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About this document

This document feedbacks on the questionnaire performed and referent to Deliverable D1.1. The questionnaire was answered by 100 workers from the PSA – Mangualde plant, in regard to the workplace ergonomics, stress management, physical training and nutritional balance. The analyses of the questionnaire performed in this deliverable will allow to set the base for the necessities identified at the PSA and that are in line with the project OptimaSteel. The thorough exercise reported in D1.2 will aid to select the best methods and technologies to be implement during the Pilot demonstration (WP3), and ultimately will promote better working conditions for the employees.

[1] PU = PUBLIC
PP = Restricted to other program participants (including the Commission Services)
RE = Restricted to a group specified by the consortium (including the Commission Services)
CO = Confidential, only for members of the consortium (including the Commission Services)

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Abbreviations and acronyms

BMI	Body Mass Index
bpm	Beats per minute
EWCS	European Working Conditions Surveys
JR	JOANNEUM RESEARCH
PSA	Peugeot Citroen Automoveis Portugal, S.A.
WP	Work Package
y.o.	Years Old

1. Introduction

The world is facing a new demographic situation, in which the elderly will soon outnumber the younger people. This remarkable phenomenon is being driven by the decline in children entering the society and the population living longer. This progressive demographic shift demands for solutions to be sustainable for countries and states' economy. The economic burden is caused by fewer active young people to work and the emerging importance of chronic and degenerative diseases[2].

Considering the demographic perspective, the vision is shifting to add value to older employees and the focus is to keep them active for longer.

It was identified that employees who face a fast pass - working under tight deadlines, exposed to physical risk factors and quantitative high mental demands, such as in the steel industry, are more likely to experience physical, emotional and mental exhaustion.[3]

Considering the demographic challenges and the problematics identified in the steel industry, the OptimaSteel project aims at identifying, assessing, demonstrating and disseminating towards the industry, state-of-the-art technologies and methods to improve the quality of life of the PSA Groupe – Mangualde Plant employees aged 50+.

The approach will take on a holistic perspective by combining ergonomic solutions, physical activities, improvement of nutritional balance and stress management.

This deliverable is part of **WP1 – Scanning of Workplace Health and Wellbeing Technologies and Solutions**. Its main aim is to understand the needs at PSA – Mangualde to provide successful ageing at work by benchmarking the solutions and technologies being implemented in other industries and under investigation, which are suitable for the reality of the automotive industry's environment.

Deliverable 1.2 gathers the answers provided by PSA employees to the questions from Deliverable 1.1. The thorough analyse of the responses will support the project to set up the baseline with demand for new solutions (Task 1.2).

[2] https://www.who.int/ageing/publications/global_health.pdf

[3] Shirom, A.; Melamed, Samuel; Toker, Sharon; Berliner, S.; Shapira, I.; January 2015; "Burnout, mental and physical health: A review of the evidence and a proposed explanatory model"; Vol 20; International Review of Industrial and Organizational Psychology. https://www.researchgate.net/publication/285185175_Burnout_mental_and_physical_health_A_review_of_the_evidence_and_a_proposed_explanatory_model

2. The questionnaire

The OptimaSteel project aims to tackle four pillars: i) ergonomics to reduce musculoskeletal disorders, ii) nutritional balance, iii) stress management, and iv) physical training. The questionnaire focused on those themes to set the bar for the current situation at PSA-Mangualde and to identify the workers' needs and areas for improvement.

The questionnaire was designed to cover the four pillars of concern for the project, and was constituted by five sections: digital literacy, wellbeing at work, health and wellbeing, ergonomic assessment and clinical data. The questions included in each section aimed to acquire data on the specific objectives as detailed in Table 1.

Table 1 - Pillars of the OptimaSteel questionnaire

OptimaSteel Questionnaire		
Pillar	Question Section	Objective
i) Ergonomics to reduce musculoskeletal disorders	Ergonomic Assessment	Assess the ergonomic needs of the workers at specific sectors of the line production at the PSA-Mangualde
ii) Nutritional Balance	Health & Wellbeing	Assess the workers' awareness for the importance of physical exercise, and healthy diet and regular medical check-ups
iii) Stress management	Wellbeing at work	Assess the psychological health of the employees
iv) Physical Training	Health & Wellbeing	Assess the physical health of the employees, and their preferred physical activities
	Digital Literacy	Assess the level of digital literacy of the employees to plan the technologies and innovations to implement during WP3 – Demonstration of solutions at industrial site, possible to implement
	Clinical Survey	Collect health data before the implementation of the healthy measurements to evaluate the impact of the project

Besides understanding the needs of the employees at the PSA Groupe, it was necessary to perceive their culture, literacy, and behaviour as a team, in order to facilitate the integration of the new solutions during the pilot demonstration.

The ergonomic assessment was an easy topic for the employees to feedback upon, considering that is present in their everyday life at work. Therefore, it was easier for them to comprehend the questions and answering.

Concerning the questions related to health and wellbeing, they were challenged to assess their personal life and habits and assess their habits and behaviour outside work.

Nevertheless, the overall process before the questionnaire was designed in a way ensuring that the employees had a full understanding of the OptimaSteel project, its aims and expected impacts, and their importance for the implementation. The awareness process consisted in presenting the OptimaSteel project in the format of a talk presentation followed by the Informed Consent. Before signing it, the employees were given the opportunity for asking all the questions they had.

The clinical assessment by the nurse was the step before performing the questionnaire. The nurse performed the clinical assessment and offered to each employee a card with their weigh, height, blood pressure and heart rate, which allowed them to fill in the last questions of the questionnaire.

The software Google Forms[4] was the platform used to assess and tick the answers on the questionnaire. PSA - Mangualde made available computers for the operators to fill in the forms.

The production line is composed by 4 main areas:

- Bodyshop: in this area is built the chassis and the structure of the car. The main process is spot welding that guarantee the structure resistance.
- Painting: here the chassis suffers chemical treatments for corrosion protection, after that the automotive is painted and controlled;
- Assembling: in this phase all the pieces that constitutes the car are assembled and giving both to the final automotive;
- Quality Control: in this final step all the cars are inspected.

3. Methodology for the results analysis

In order to reach meaningful conclusions and understand the different needs across the production line, some questions have been correlated mainly with the workstation Since the sample was not homogenous in terms of respondents per factory' workstation, to avoid biased conclusions the results of the questionnaire will be presented by the percentage of answers versus the total of answer for each question.

[4] https://www.google.com/forms/about (last visited: 24 September 2019)

4. The Results & analysis

The results will be presented graphically, in percentage, by answers to the questions followed by a brief analysis and other graphics that relate various question to better understand the results.

0. Please indicate your workstation:

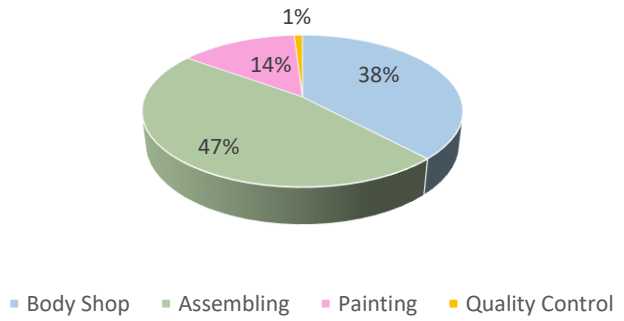


Figure 1 Answers per productive area

As appreciable from Figure 1, the sample is not homogeneous, most of the participant (47%) work in the assembling area and only 1 participant works in the quality control area (1%). Thus, the analysis for this latter area is not representative.

1. Select your age range:

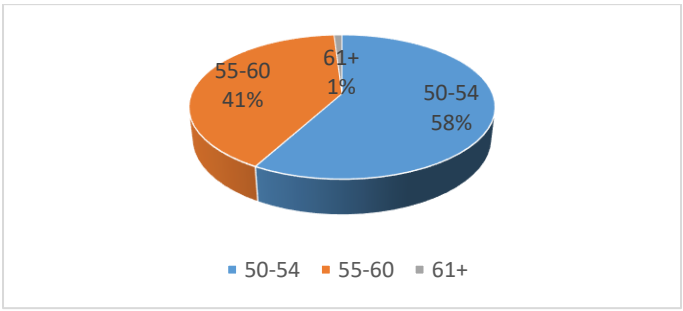


Figure 2 Distribution of age range

The Figure 2 demonstrates that overall 58% of the employees are included in the age range 50-54 – the majority, 41% in the 55-60, and only one respondent is more than 61 years old. As the analysis based only on one answer wouldn't be significative, from now on, we will consider only two age range: 50 to 54-year-old and 55 to 60 or more.

