

*Original Research*

# Contribution to the Evaluation of the Influence of the Health Epidemic on the Quality of Life at Work (QWL): a Case Study

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## Abstract

Contemporary globalization can have only accelerated the process of circulation of the virus in time and space. This biological risk has turned into a pandemic called COVID-19, which has had a strong impact on the functioning of companies and even paralyzed the majority of large national and international companies. Except for a few strategic companies that are operating in a very degraded mode, the global economy is at its worst level in the decade perceived as the most stressful year in history by employees around the world. Thus, the health crisis will have entangled the vision of employees' work and is also pushing companies to reorganize their activities and review the organization of work. Therefore, to adapt the professional environment to the new health hazards, a clear diagnosis of the main risks is essential, which is the objective of our work. It is a qualitative study that allows the collection of information to understand and explain the facts of the managerial techniques in hospital departments in this pandemic period. The objective of such a survey is to measure the frequency characterizing the quality of life at work (situations, behaviors, opinions or attitudes, loss of reference points, anxiety and insecurity, stress and burn-out, etc.) in this pandemic period to develop a strategy and choose the most appropriate action methods. In the case study, we have chosen the hospital of Tébessa, Algeria.

**Keywords:** Covid-19; company, health crisis, quality of life at work, performance, health and safety at work

## Introduction

Contemporary globalization would only have accelerated the process of virus circulation in

time and space and the entire world has been affected by Covid-19 pandemic with the emergence of new challenges [1-3]. The crisis of this virus has disrupted our personal and professional lives; everything that was considered normal in our daily lives. This virus has severely disrupted the functioning of all organizations on the planet, even the total paralysis of the largest national and international companies

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[4-6]. Except for a few strategic companies that are operating in a very degraded mode, the world economy is at its the poorest level of the decade and these last three years (2019, 2020, and 2021) are perceived as the most stressful years in history according to employees worldwide [7, 8]. This new situation brings about new ways of managing and new perspectives. From now on, any change in the state of an entity has consequences on the state of the entities connected to it by contamination, on the whole system [9]. Therefore, it is certain that this health crisis has changed the habits and modes of operation of the planet, and even the world economy in general and the company in particular. Thus, the health crisis has entangled the vision of employees' work and has also pushed companies to reorganize their activities and review the organization of work while improving the well-being and the quality of life at work. In such a situation, to avoid starvation or even chaos, employees now have an even greater need to give meaning to their work. However, to keep employees motivated, it is necessary to consider these changes and readapt all organizations. From now on, in the context of the Covid-19 health crisis, the return to work is causing many changes within companies, and these companies will have to respond to vital economic performance issues to catch up without compromising the quality of life at work and neglecting social performance. Therefore, to adapt the professional environment to new health hazards [10-13], a clear diagnosis of the main risks is essential, which is the objective of our work. Thus, the main issues to be resolved as a priority in terms of quality of life at work (QWL) during the Covid-19 crisis will be working conditions, reconciling work-life balance, the issue of workload (overload and under load), the management of stress, anxiety, emotions related to the experiences of each employee during the confinement, etc. [14-17]. These problems are far from being new, but their magnitude is striking today. Few employees have not been confronted, during this health crisis, with one of these problems directly or indirectly. Indeed, the health crisis and the confinement have called into question the founding values of the collective organization, and harmful effects on their mental health are increasing: relations and interactions that contribute to the atmosphere and well-being of employees in the workplace reduced, fear has set in, stress and burn - out are increasing. Some of the social habits and rituals are now threatened due to social distancing. Lunch breaks are taking place with fewer people or even alone, conversations around the coffee machine are becoming rare. This is an unprecedented time, and organizations must take advantage of it to increase their effectiveness [18-20]. Therefore, safety, well-being at work, and quality of life at work are learning priorities to be taken into consideration by managers in all company activities [21-23]. In this work, we are interested in the most affected health sectors to understand the work environment in this health and its influence

on the behavior of health personnel to understand and explain the facts of managerial techniques in hospital management during this pandemic period.

