

Assessment of the Perception of Quality of Worklife and Stress among the Staff of an Aerospace Company in Morocco

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Abstract

This epidemiological study aims to assess the perception of the level of occupational stress and quality of worklife (QWL) in the staff of an aerospace company in Morocco. A valid questionnaire is administrated to the staff and filled in autonomously and anonymously. In this study, perception of QWL seem to be affected by gender, indeed prevalence of a satisfying QWL is noticed to be higher for men. QWL is also affected by education level, respondents with a level of education of 3 years or higher have a better perception of QWL with a prevalence of 72%. The respondents asserted high job demand scores, high decisions latitude, as well as a significant support from colleagues. According to Karasek, this positive configuration places the individual in an "active" and not "high strain" position. On the other hand, monetary recognition is considered to be unsatisfactory according to respondents, thereby raising an imbalance in the (effort / reward) balance, leading to a possible presence of stress according to the Siegrist model.

Keywords: Quality of worklife; occupational stress; aerospace company; Morocco.

1. Introduction

Intensification of work during the last decades has led to a change in working conditions, allowing the emergence of psychosocial risks and occupational stress. The impact of stress is clearly demonstrated on the physical and mental health of workers and on the productivity and competitiveness of the company caused by absenteeism, staff demotivation, turnover... [1]. However, according to the International Labor Organization [1],

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much of the research in this area has been conducted in Europe and North America and, to a lesser extent, in the Asia-Pacific region and Latin America. Studies that are interested in Africa and the Arab States are still rare. On the other hand, a study on epidemiological research on stress and quality of worklife in Morocco [2] confirms the rareness of research on the subject, as well as the limitation of the latter to the fields of medicine and transport. Hence the objective of our study, which is to enrich the epidemiological scientific literature, by providing data on occupational stress and quality of worklife (QWL) regarding a study taking the case study of the staff of an aerospace equipments manufacturing company in Morocco. And that, using a recent validated questionnaire on stress and QWL [3].

2. Material and methods

2.1. Population study

Chosen population for the validation of this questionnaire is the staff of an aerospace equipments manufacturing company in Morocco. 74 respondents answered the survey.

2.2. Questionnaire

The questionnaire used for the purposes of this study is the one developed and validated by a Moroccan research team [1]. It is a questionnaire that allows assessment of occupational stress as well as QWL. The psychometric qualities of the questionnaire, namely the validity of the construct, internal consistency and stability over time are satisfactory overall.

The questionnaire consists of four main parts (Table 1), followed by a QWL question in general. A part investigating the socio-demographic characteristics of the surveyed population is also used.

Table 1: Parts of the occupational stress questionnaire and QVT

N°	Part	Number of items
1	Part I : Content of Work	1-12
2	Part II : Physical Environment of Labor	13-21
3	Part III : Social and relational environment	22-33
4	Part IV : Balance between work and personal life	34-40
Total		40 items

2.3. Survey conduct

Prior to the survey, the permission was obtained from the responsible authorities of the aerospace equipments company.

The questionnaire was given to the staff, attached to a letter of information and consent, emphasizing the anonymity and voluntary nature of the investigation.

The questionnaires were collected 7 days after their administrations.

2.4. Statistical analysis

The coding, processing and data statistical analysis are done with SPSS V 20 software.

The "Strongly Disagree", "Disagree" and "Neither Agree" or "Disagree" responses are considered to be negative, as for "Agree" and "Strongly Agree" responses are considered to be affirmative. To verify the association of quality of worklife (dependent variable) and socio-professional characteristics (independent variable), the non-parametric chi-square test is investigated. A significance threshold corresponding to a p value of 0.05 is chosen.

3. Results

3.1. Characteristics of the population

74 respondents answered the questionnaire (table 2). Participants are mostly between 30 and 40 years old (45.9%), followed by 20-30 year olds (35.1%).

Men are in a slightly higher percentage with (54%) versus (45.9%) for women. For the family situation of the respondents, the majority are married with children with a prevalence of (58.1%). (39.2%) had a level of education of 3 years or more, (48.6%) had a level of less than 3 years and (12.2%) did not exceed the secondary level. Most respondents have a seniority in the company of 3 years or more with (81.1%).