The analysis per area (Figure 3) shows that the area with more workers with age from 55 to more than 60 – excluding Quality area due to lack of representativeness in the sample – is the Painting area with 57% of workers with more than 55 y.o.. On the other hand, in the Assembly area only 30% are more than 55y.o..

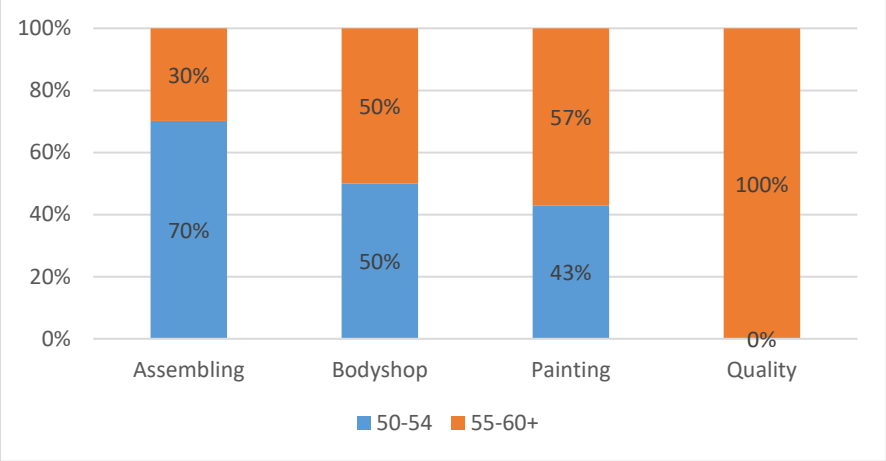


Figure 3 Age distribution within productive areas

4.1 Digital literacy

The following questions (Q2 – Q4) aim to understand the digital literacy of employees. In this section only the general population answers and the age distribution will be analysed since is not relevant to which area participants belong.

2. Do you have a smartphone?

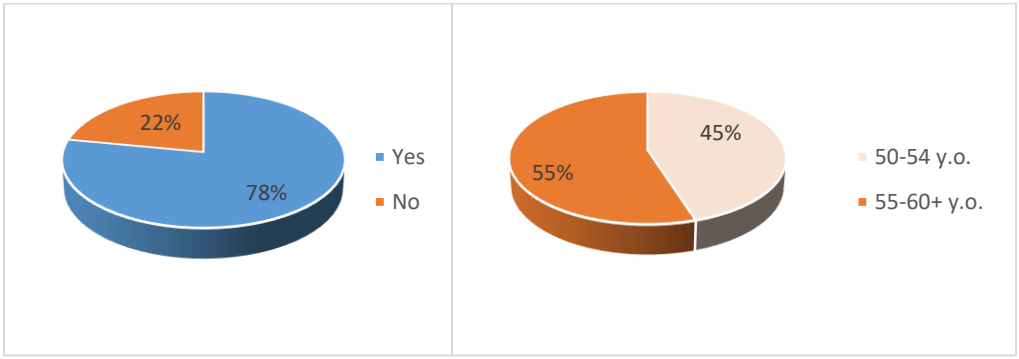


Figure 4 Posses of smartphone and age distribution for employees that do not own one

The Figure 4 assesses whether the employees possess a smartphone and the age distribution of ones that do not possess one. Even though most of the employees (78%) own a smartphone, 22% of participants do not. Looking at the age range of employees that do not own a smartphone, it is not surprising that the eldest population (55-60) is the majority (63%) of employees without smartphone. Only participants that answered "yes" to Q2, thus own a smartphone, were allowed to answer to Q.3 and Q.4.

3. What is your opinion regarding the use of a smartphone in the factory premises?

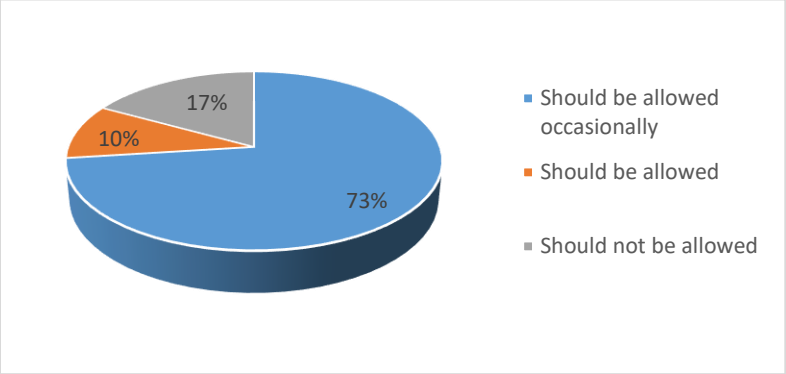


Figure 5 Use of a smartphone in the factory

As shown in Figure 5, eighty-three percent of smartphone owners think that the use of personal phone should be allowed or it should be allowed only occasionally, while only 17% believe that is should be forbitten.

4. How confident are you to use applications such as Facebook/Instagram/Gmail on your phone?

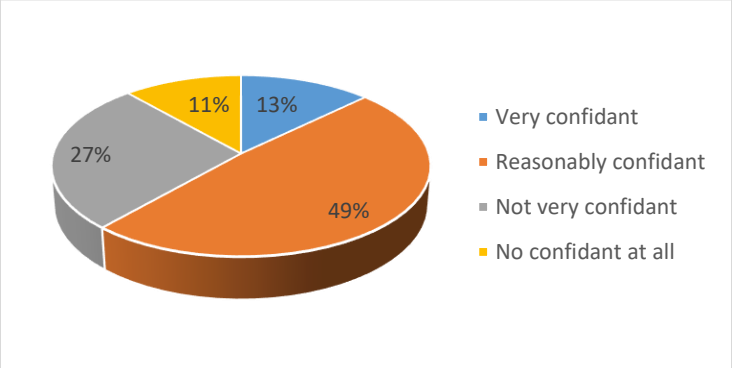


Figure 6 Confidence in using social apps

Thirteen percent of the employees are very confident in using smartphone applications, however looking at the age range, only 2 employees within 55-60 y.o are very confident.

From the employees who answered “reasonably confident” accounting for 49% of total, the majority is included in the 50-54 age range (65%).

The employees who answered that are “Not very confident” and “Not confident” account for 27% and 11%, respectively. The age range of the participants in these categories are included in all the age ranges, majority being included in the 55-60.

4.2 Injuries, work absence and stress issues

In this section, the incidence of injuries and absence form work will be analysed. Since work absence might be related not only to physical issues, the psychological aspects will be also analysed. The analysis of distribution of this kinds of issues between areas is relevant, thus, when appropriated this analysis will be presented among age distribution.

5. In the last 12 months, did you suffer any injury?

45% of participants suffered injuries during the last 12 months. In general, 78% of participant with 50-54 y.o suffered an injury. Mover, contrarious to the expected, looking at Figure 7 , within the employees that suffered and injury a majority belongs to the age group between 50-54 and not 55-60+.

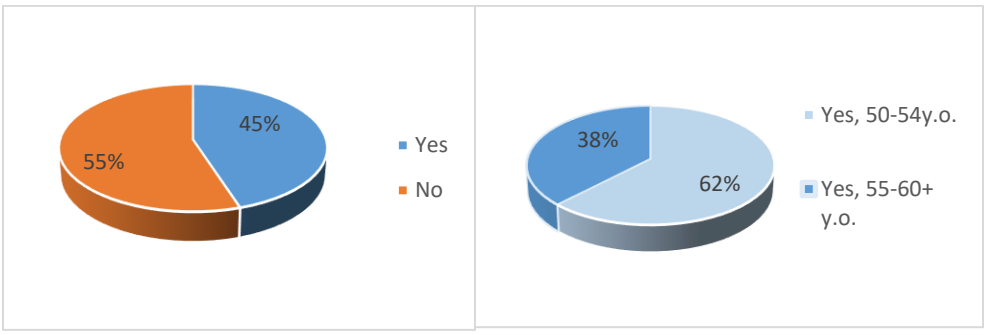


Figure 7 Injuries suffered in the last 12 months and age distribution.

The Figure 8 is presents the percentage of positive answers divided per each age range in each productive area within the age range. For example, in the Assembly area from the total of 47 participant, 33 are 50-54 y.o. and of this 33, 16 suffered an injury representing 48% of the total.