## Experimental

Among the objectives of occupational health and safety, we find the promotion and maintenance of the highest possible degree of physical, mental, and social well-being of workers in all occupations on the one hand [24, 25] and the prevention of adverse effects on the health of workers due to their working conditions in posterity on the other hand [26, 27]. To do this and evaluate these expectations, several approaches have been proposed in the literature and the tools implemented depend mainly on the nature of the data and knowledge available to build a model of real system behavior including the behavioral phenomenon. In this work, we have chosen to orient the work on a data-driven approach, conducted directly in the field, through direct contact with the different categories of health personnel interviewed. It is a reflection that must be as close as possible to the reality of employees' lives. The issue is presented in the form of organized questioning, which directs the collection of information and the analysis of the results. Therefore, this method of data the collection is both a means of communication and a knowledge tool [28-31]. A qualitative study that collects information to understand and explain the facts of managerial techniques in hospital department management in this period of a pandemic. It is a dialectical process between a theoretical problem and a research field [32, 33]. The proposed working method is an opinion survey that measures the satisfaction of health personnel during this pandemic period and determines the profile of users. The main interest of this questionnaire survey is to gather a large amount of information, both factual and subjective, from a large number of representative individuals. Such a survey aims to measure the frequency characterizing the quality of life at work (situations, behaviors, opinions or attitudes, loss of reference points, anxiety and insecurity, stress and burn-out, etc.). To describe the influence of the work environment on quality of life. To describe the influence of the health situation during this pandemic period and to analyze the links between well-being and the work environment [34-37] to choose the most appropriate modes of action. The questions asked are fairly simple to understand and are on the order of 20 questions, to be impartial in the answers. The questions are of three types:

- Closed-ended with single-choice questions, where the respondent has only one answer to give, such as yes/no questions or screening questions (experience, status, gender, etc.),
- Closed-ended multiple-choice questions, where the respondent must select an answer from among those provided,

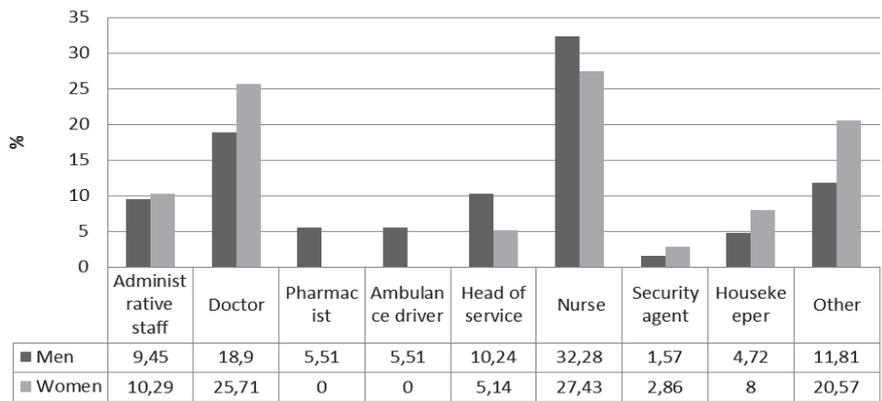


Fig. 1. Distribution of employees by professional status.

- Open-ended questions, allow for free answers, which can be enriching.

### Results and Discussion

As a case study, we chose the Tébessa health sector (Bekkaria Hospital, Allia Salah Hospital, and the emergency room). The number of the population questioned consists of 302 persons of which 127 males and 175 females were represented respectively by 42% and 58% distributed as follows Fig. 1.

#### Distribution of the Employees by Seniority

Fig. 2. Findings: We note that the majority of the population concerned by the study has been a seniority in the field for more than 5 years. In our opinion, this is in favor of the study and a very positive point for our study, given that an individual's productivity increases through training and learning new competencies. This will provide us with acceptable and tolerable judgment on the quality of life at work, and maybe very good results.

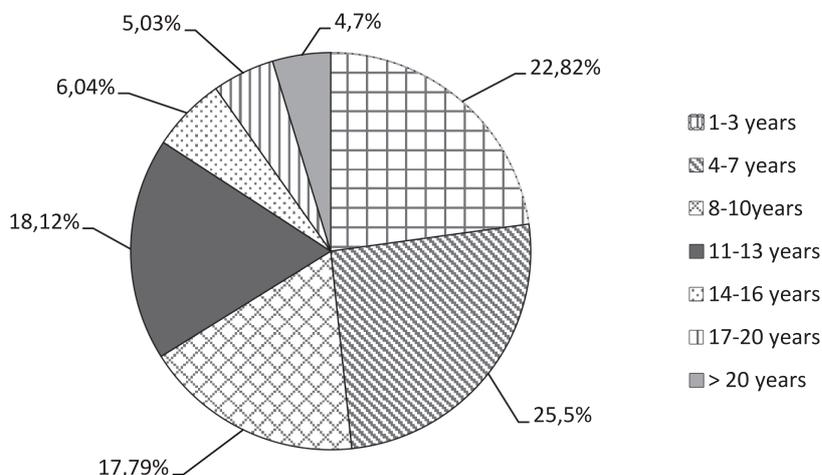


Fig. 2. Breakdown of the employees by seniority.