Table 2: Socio-demographic characteristics of the population

Characteristics	N	(%)
Age :		
20-30	26	35,1
30-40	34	45,9
40-50	11	14,9
50-60	3	4,1
Gender :		
Woman	34	45,9
Man	40	54,1
Family situation:		
Single	21	28,4
Divorced/ widow (er) without children	2	2,7
Married without children	8	10,8
Married with children	43	58,1
Education level:		
Secondary	9	12,2
Advanced studies <3ans	36	48,6
Advanced studies > 3ans	29	39,2
Experience in the company :		
Lower than 1 year	2	2,7
Between 1 and 3 years	12	16,2
Higher or equal to 3 years	60	81,1

3.2. Factors to the content of work

The prevalence of responses claiming a high job demand is rather important: 75.2% of the surveyed believe their jobs require long periods of concentration and 68.9% consider they have a large amount of work to do. However, the prevalence of decisional latitude is also high 70.3%.

On the other hand, respondents believe they have the necessary qualifications to perform their tasks (81%), and claim to have the opportunity to learn continuously (78.3%). (87.8%) feel their work is useful.

but only (35.2%) consider they are aware of the big changes taking place in the company (table 3).

Table 3: Stress and QWL factors related to the content of work

Items	Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly disagree	
	n	%	n	%	n	%	n	%	n	%
My work requires long moments of concentration	4	5,40%	1	1,40%	1	17,60%	2	27,00%	3	48,60%
I am led to do a great deal of work	2	2,7%	7	9,5%	1	16,2%	3	40,5%	2	28,4%
The objectives assigned to me are possible to complete in the requested time	3	4,1%	4	5,4%	1	20,3%	3	52,9%	1	16,2%
I have a clear description of my task	5	6,8%	1	13,0%	9	12,2%	2	37,8%	2	28,4%
I am frequently under pressure at work	3	4,1%	1	24,8%	1	25,7%	2	28,1%	1	14,9%
I can determine how I do my job myself	5	6,8%	8	10,8%	8	10,8%	3	44,6%	1	25,7%
I have to do routine tasks	1	1,4%	6	8,1%	1	20,3%	3	48,6%	1	21,6%
I have the necessary qualifications to do my job	5	6,8%	2	2,7%	6	8,1%	3	48,6%	2	32,4%
I can train to adapt to a new need at work	6	8,1%	5	6,8%	3	4,1%	3	43,2%	2	35,1%
I am aware of all the major changes taking place in my company	13	17,6%	1	17,3%	2	27,0%	1	20,5%	1	14,9%
I know the service/ final product of my company	5	6,8%	9	12,2%	1	16,2%	3	41,9%	1	21,6%
My work is useful	1	1,4%	3	4,1%	5	6,8%	2	39,9%	3	48,6%

3.3. Factors related to the physical environment

52.7% of the respondents spend a lot of time in tiring positions, while 68.9% are forced to make repetitive movements.

On the other hand, 68.9% believe that they work in clean premises, only 41.9% find an inconvenient noise at their posts and 64.9% say that lighting is adequate.

63.6% feel that their work environment does not pose a danger to their health and safety (Table 4).

Table 4: Stress and QWL factors related to the physical work environment

Items	Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly disagree	
	n	%	n	%	n	%	n	%	n	%
I spend a lot of time in tiring positions	5	6,8 %	1	18,9 %	1	21,6 %	2	31,1 %	1	21,6 %
In my work, I am led to make repetitive movements	6	8,1 %	7	9,5 %	1	13,5 %	3	44,6 %	1	24,3 %
I'm wasting my time looking for tools / equipment before starting my work	9	12,2 %	1	25,7 %	6	8,1 %	2	31,1 %	1	23,0 %
The lighting of my workstation is adequate	5	6,8 %	1	20,3 %	6	8,1 %	3	50,0 %	1	14,3 %
There is constantly an annoying noise at my workstation	9	12,2 %	2	35,1 %	8	10,8 %	1	24,3 %	1	17,6 %
The premises of my company are clean	4	5,4 %	1	13,5 %	9	12,2 %	3	50,0 %	1	18,9 %
I have to handle dangerous substances in my work	2	28,4 %	2	29,7 %	6	8,1 %	1	21,6 %	8	10,8 %
I feel safe at work	7	9,5 %	1	18,9 %	1	18,9 %	2	36,5 %	1	16,7 %
The premises of my work are a danger to my health and safety	1	20,3 %	1	25,7 %	1	17,6 %	1	24,3 %	9	12,2 %

3.4. Factors related to social and relational environment

The survey found a high level of support from colleagues, with 74.3% of respondents feeling that their colleagues were there when needed, 63.5% saying their colleagues were willing to listen to their personal concerns, and 90.5% like teamwork..