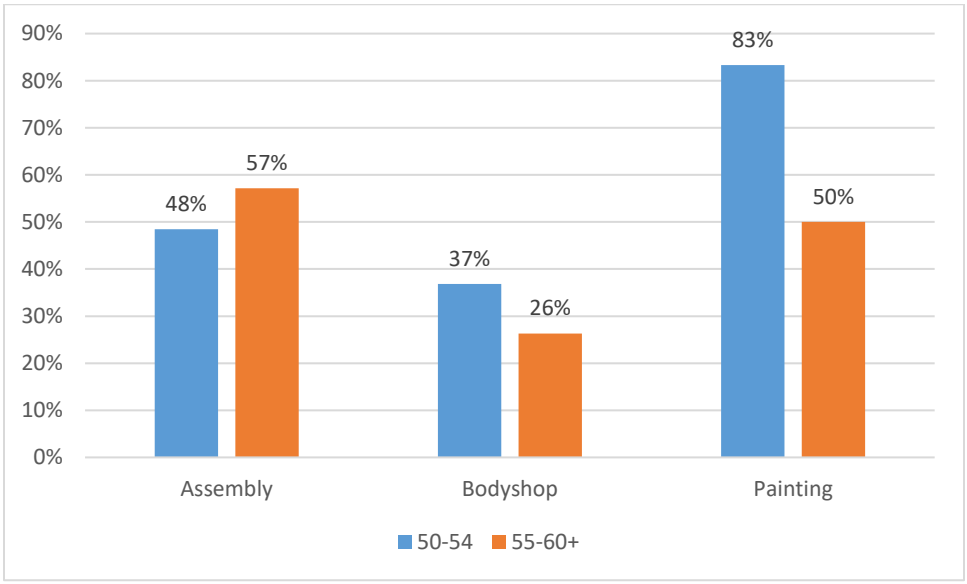


Figure 8 injuries within age range per productive area

6. How many days were you absent from work for health reasons in the last 12 months?

Even though, 45% of the employees reported to suffer from an injury in the last 12 months, the percentage of the ones who were absent from work for health reasons accounts only for 37%. This already expected result is the explanation for the need of the following question (Q.7), where it was asked if over the last 12 months one has work even feeling ill. More than half of participants (51%) answered positively to this question.

Looking at age distribution, the results indicate that 35 of the 42 (83%) of respondents that are 55 to 60 or more has registered few absences (up to 5 days), while 50-54 group registered 79%, meaning that the elder group actually present less absences.

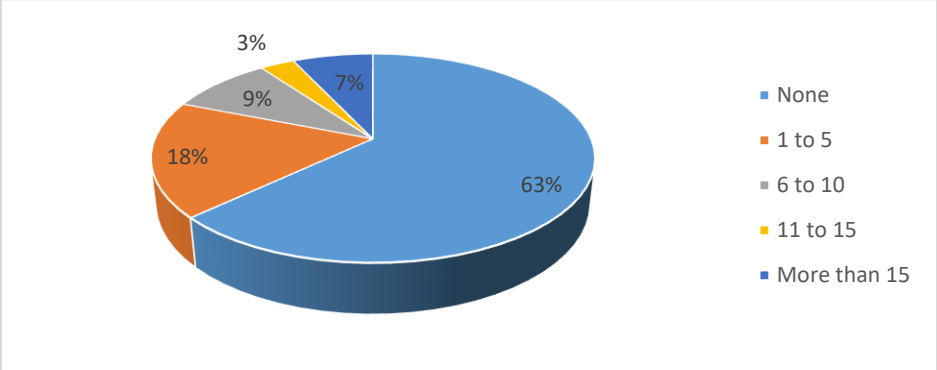


Figure 9 Absence from work for health reasons in the last 12 months

Analyzing the absences per area, is clear that there is a predominance of longer absences (6 to 15 days or more than 15 days) communally to all the areas. The area experiencing more absence is the Bodyshop were 93% of the Bodyshop' sample has registered long absences, followed by the Assembly with 87% and Painting area with 74%. The only one participant from Quality area has registered less than 5 days of absences during the last past 12 months.

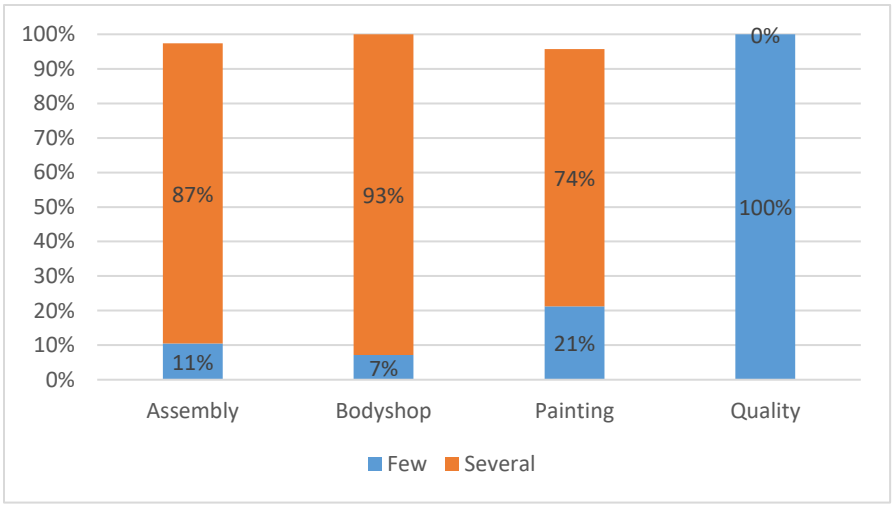


Figure 10 Absences per productive area

8 Do you think you will be able to do your current job or a similar one until you are 66 years old?

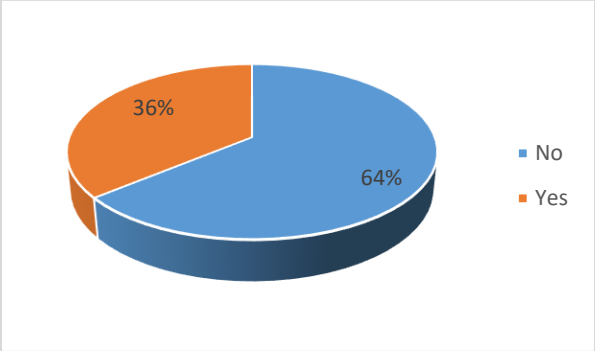


Figure 11 Working until being 66 years old

The majority of the workers – 64%, believe that they cannot continue to perform their tasks, or similar ones, until they are 66 years old (Figure 11). Looking at the age range, the proportion within the participant that answered "no" are mostly even, 51% of participant between 50-54 and 49% of 55-60.

Analysing the distribution across the productive areas (Figure 12), is clear that, excluding the Quality area due to lack of representativeness, the Assembly area is the one where most of the participants (66%) believe that they won't be able to work being 66 or more.