#### Age range

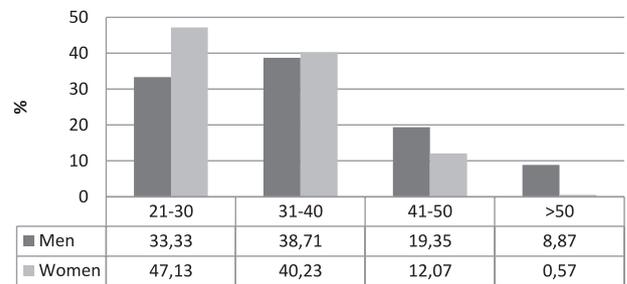


Fig. 3. Distribution of the employees by age.

#### Distribution of the Employees by Age

Fig. 3. Findings: This graph shows the distribution of the employees according to the age group of the survey respondents. We note that the majority of the respondents are young people between 21 and 50 years old. In our opinion, this is the most productive and dynamic age group. This age is the active population. This will again offer us quality and real judgments

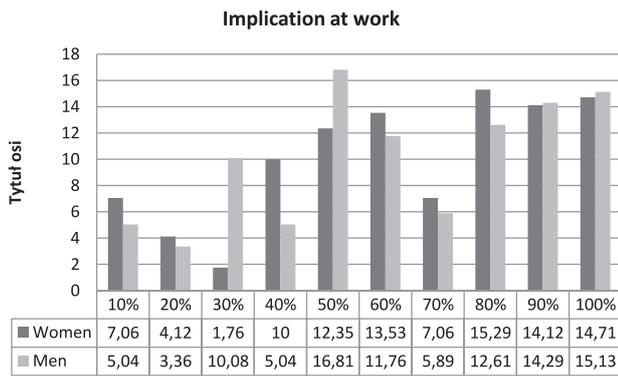


Fig. 4. The implication of the employees in the work.

on the quality of life at work, and possibly very good results in our study.

### Distribution of the Employees by Their Participation in the Work

Fig. 4. Findings: According to this graph, we can see that most of the respondents are more than 50% were implicated in their work, and among them, more than 80% were divided respectively among 44% of the female sex and 42% of the male sex. In our opinion, it is a very positive result in contrast to our survey and maybe to appreciate the quality of life at work. One can only be involved in the working conditions are not favorable to this proportion if the working conditions are poor. Human capital is now a determinant factor for the earnings capacity and the employment prospects of individuals. Employee engagement and well-being are fundamental issues for the protection of human capital; it is the most valuable asset in life.

### Opinion on the Quality of Life at Work

Fig. 5. Findings: From the graph, we observe that more than half of the respondents declared that the work conditions and the quality of their work were good. However, the others are a bit cautious. In our opinion, following the results previously shown that

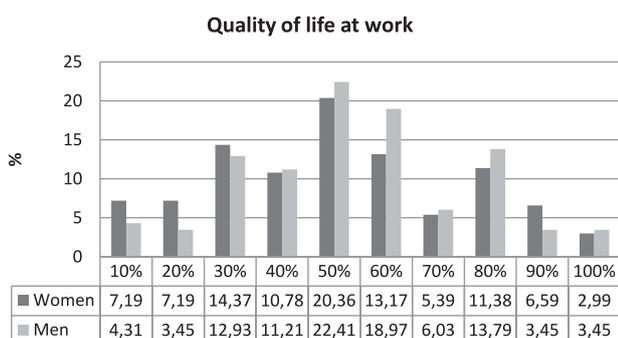


Fig. 5. Evaluation of the quality of life at work.

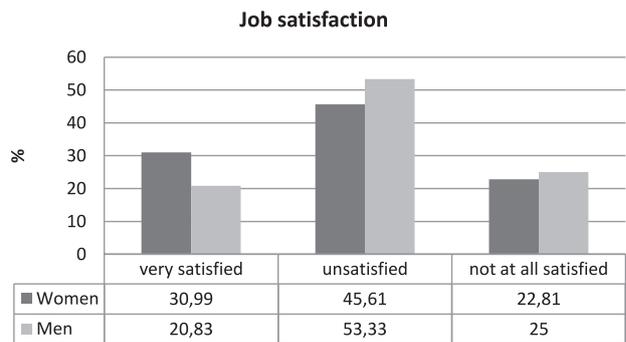


Fig. 6. Employees' satisfaction in their actual job.

a plausible explanation and judgment are organizational, it is a serious mistake not to have a specific strategy to ensure the well-being of its employees. Psychosocial risks intrinsically related to working conditions and organizational factors.

