among chefs in commercial kitchens. They chefs experience the ill effects of various stressors. The results report that the stress levels are considerably high. The work hours are long for almost 8 – 12 hours per work shift. This occupational stress was reported as having several reasons such as long working hours, time-bound tasks leading to low satisfaction levels. Ergonomic solutions were given in order to help chefs regain work-life balance with respect to their job by suggesting control methods like job rotation, adequate rest breaks, proper ventilation, using shoes with anti-fatigue soles, physical and stress relieving exercises, etc. as quoted in the suggestion and control methods mentioned above.

Due to multiple constraints, many aspects could not be included in this study, the researcher plans to take this study ahead through Ergonomic Designing of Commercial kitchens., study of Cardiac stress experienced by the chefs, Job Satisfaction Index and work life balance among the chefs.

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Informed Consent: A written informed consent was taken from all 121 participants.

Conflict of Interest: The authors declare that they have no conflict of interest.

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