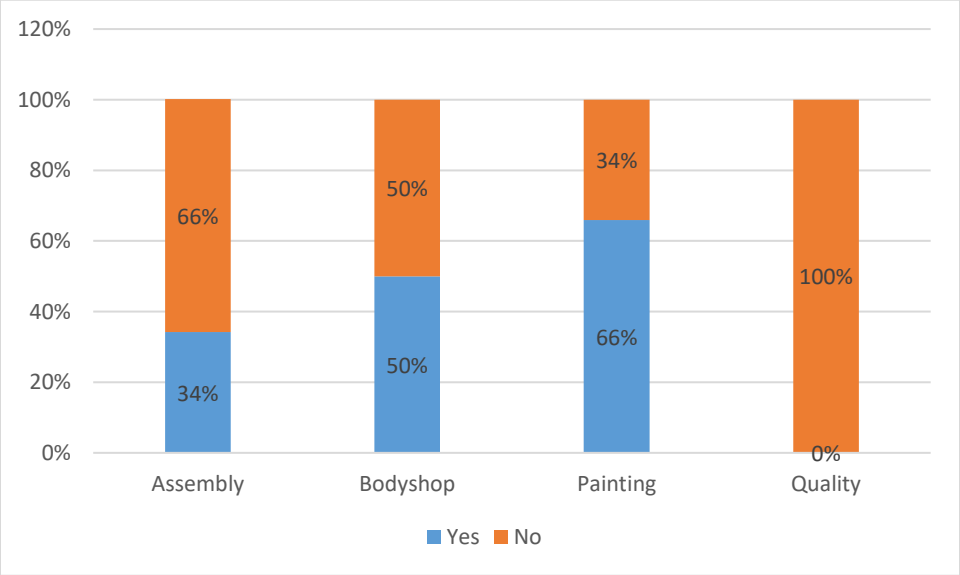


Figure 12 Perception of capacity to work being 66 y.o. per productive area

9 How often do you feel too tired to do leisure activities after work?

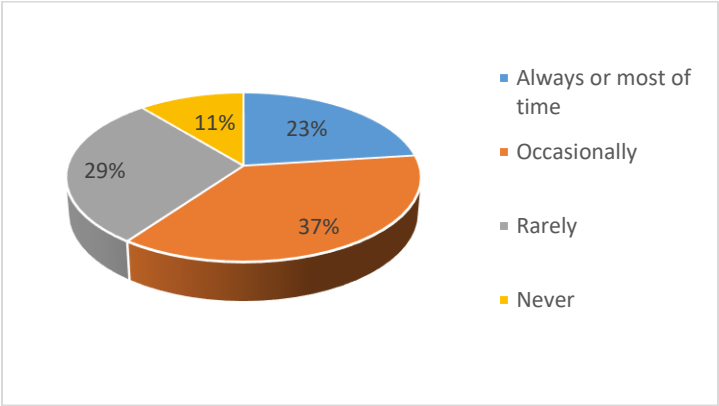


Figure 13 Tiredness after work

Figure 13 indicates that approximately one quarter of the employees feels constantly too tired to engage in hobbies. When comparing the number of "always or most of the time" vs the entire sample, 29% belong to the 55-60+ y.o. group and 19% to the other group.

However, when analysing the 23% of participant that answered "always or most of the time", 52% belongs to the 55-60+ y.o group (Figure 14).

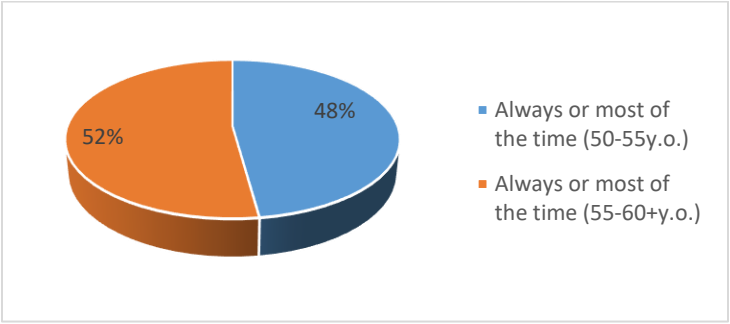


Figure 14 Tiredness within age distribution

Figure 15 shows the perception of tiredness across the productive areas. The area with more participant that reported that they feel always or most of the time too tired to do any leisure activity, is the Assembly with 26%. Apparently, the area with lowest perception of tiredness is the Painting area, excluding the Quality area where the only participant has replied that he rarely feels too tired.

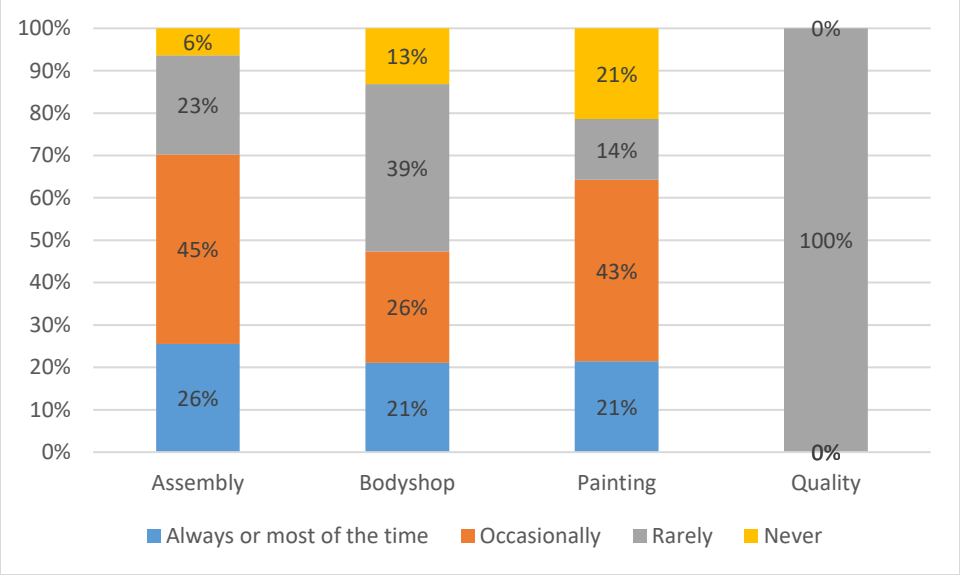


Figure 15 Tiredness distribution per productive area

10 How often do you feel emotionally distressed at work?

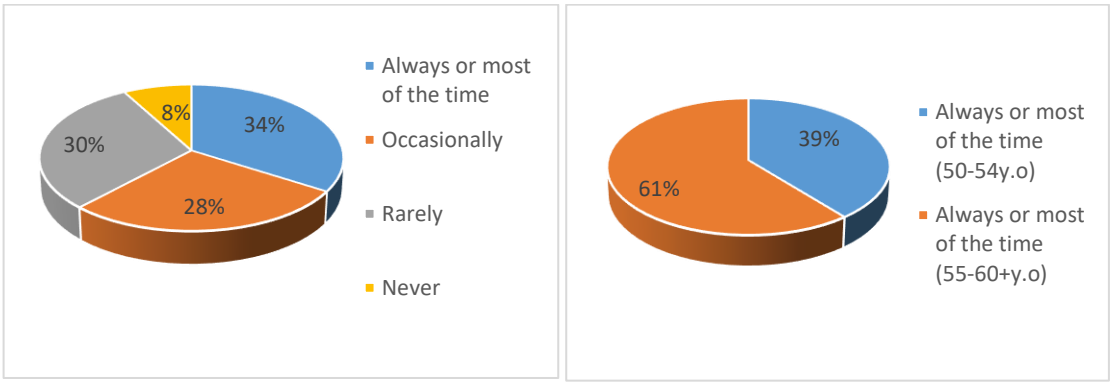


Figure 16 Emotional stress at work

Thirty-four percent (Figure 16) of the workers feel emotionally distressed at work, but is not related with the age range (47% 50-54 vs 53% 55-60+, from the "always or most of the time stressed"). However, analysing the entire sample. It results that 43% of 55-60+ y.o. group is always or most of the time stressed. Looking at the different productive areas, the Assembly line appears to be the area most affected by stress (Figure 17), while the Painting is the rea less affected. However, even in the Painting area 36% of participants feel always or most of the time stressed and only 29% never feel that way.