### Distribution of Employees by Job Satisfaction

Fig. 6. Findings: Satisfaction reflects a state. The work experience of the employee gives him satisfaction or dissatisfaction. The involvement focuses on the relationships that have developed between the individual employee and his work. We note that more than three-quarters of employees are satisfied or not very satisfied. In our opinion, we can see that the working conditions are acceptable, particularly in the pandemic conditions where everyone complains. In our opinion, the problem is organizational There is no clear management strategy and a lot of freedom is given to the employees. At the same time, a great deal of confusion is experienced by the parents and families of the patients to obtain admission for their patients.

### Psychological Support for Employees

Fig. 7. Findings: We find that in terms of support and life satisfaction and psychological well-being is on average equal to 77.35%. This is a very satisfactory result. We found that males have significantly lower

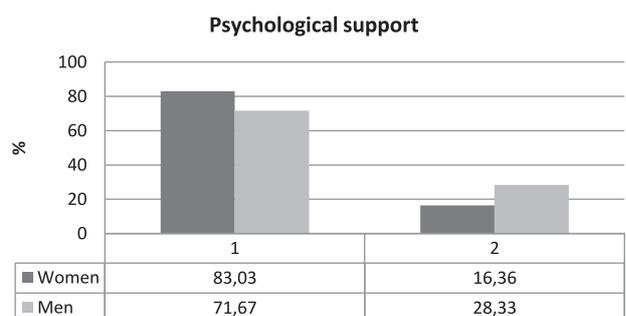


Fig. 7. Psychological Support for Mental Health of the Employees.

results than females in life support, life satisfaction, and Psychological well-being, confirmed by the chi-square test, to be known:

The test hypotheses are as follows:

$H_0$ : The proportion of men in the sample is the same as that of women

$H_1$ : The proportion of men in the sample is different from that of women

Under  $H_0$ , the test statistic is  $\chi_{ob}^2 = 4.0385$ .

For a risk of the first kind  $\alpha = 0.05$  and for a law of  $\chi^2$  to  $(2 - 1 = 1)$  of the ddl critical region  $W_{0.05}$  is:

$$W_{0.05} = [3.841; +\infty[.$$

The observed value of the test statistic (4.0385) does not belong to  $W_{0.05}$  so we reject the null hypothesis  $H_0$ . In other words, with a confidence rate of 95 %, the female sex is predominant.

In our opinion, in such pandemic conditions and the many upheavals they generate, certain psychosocial risks are more likely to resurface given the disorder experienced with the lack of oxygen and the lack of space for patients in hospitals in times of pandemic or the major part of the population does not know what to do and we attack the white coat, which led to the following operations: Exposure to verbal or physical violence by clients, in particular for staff working in a care setting;

Increasing the workload of most workers on the Covid 19 epidemic and services for victims of violence;

Fear of contamination or infecting others, for workers in the health and social services network;

The lack of information or conflicting information can exacerbate the manifestations of stress, anxieties, and depression experienced.

Most of the respondents reported that psychological support was available from the administration. This is a positive aspect of this study. This promotes the quality of life at work

### Application of Covid-19 Protective Measures

Fig. 8. Findings: Covid-19 preventive measures were intended to reduce the spread of the Covid-19 virus in the workplace, protecting the health of workers and visitors from being contaminated. We note that more than half of the employees recognized the practice of protective measures. In our opinion, the respondents reporting who report a lack of protective measures (about 35%) are the departments that are not concerned with the management of contaminated employees. However, under such conditions, the application of the national protocol to ensure the health and safety of hospital employees in the face of the Covid-19 the epidemic is indispensable for everyone. Therefore, the employer is required to implement all necessary means to preserve the health and safety of workers on the job, particularly in the health sectors.

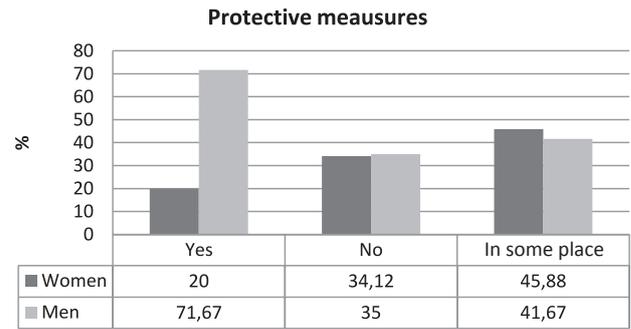


Fig. 8. Application of Covid-19 Protective measures in the Workplace.