Support from superiors is also noted; 68.9% think that their superiors are comprehensive in case of non-response to their expectations.

50% feel that their superiors listen to their personal concerns, and 58.1% feel that their superiors give them enough time to explain their tasks.

On the other hand, only 36.5% are satisfied with their wages and 74.3% feel that wages are not administered in a fair way (Table 5).

Table 5: Factors related to Social and relational environment

Items	Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly disagree	
	n	%	n	%	n	%	n	%	n	%
My colleagues are ready to help me when needed	2	2,7%	7	9,5 %	1	13,5 %	3	45,9 %	2	28,4 %
My boss is understanding when my job does not meet his expectations	2	2,7%	1	17,6 %	8	10,8 %	3	48,6 %	1	20,3 %
My colleagues are willing to listen to my personal problems	6	8,1%	1	14,9 %	1	13,5 %	3	47,3 %	1	16,2 %
My boss is willing to listen to my personal problems	12	16,2 %	9	12,2 %	1	21,6 %	2	37,8 %	9	12,2 %
My boss takes the time to explain to me what he expects of me	7	9,5%	1	17,6 %	1	14,9 %	3	41,9 %	1	16,2 %
I like teamwork	1	1,4%	3	4,1 %	3	4,1 %	3	47,3 %	3	43,2 %
I am satisfied with my salary	18	24,3 %	1	20,3 %	1	18,9 %	2	33,8 %	2	2,7 %
Salaries in my company are fairly granted	18	24,3 %	2	33,8 %	1	16,2 %	1	18,9 %	3	4,1 %
My boss congratulates me when I do my job well	11	14,9 %	1	16,2 %	9	12,2 %	2	39,2 %	1	17,6 %
My colleagues recognize when I do a good job	5	6,8%	9	12,2 %	1	17,6 %	3	51,4 %	9	12,2 %
My work is recognized	6	8,1%	7	9,5 %	9	12,2 %	4	54,1 %	1	14,9 %

3.5. Factors related to balance between professional and personal life

50% of the surveyed are required to work overtime, 45.9% have the necessary time for their families and friends. 55.4% attest that they cannot choose the holiday period that suits them. 59.5% feel that they do not have enough days off (Table 6).

3.6. Association between socio-demographic characteristics and perception of QWL and stress

Younger age groups (Fig 1) appear to have a better perception of quality of work life (53.85% and 56% for 20-30 and 30-40 groups respectively), but this is not statistically significant ($p > 0.05$). The prevalence of a good quality of life at work is significantly higher in men (70%) versus (36%) for women ($p < 0.05$) (Fig 2). Singles have a better perception of quality of work life at 67% followed by married respondents with children at 51% (Fig 3) but this finding doesn't seem statistically significant ($p > 0.05$). In terms of education level, respondents with a level of at least 3 years have a better perception of quality of work life with a prevalence of 72% ($p < 0.05$) (Fig 4). Experience in the company doesn't seem to affect the perception of QWL ($p > 0.05$). Table 6: Stress and QWL factors related to the balance between personal and professional life

Items	Strongly Disagree		Disagree		Neither Agree or Disagree		Agree		Strongly disagree	
	n	%	n	%	n	%	n	%	n	%
I often work overtime	9	12,2 %	16	21,6 %	12	16,2 %	2	35,1 %	1	14,9 %
I have time to spend with my family and friends	4	5,4%	23	31,1 %	13	17,6 %	3	40,5 %	4	5,4%
I can choose the vacation period that suits me	14	18,9 %	18	24,3 %	9	12,2 %	2	33,8 %	7	9,5%
I have enough days of paid leave a year	14	18,9 %	15	20,3 %	15	20,3 %	2	29,7 %	8	10,8 %
I need to take a long commute daily to get to my job	13	17,6 %	26	35,1 %	5	6,8%	1	14,9 %	1	25,7 %
My work schedules are flexible	14	18,9 %	27	36,5 %	12	16,2 %	1	23,0 %	3	4,1%
I finish the work at home due to lack of time	2	2,7%	21	28,4 %	23	31,1 %	1	24,3 %	1	13,5 %