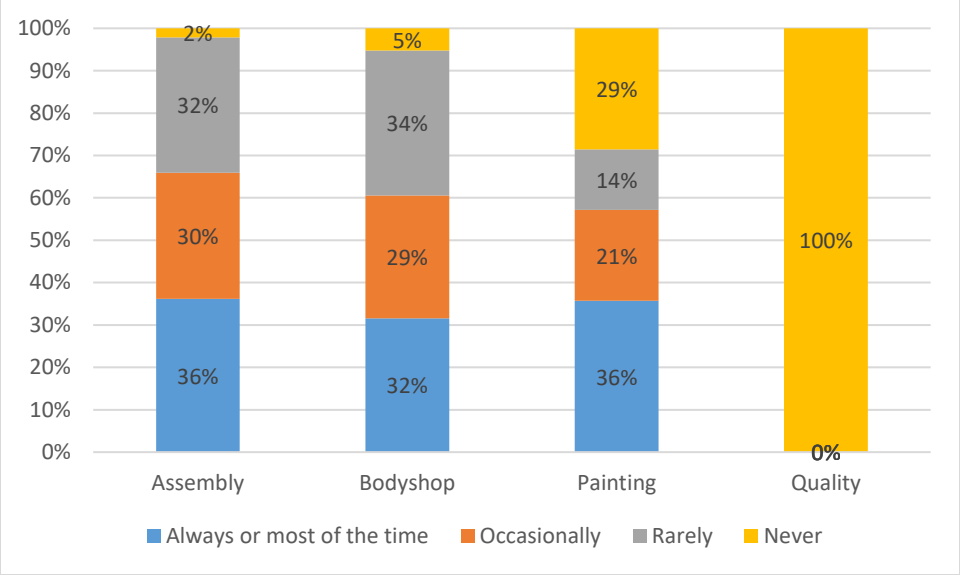


Figure 17 Emotional stress across the productive areas

11 How would you describe the teamwork at your workplace?

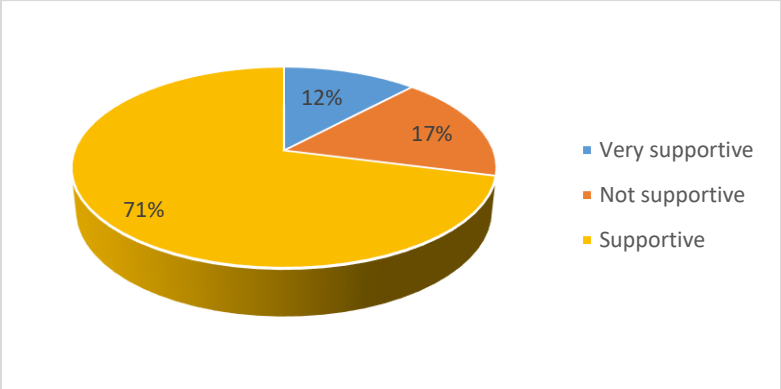
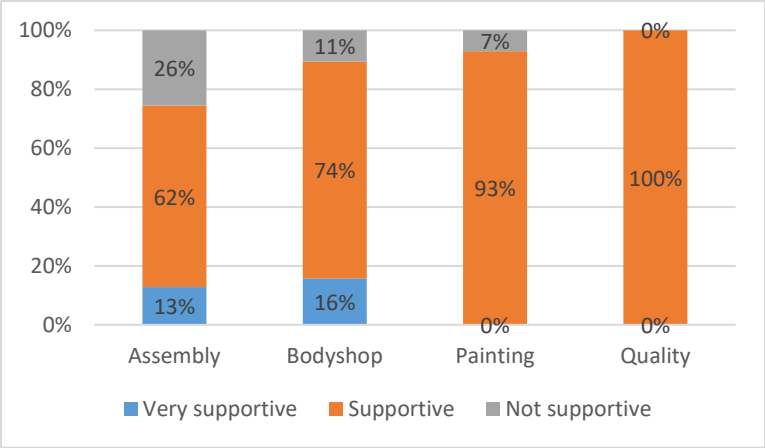


Figure 18 Perception of the teamwork

According with the results, the environment at the PSA is very supportive, corresponding to 71% of those employees who consider that they can count on the support from their colleagues. However, 17% responded that is not supportive, with almost equal distribution between employee of 50-54 and 55-60. Relating this question with the previous one, we discover that 13% of participant answered that the teamwork is not supportive and, at the same time, they are always or most of the time stressed.



Across the productive areas, the Assembly is the area where there are more "Not supportive" answers (Figure 19). However, in the Painting area there is no "very supportive" answer.

Figure 19 Teamwork perception across productive areas

4.3 Physical activities and health habits

Physical exercise is a fundamental aspect for the wellbeing and an active ageing, the following question Q.12 to Q16 aim to understand habits and importance given to those aspects by participants. In this section, the analysis per productive area will not be performed since the canteen is used by everyone with no distinction per area. Moreover, the training activities that might be developed in the pilot will embrace all the participants beside their area.

12 How often do you practice physical activities (examples: walks, bicycle, run, gym, dance, etc)?

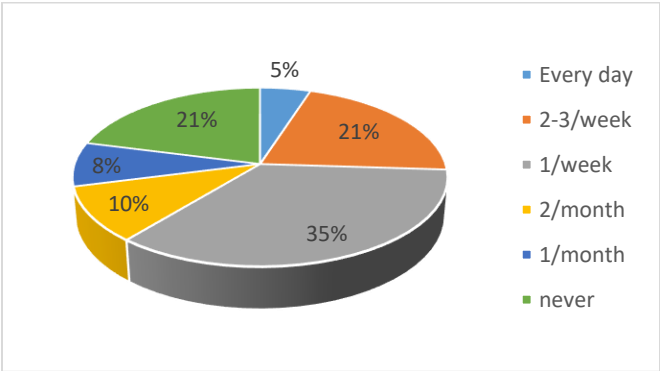


Figure 20 Frequency of physical activities practices

39% of the participant practice few physical activities considering "few" as never, once per month, twice per month (Figure 20). The distribution across age ranges, is similar since from this 39%, 53% are included in the 50-54 age range.

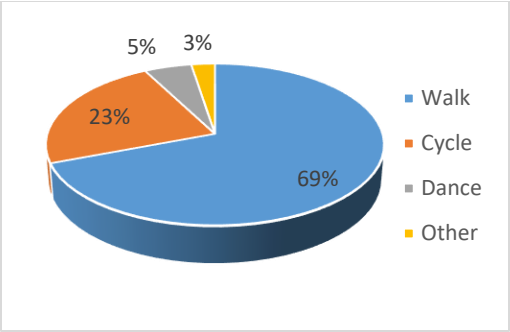


Figure 21 Preferred activities between not very active participants

Between participants that practice few physical activity, 69% consider walking as their favorite activity, while 23% prefer to cycle; this might be important to take in account during the design of the pilot (Figure 21). Likewise, between participants that frequently (once per week, twice per week, everyday) practice, almost 69% prefer to walk and 20% to cycle.

Even if 39% of participant practice few physical activity, 95% replied that physical exercise is important or very important for their well-being (Q.14, Figure 22).

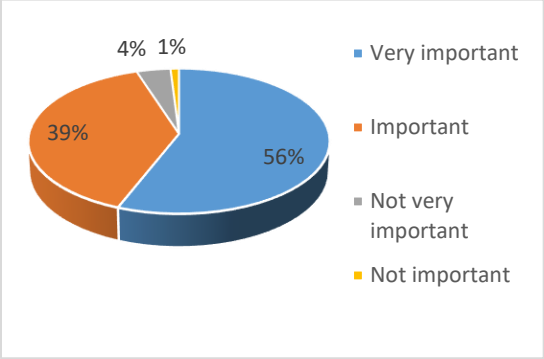


Figure 22 Importance of the regular physical exercises

Moreover, 88% of the people that replied that is important or very important, answered to Q.15 that if they had more time, they would practice more.

Q.16 asked about participants preference in regard the company they prefer during physical activity (Figure 22).

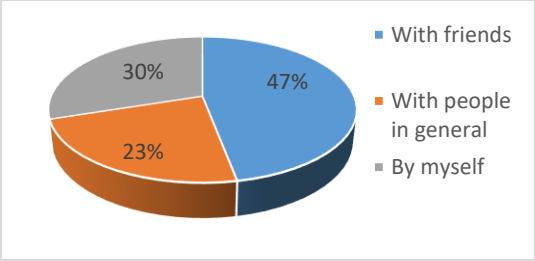


Figure 23 Company preferred during exercises

Almost 74% of people that prefer to practice with people in general prefer to walk, likewise more than 70% of respondents that prefer to exercise with friends prefer also to walk.

In order to have a more complete vision about how much participant care about their health, the next questions are about the frequency with which they check-up.

17. How often do you have your blood pressure and heart rate checked?

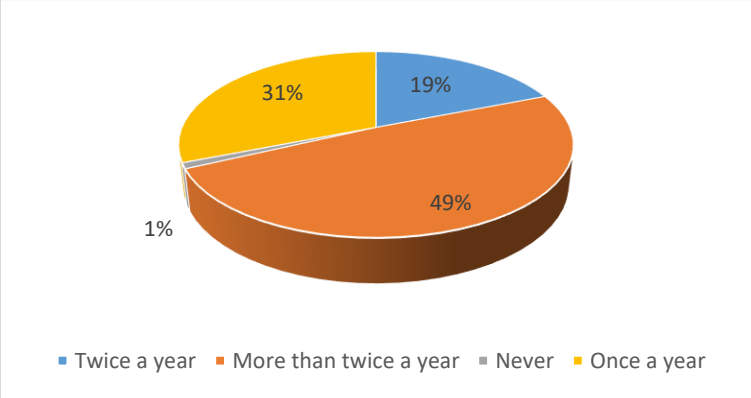


Figure 24 Frequency of checks on have their blood pressure and heart rate checked

18. How often do you have your blood cholesterol checked?

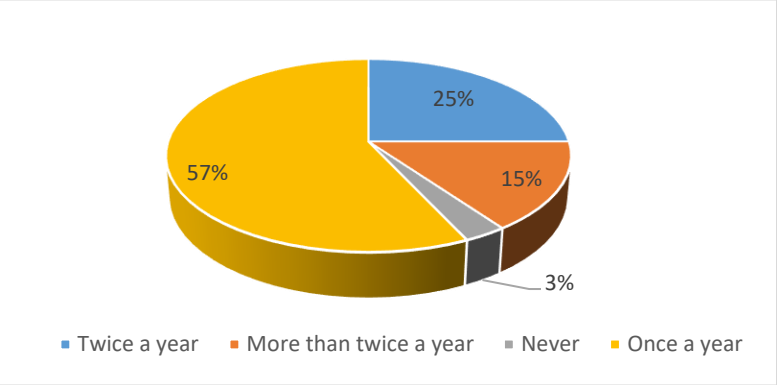


Figure 25 Frequency of blood cholesterol checks

Figure 24 and Figure 25 demonstrated that the checkups are being performed by the employees, as required in the PSA groupe.