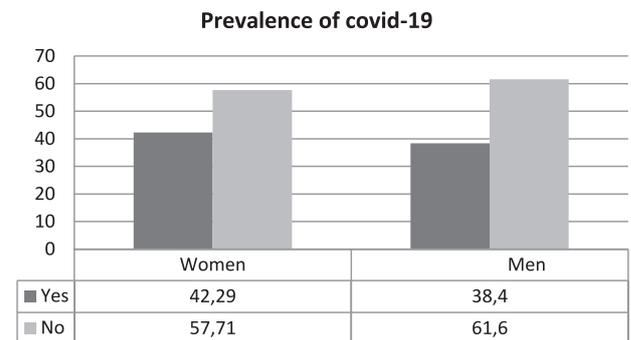


Fig. 9. Prevalence of Covid 19.

### Prevalence of Covid-19

Fig. 9. Findings: The results show that the majority of respondents, both women, and men, do not have sufficient information on the prevalence of Covid-19. In our opinion, it is a negative point for a healthy environment and better working conditions. From now on, knowing the prevalence of Covid 19 is of paramount importance to avoid contamination and the spread of the virus in time and space.

### Infected Family Member

Fig. 10. Findings: From our study, we find that more than half of the employees in the Health sector have been

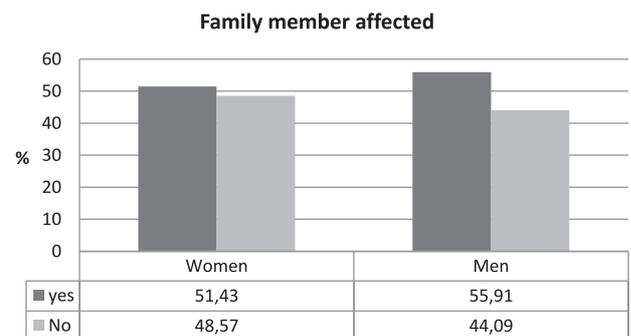


Fig. 10. Family member affected.

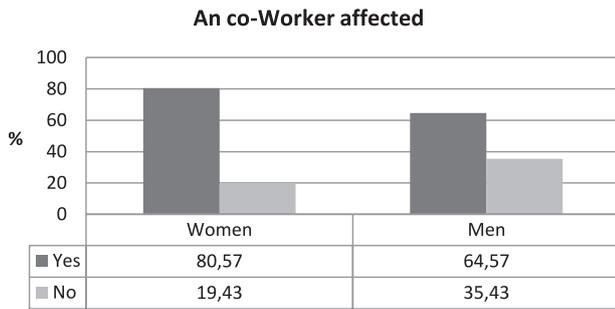


Fig. 11. Co-worker affected by Covid-19.

victims of this epidemic. This confirms our opinions that there is a lack of information and sensitization on Covid-19 at the hospital level, especially the ancillary staff.

### A Co-Worker Affected

Fig. 11. Findings: We note that most of the questioned people have co-workers (colleagues) affected by Covid-19. In our opinion, this reality imposes prudence and rigor on the work without the slightest error. From now on, this pandemic of Covid-19 challenges us to reorganize all our way of life and work.

### Normal Body Functioning

Fig. 12. Findings: We note that most of those questioned, more than 60%, recognized that the hospital is functioning normally. In our opinion, it is a double-edged sword, (i) that the hospital has not been affected by this pandemic and is functioning normally. In this case, this is very good despite opposition to this view. (ii) That the situation has been neglected and nothing has been taken seriously and the hospital is operating normally is without any conscience about the pandemic, without any guidelines and it is a disaster shortly.

### Afraid of the Virus at Work

Fig. 13. Findings: We find that most respondents are afraid of the epidemic. The Covid-19 pandemic

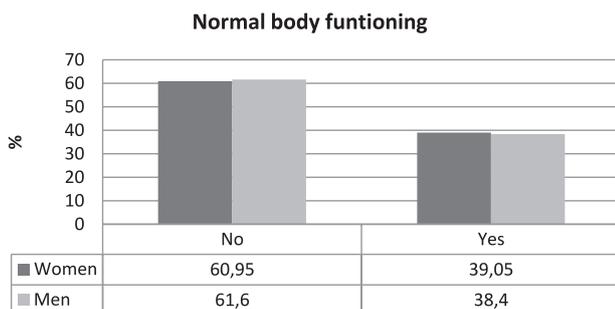


Fig. 12. Normal Body Functioning.