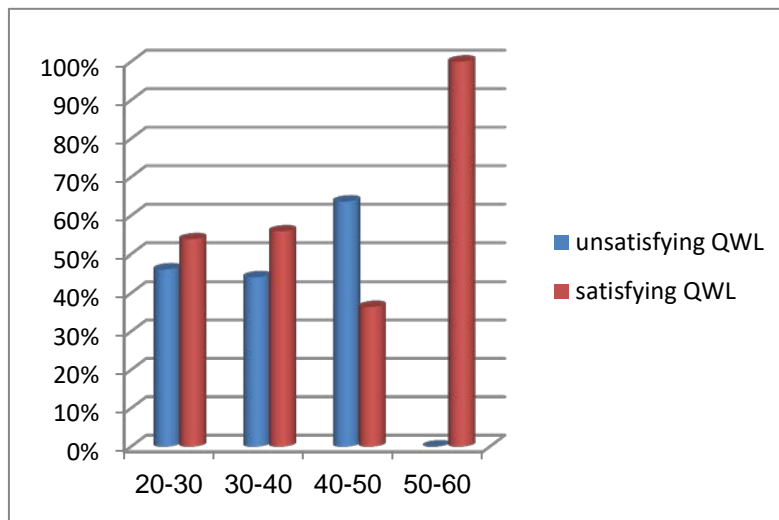


Figure 1: Association between Age and QWL

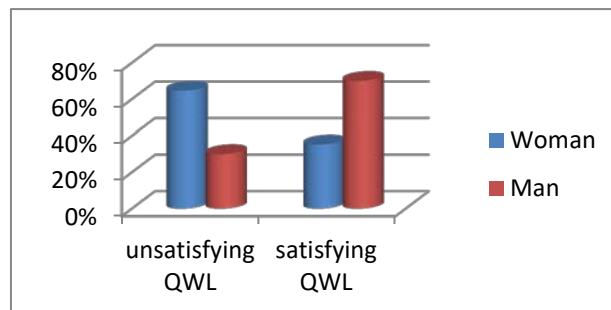


Figure 2: Association between gender and QWL

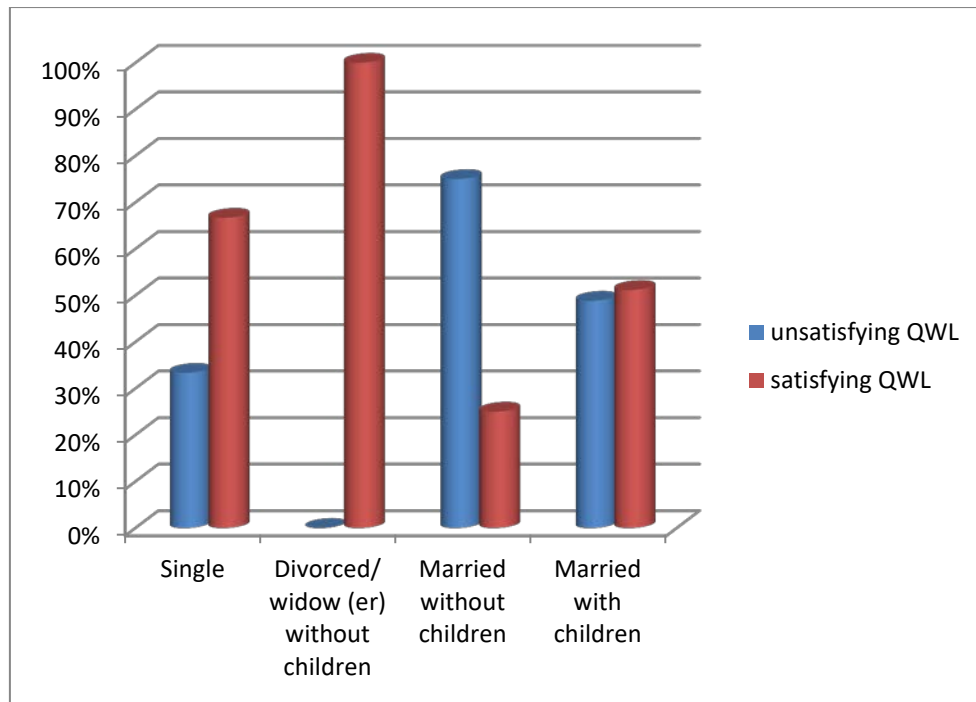


Figure 3: Association between family situation and QWL

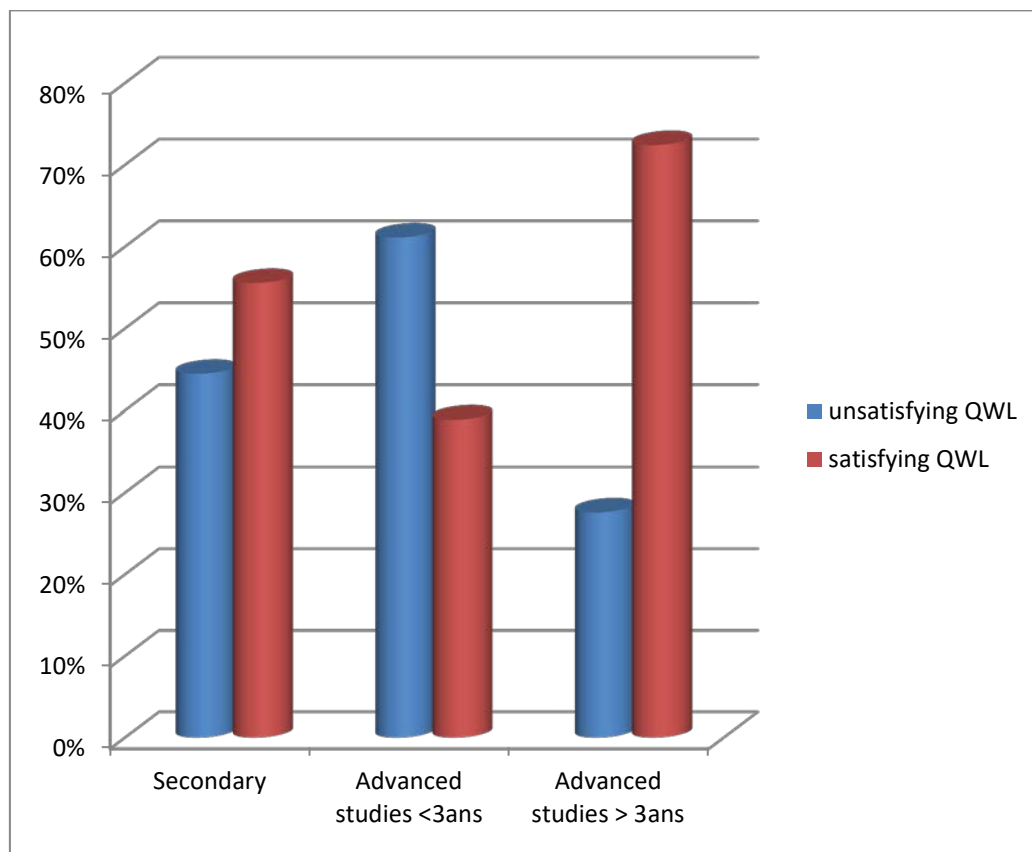


Figure 4: Association between Study level and QWL

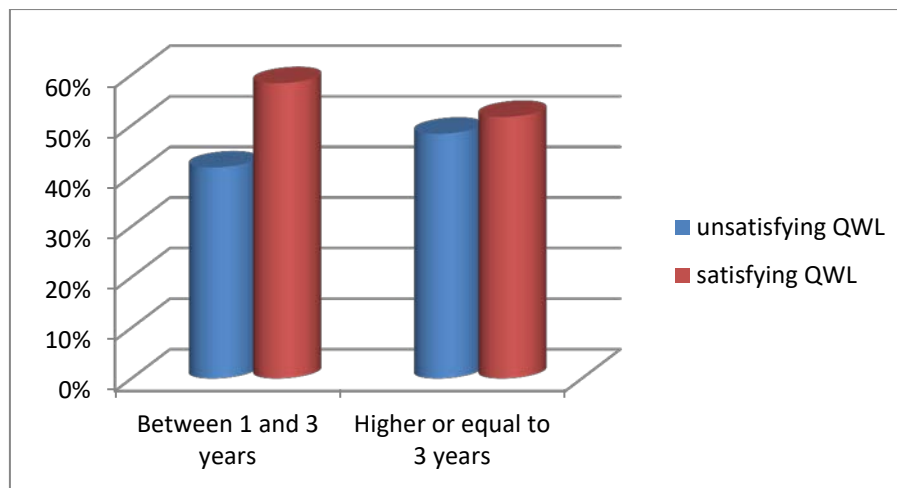


Figure 5: Association between experience in the company and QWL

4. Discussion

A report on emerging issues in the aerospace industry [4] indicates that workers in these industries may face situations of suffering, ill-being and stress, often due to lack of recognition, employment or factors related to the physical working environment. Yet only few epidemiological researches on stress and QWL are interested in this population.