The following questions are focused on the dietary habits of the participants.

19. How important do you think is a healthy diet has for your wellbeing?

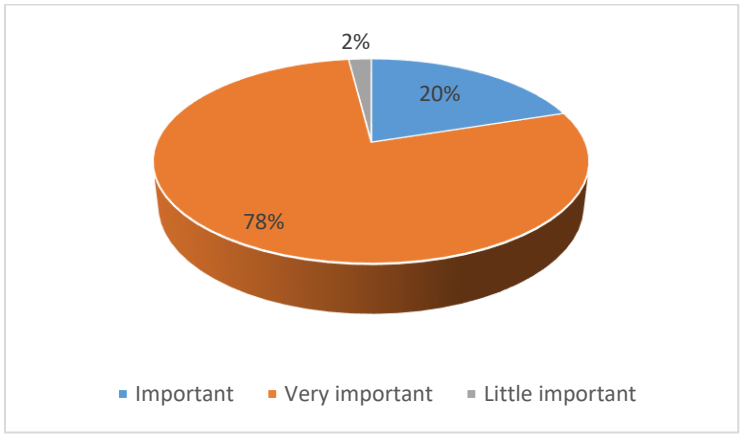


Figure 26 Importance of a healthy diet for the wellbeing

20. How many pieces of fruits do you consume per day?

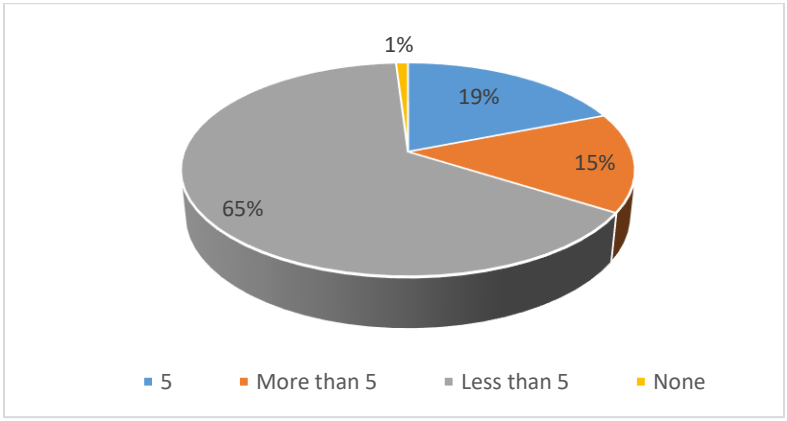


Figure 27 Pieces of fruit they eat per day

Although almost everyone is aware of the importance of a healthy diet, fruit consumption (an indicator of a healthy diet) is reduced, 65% of participant eat less than 5 pieces of fruit per day.

These aspects will certainly taken into account during the design of the OptimaSteel pilot

4.4 Ergonomics issues and environmental conditions

The following questions, from Q.21 to Q. 31 aim to identify the ergonomics issue that might exist within the sample. For this section the distribution across productive areas is extremely relevant, thus this analysis will be performed.

Q.21 Does your work involve tiring positions?

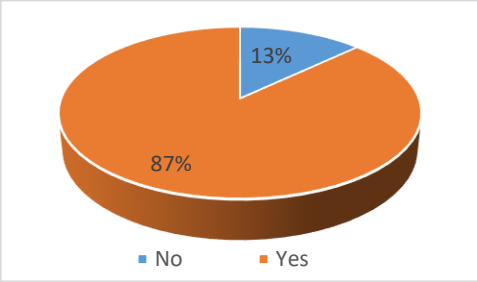


Figure 28 Tiring positions at work

Almost everyone indicated that their jobs in the production line involve tiring positions (87%) and that the job involves repetitive hand or arm movements (**Q.22**) and they spend most of the time on foot, 92% of participants stand for 6 to 8 hours per day (**Q.23**). However, only 53% of participants must manoeuvring heavy load during their shifts.

Across the productive areas, the one with less reports of tiring positions are the Painting, where 79% reported that their job involve tiring position (Figure 29). On the other hand, the Assembly (excluding Quality) is the area where only 11% reported that tiring positions are not demanded in their job

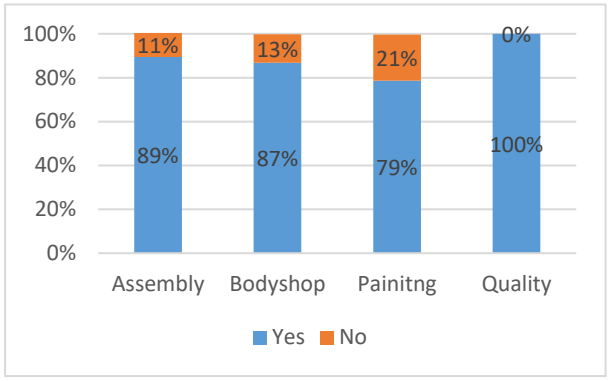


Figure 29 Tiring positions across productive areas

Q.24 Does your job involves manoeuvre heavy loads?

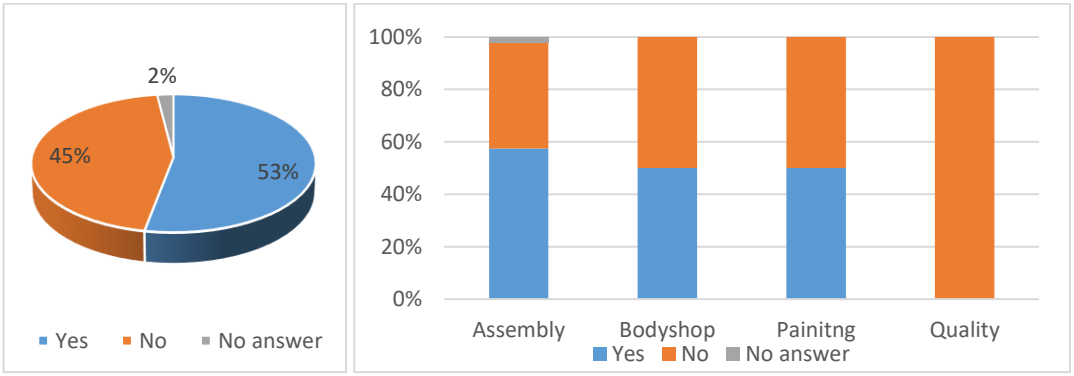


Figure 30 Heavy load maneuver, in general and across productive areas.

Almost half of the participants do not load heavy weight, the Assembling area is where the most positive answers are located since it is the less robot supported and most of the work is performed by people.

The following questions (Q.25 to Q.28) are regarding the safety equipment and materials available to workers.

Q.25 Is your work costume comfortable?