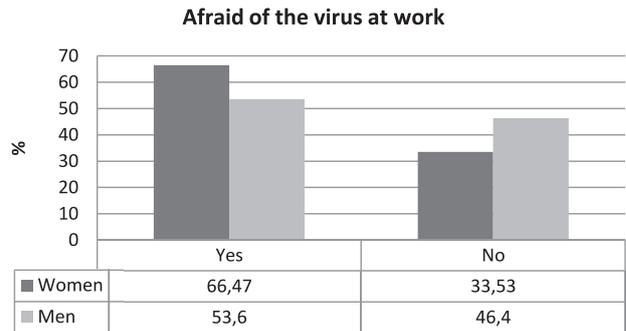


Fig. 13. Afraid of the virus at work.

has caused some employees to react in different ways, making the response more difficult. This period of crisis has generated stress in the entire population and fear infected by this epidemic. The novelty of Covid-19 and the fear of the unknown led to the stigmatization of the disease. This can compromise social cohesion and force the population to hide the disease to avoid discrimination. It may also discourage people from seeking immediate treatment or taking preventive measures. In our view, awareness campaigns should be on the front page every day, and the media should play its role in providing the right information about Covid-19, tackling misinformation, and rumors, building trust with communities and reducing stigma. In addition, compassionate communication with Covid-19 patients is just as important as working with the community, religious leaders, and other influential people to convey the right information and help reduce fear and the way people perceive those with the virus.

### Availability of Protection Means

Fig. 14. Findings: We note that there are divergent opinions on the availability of preventive means at the organizational level. In our opinion, a detailed study could provide further clarification of these opinions. In our opinion, an average rate of 65.18% of positive responses is encouraging. However, it should be noted that a great deal of attention was given to the doctors and the direct liaison staff with the patients regarding

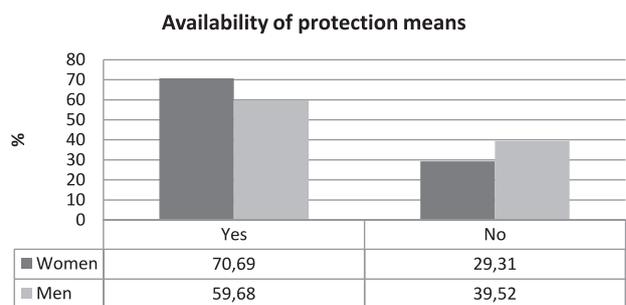


Fig. 14. Availability of Prevention Resources at the Organizational Level.

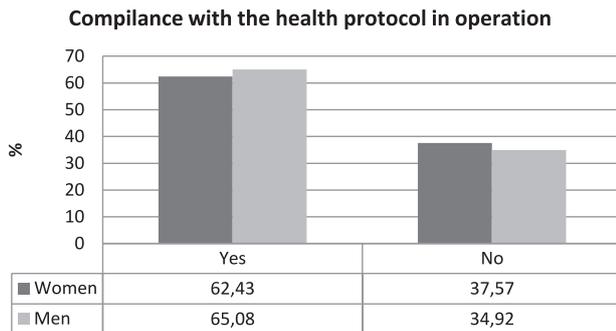


Fig. 15. Compliance with the health protocol in operation.

preventive measures. As a result, there was some discontent.

### Compliance with the Health Protocol in Operation

Fig. 15. Findings: Protecting the health of each person does not imply prohibiting the activity of companies and economic activity, especially in the sanitary sectors. The results of the survey show that a large proportion of employees (more than 62%) in the sanitary sector are in favor of respecting the health protocol. However, in our opinion, this is not sufficient in this period of pandemic.

### Working Conditions

Fig. 16. Findings: The survey shows that the working conditions are controversial. In our opinion, this is due to the pandemic and the nature of the interventions of the health sector employees, an urgency needed to improve working conditions, especially for white coats.