Our study is therefore established, in order to enrich the literature on stress assessment and QWL in aerospace field as well as the literature on QWL and occupational stress in Morocco, given the lack of research in this field [2].

Results of our study:

As for the content of the work itself, the respondents assert a rather important job demand, same thing for the workload and the long moments of concentration necessary to carry out their work. On the other hand, the decision latitude of the respondents seems high and they claim to have the necessary qualifications to carry out their tasks.

Based on Karasek's occupational stress model [5], even if the job demand is important, this configuration allows the stimulation of the skills of the staff, which Karasek believes is an "active" and not a "stressed" worker.

The assessment results of factors related to the physical environment don't seem to indicate a totally good situation of QWL nor the opposite, whether for light, lighting or ergonomics. Yet, a French study [6] indicates the relationship between stressful situations and job ergonomics, where a greater frequency of stress is linked to an unsatisfactory ergonomic score. On the other hand, the answers are predominantly affirmative in terms of the non-hazardous nature of premises.

Concerning factors related to the social and relational environment, it appears that staffs generally believe there

is a satisfactory level of support from colleagues and the hierarchy, which according to Karasek [7] helps to cope with stressors and thus reduce its prevalence and impact on health. On the other hand, it does not seem the same for the monetary recognition, which are considered unsatisfactory according to the respondents, which, according to the model of Siegrist [8], can be a source of stress, the effort not being balanced with the rewards.

On the other hand, for factors related to the balance between personal and professional life, the results seem to be scattered, this could be explained by the individual opinions and not the working conditions influencing the quality of work life of the staff. A Moroccan study on personnel in anesthesia and reanimation [9] attests, however, that the work during the weekend is perceived as difficult by the majority of the people surveyed. Another study [10] indicates a very strong link between reconciliation between work and private life and intentions to leave the job.

Also in this study, age does not significantly affect the perception of quality of work life, which is asserted by some studies [11], and refuted by others, such as the case of a study [12] assessing stress among medical personnel in Morocco. The same result is asserted by another Moroccan study [13] among taxi drivers. A Spanish study [16] also support this finding that younger age groups perceive less job demand.

The prevalence of a good QWL is significantly higher in men than in women, this result is asserted by a Moroccan study [12] among medical personnel. The French national survey SUMER [14] also indicates a significantly higher probability in women to suffer from occupational stress.

The surveyed population which is single has a better perception of the QWL at 67% followed by married respondents with children, but this doesn't seem relevant statistically. A Moroccan study [12] also noted there is no influence of the family situation parameter on the perception of stress. In this survey, interviewers were not directly asked to specify whether they live alone or accompanied, yet a Finnish study [15] stated that workers living alone were 80% more likely to be depressed.

Respondents with an education level of at least 3 years have a better perception of the QWL, and this finding is statistically significant. A Moroccan study [13] among taxi drivers also demonstrated a link between QWL and education level, but conversely to our study, the stress score increased with education level.

The seniority at work in this study does not influence the perception of the quality of life at work, but this link seems controversial in the literature. Indeed, studies have found that there is no impact of professional seniority on the state of stress [12], contrary to a Moroccan study where occupational stress score increases with seniority [13], similar result were found by the SUMER survey [14], where newly hired employees are less exposed to stress.

Since the sociodemographic parameters of gender and education level seem to impact the perception of quality of worklife and occupational stress, the sensitivity of the questionnaire seems to be satisfactory. This is further evidence of the validity of the psychometric qualities of the used questionnaire.

Although the majority of the results are statistically significant, the number of the respondents to the survey is

not very high. An awareness-raising effort around the study could have increased the number of participants.

5. Conclusion

This study highlights the prevalence of occupational stress according to each socio-demographic group and reveals the factors related to a low perception of quality of worklife by the aerospace company staff. Thereby, this survey also helps providing additional information for the understanding of quality of worklife and occupational stress on a larger scale.

6. Recommendations

According to a Moroccan study [2], there is little data on the perception of quality of worklife and occupational stress in the Moroccan context, and most of them were conducted in medical and transport fields. This research allowed determining data in an aerospace company, but more research projects should cover other professional domains, to enhance knowledge about occupational stress and quality of worklife, allowing minimizing related accidents and occupational diseases.

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