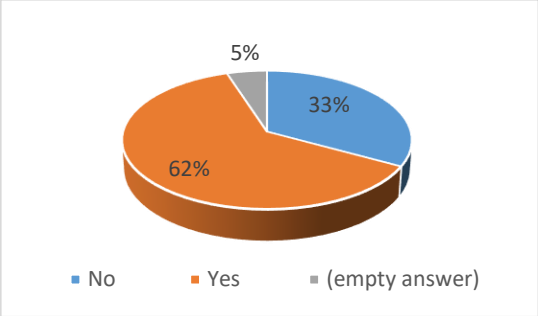


Figure 31 Comfort of costume

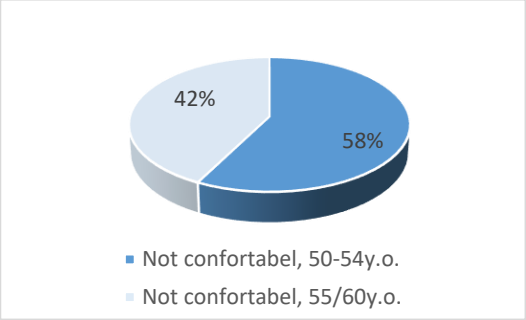
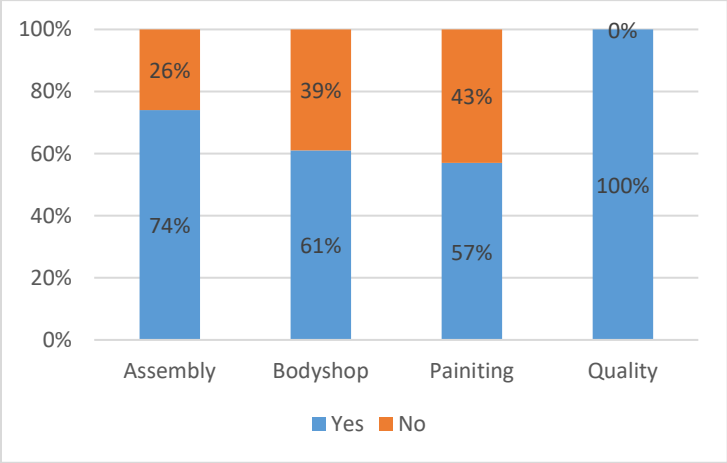


Figure 32 Age distribution within "not comfortable"

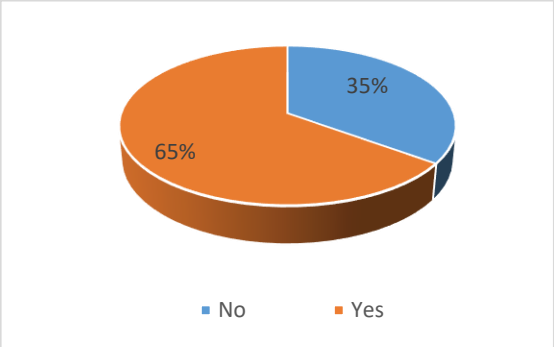
Most of the respondents thinks the costume is comfortable (Figure 31). Nevertheless 33% of the participants feel that is not. Analysing the split in terms of age within the ones answered that was not comfortable, 58% belong to 50-54 y.o. group (Figure 31).



The area where more discontent is reported is the Painting, where 43% of participant believe that their costume are not comfortable; the Bodyshop area' costume seams also not to be much appreciated, 39% replied that is not comfortable. This percentage decrease in the assembly area, however it represents the 26% (Figure 33).

Figure 33 Comfort of costume across productive areas

Q.26 Does your costume protects you from harassments?



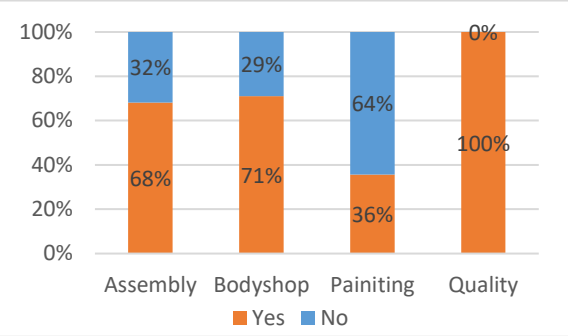


Figure 34 Costume protects from the harassments, general and per productive area

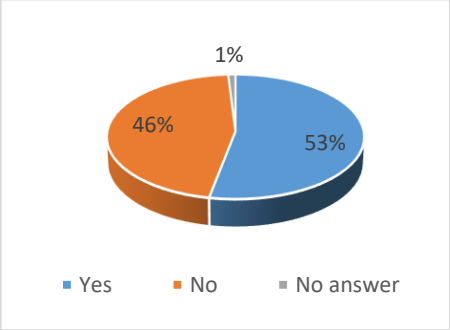
Regarding the safety of costume (Q.26), 65% replied that the safety equipment fit hazardous free environment, thus it might be assumed that comfort is not strictly related with safety.

However, 35% of participants report that the costume does not protect from the harassment of their role (Figure 34). As appreciable in Figure **Error! Reference source not found.**34, most of participants (64%) form the Painting area feel that their costume does not protect them from harassments, while for the Assembly and Bodyshop area that percentage decrease to around 30%.

Questions from 28 to 31 meant to analyze the environment conditions to which employees are exposed and their perception of it.

Morere than half of participants (53%) are exposed to vibration (Figure 35), 66% to laud noise (Figure 36) and 67% to high temperature (Figure 37). During the pilot implementation and during the research for the solutions to be applied, these factors will be taken in consideration.

Q.28 Are you exposed to vibrations from tools or machinery?



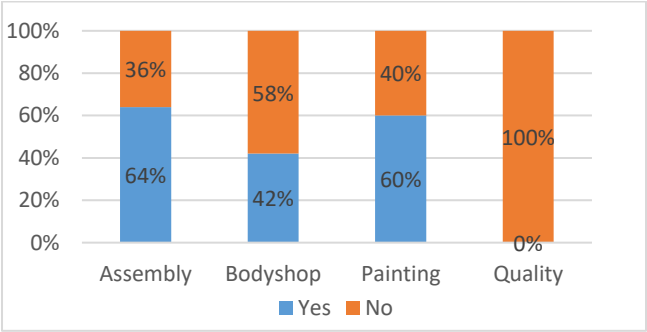


Figure 35 Exposure to vibrations from tools or machinery, general and per productive area

The Painting and Assembly areas are the ones where the exposure to vibration is higher, around 60%., while the Bodyshop presents 40% of positive answers.

Q.29 Are you exposed to laud noise?

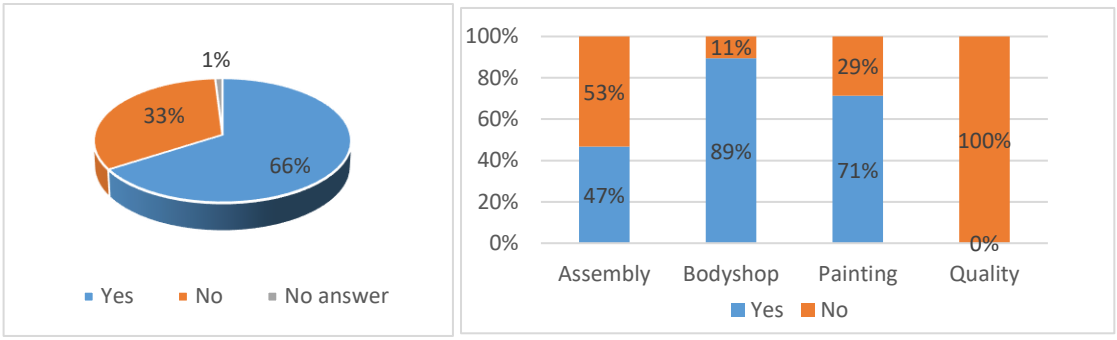


Figure 36 Exposure to laud noise, general and per productive areas

The Bodyshop area is evidently the noisiest area, 89% reported that they are exposed to laud noise, while in the Assembly area only 47% replied positively.

Q.30 Are you exposed to elevated temperature?

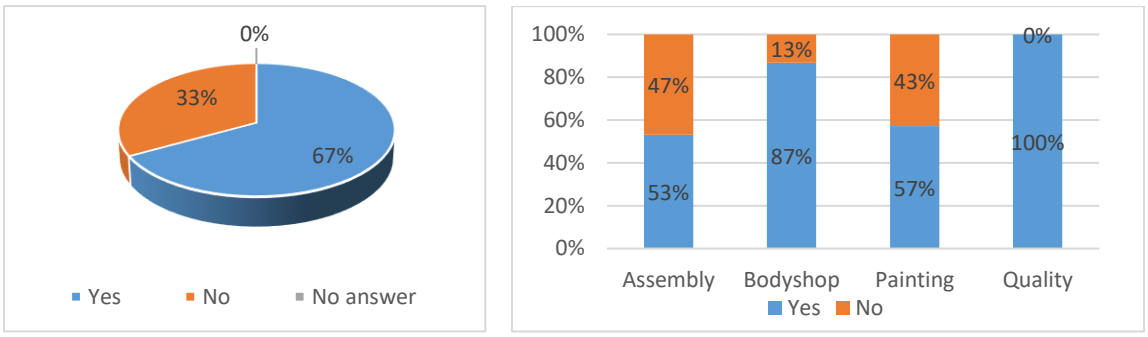


Figure 37 Exposure to high temperature, general and per productive area

The Bodyshop area is also the most exposed to high temperature (87% of positive answers).

Q.31 Are you exposed to toxic elements?