### Work-Life Balance

Fig. 17. Findings: Work-life balance is a concern for most employees, and they expect their employer to support them in this challenge. Here we notice that an imbalance was recorded among the staff for both genders with an average rate of 42.07%. However,

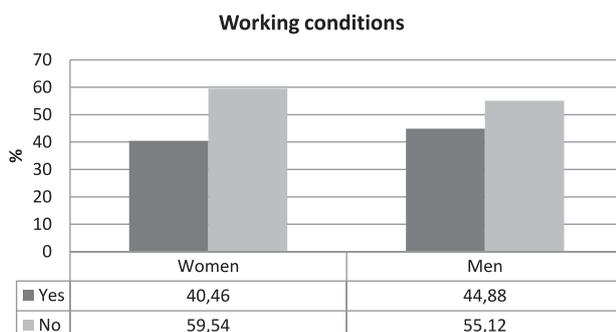


Fig. 16. Favorable Working Conditions for Various Activities.



Fig. 17. Work-life balance.

a difference was recorded between the two sexes confirmed by the Khi-square test, namely: the test hypotheses are as follows:

$H_0$ : The proportion of men in the sample is the same as that of women

$H_1$ : The proportion of men in the sample is different from that of women

Under  $H_0$ , the test statistic is  $\chi_{ob}^2 = 0.00065683$ .

For a risk of the first kind  $\alpha = 0.05$  and for a law of  $\chi^2$  to  $(2 - 1 = 1)$  dll the critical region  $W_{0,05}$  is:

$$W_{0,05} = [3.841; +\infty[.$$

The observed value of the test statistic (0.00065683) does not belong to  $W_{0,05}$  so we keep the null hypothesis  $H_0$ . There is no argument to assert that the sample has a different proportion of men than women.

And even if we accept a risk  $\alpha = 0.1$  the critical region will be  $W_{0,1} = [2,7; +\infty[$ . In this case, the observed value of the test statistic (0.00065683) does not belong to  $W_{0,1}$  and we cannot consider that the difference between the proportion of women and men is significant. In other words, with a confidence rate of 90%, there is no predominance.

In our opinion, these are the conditions imposed by Covid-19 and it is general for everyone. Here, efforts must be made by all researchers in the world to mitigate this problem. Because of this, employers must organize themselves to care for the mental and physical well-being of their employees. This is important and crucial to help employees maintain a balanced lifestyle.

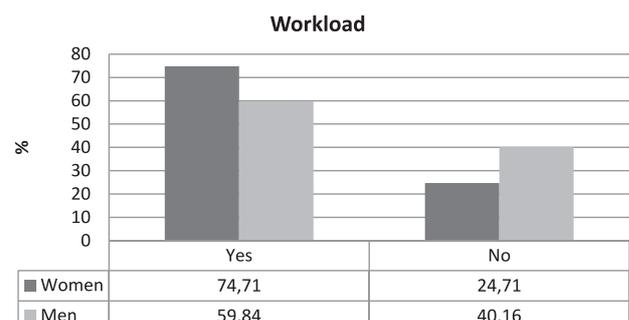


Fig. 18. Increase in Workload.

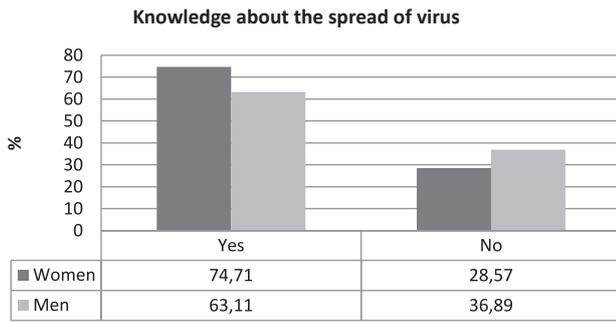


Fig. 19. Knowing of the spread of the virus.

Fig. 18. Findings: we note, that workload has slightly increased in comparison to the normal (before Covid) in men and a few more in women. In our opinion, this is very normal given that the female sex is always meticulous and applied, psychologically it influences the person. Employees in the health sector are generally used to managing daily risks, but not new risks such as this epidemic. In a pandemic, the individual risk is low, but the collective risk is high. The emotionally high impact threats of terrifying risks even though they cause fewer deaths than the risks we live with daily, terrifying risks attract media attention, fuel our anxiety and make us overly fearful of certain things.

### Knowledge about the Spread of the Cirus

Fig. 19. Findings: According to these results, we can observe that the woman is more vigilant than the men are. In our opinion, men are always relaxed compared to women. However, the result is encouraging.

### Staff Sensation

Fig. 20. Findings: It is normal with a mediatized and politicized virus and a frightening pandemic

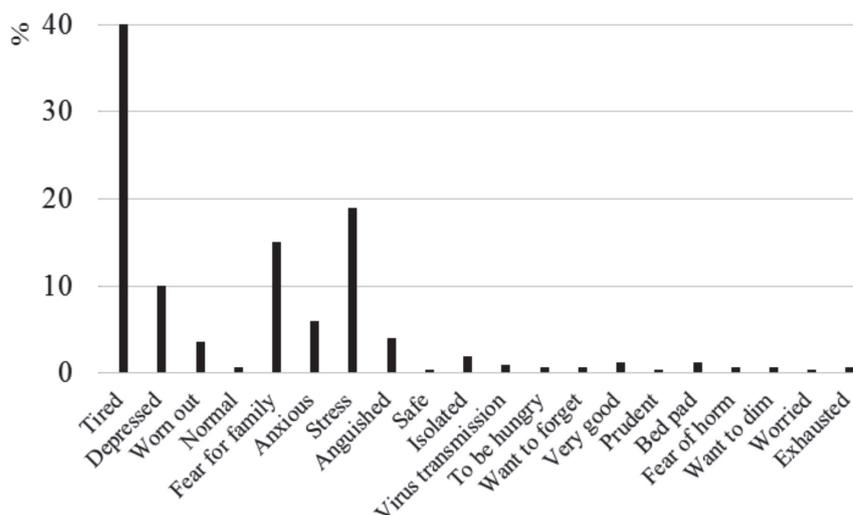


Fig. 20. Sensation after Return to Work.

in every continent of the world where all the media talk about it that there are such symptoms of fatigue, stress, anxiety, etc., that it is difficult to understand why it is so difficult to find a cure. We see that fatigue predominates along with stress and fear for the family. As well as depression, anxiety, and exhaustion at work. In our opinion, urgent attention is needed to repair in time; otherwise, it will influence the quality of life at work shortly.

### Conclusions

The results of our survey show that the situation of quality of life at work in the hospital of Tebessa is satisfactory in this period of Covid-19 since, despite the disruption, panic, and disorder that all hospitals in the republic have experienced during the pandemic of Covid-19, we can say that the values obtained are encouraging. However, it should be noted that the disorder and fear led to a lack of organization. This is somewhat acceptable in this moment of panic. However, the situation must be restored by engaging in a process of continuous improvement. Therefore, regular controls and visits from the institutions involved must be imposed. The quality of life at work is an essential component of sustainable development in nations. The health of the company is the health of the national economy and it is the health and well-being of the citizen. From now on, the quality of life at work in the area of balance between the economic, social, and health satisfaction of employees and the performance of companies. Consequently, the Algerian hospital must make the quality of life at work and wellbeing a priority in its daily management in the same way as other functions to anticipate the consequences of economic and social changes in society. Good quality of life at work plays an important role in the management

of human resources and must be part of a continuous improvement process.

To conclude in this period of loss of bearings, unknowns, and adjustments of all kinds, and based on the work published in this period of the pandemic [38-44], we recommend the following:

- Achieve greater employee satisfaction by improving the quality of work-life at the hospital level;
- Respect the physical integrity of each individual, through a good evaluation and the implementation of preventive actions, taking into account the organization of work and its technical and human components;
- To help to respect the legislation in force;
- To improve the organization at the level of services;
- Campaigns to raise awareness and motivate white jackets and visitors to be in the headlines of the media of all kinds;
- To draw the attention of the public opinion to the immediate and delayed impacts on the need to prepare for the hazards of the current situation as well as the possibility of new waves in the future;
- Participate in a continuous and sustainable improvement process in the quality of life at work and thus achieve the development of a sustainable preventive safety culture in all entities.

### Conflict of Interest

The manuscript has been read and approved by all listed authors.

Availability of data and material: 'Not applicable' for that section.

The authors declare no potential conflicts of interest concerning each, authorship, and/or publication of this article.

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### Appendix

#### Preamble

Among the objectives of occupational health and safety, we find the promotion and maintenance of the highest possible degree of physical, mental, and social well-being of workers in all occupations on the one hand and to prevent adverse effects on the health of workers due to their working conditions in posterity on the other hand. However, since contemporary globalization has only accelerated the process of virus circulation in time and space, the whole world has been affected by this Covid-19 pandemic, and new challenges have emerged. Everything that was considered "normal" in our daily lives has been turned upside down. Now, this situation is giving rise to new ways of thinking, new ways of managing, and new perspectives. This is why,

through this work, we want to know the reality of the quality of life at work of the staff to the new health hazards *in situ*.

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