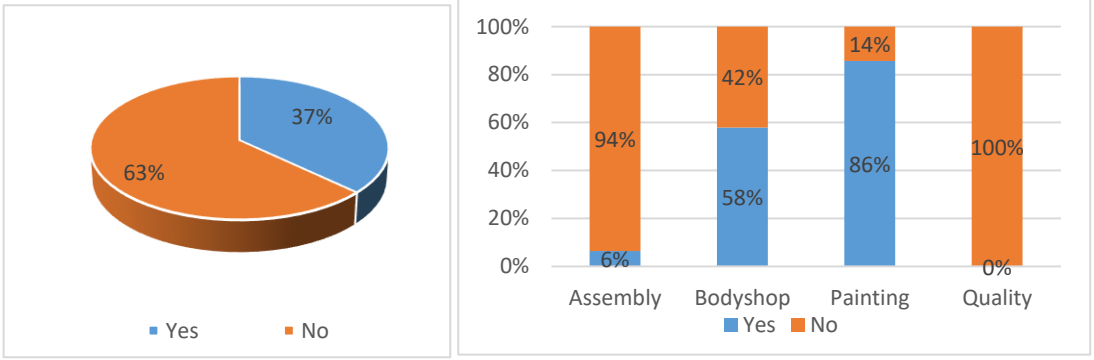


Figure 38 Exposure to toxic elements, general and per productive area

As expectable, the area more exposed to toxic elements, is the Painting, where 86% replied positively; however, the Bodyshop is also an area exposed to toxic elements. In fact, 58% of Bodyshop participants replied positively.

4.5 Clinical analysis

Another part of the questionnaire performed both by the worker and the nurse, participants provided their height, weight, blood pressure and level of sugar and heart rate. From the collection of those data, PSA calculated the corporal mass – BMI index (Figure 39) to identify situations of overweight, obesity or underweight.

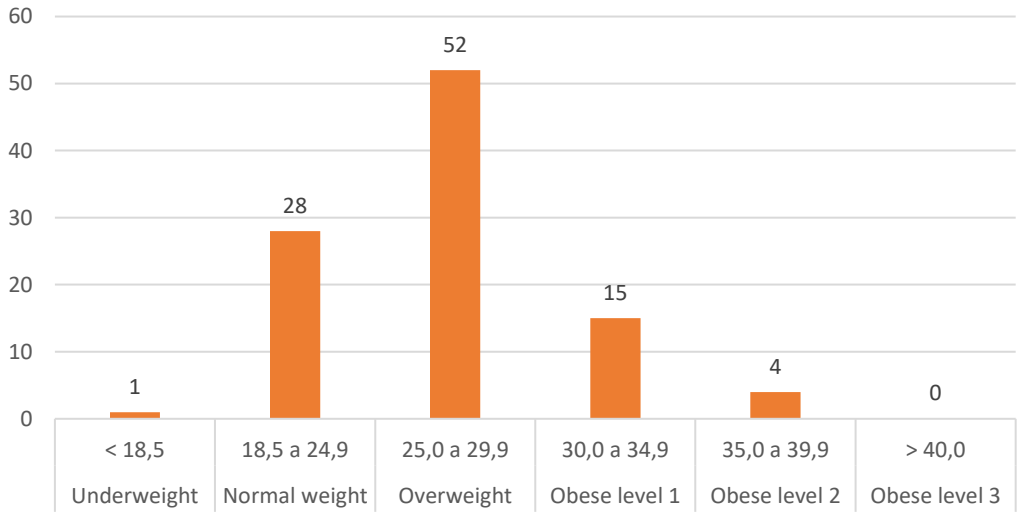


Figure 39 Body Mass Index

A huge part of the workers is overweight and obese, a total of 71%. The obesity rate in Portugal is 57% that include overweight and obesity, so clearly the PSA – Mangualde workers with age of 50 or more, are above the general statistics.

The blood pressure (mmHg) was analysed to identify cases of hypertensions at stage 1 (SYST 140 - 159 & DIAS 90 - 99), stage 2(SYST 160 - 179 & DIAS 100-110) and stage 3 (SYST >180 & DIAS > 110).

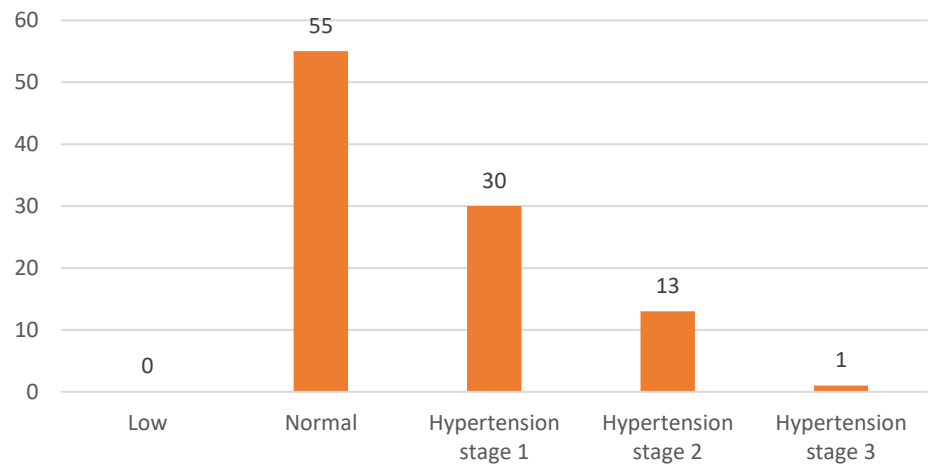


Figure 40 Blood pressure

A large group of the workers (44%) have hypertension.

The majority (87%) of the participants account for a normal heartbeat between 60-90 bpm. Tachycardia, a heart rate higher than 100 was measured in 3 employees (Figure 41).

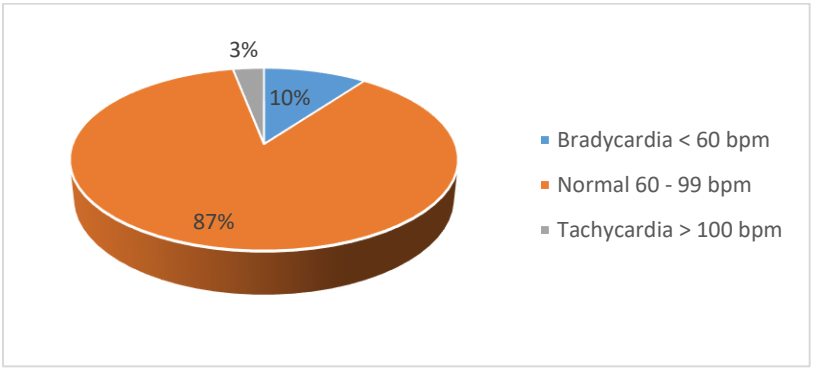


Figure 41 Heartbeat rates

Analysing the blood sugar levels across participants, a total of 18% have prediabetes and 1% diabetes. According to the International Diabetes Federation a percentage of 13,9% of the Portuguese population has diabetes. So, considering that 18% that do not have diabetes yet, participants are below the statistics, but these cases need to be monitored

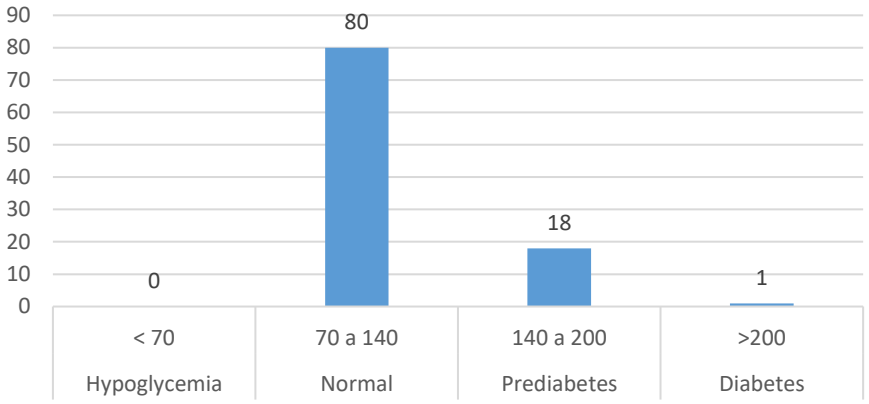


Figure 42 Blood sugar level

Participants were then asked to identify, in an open question, the types of lesions they experienced.

Please, if you had an injury, identify the localization

The figures below present the injuries grouped by the biggest body's zones analysing the age distribution of these lesions.

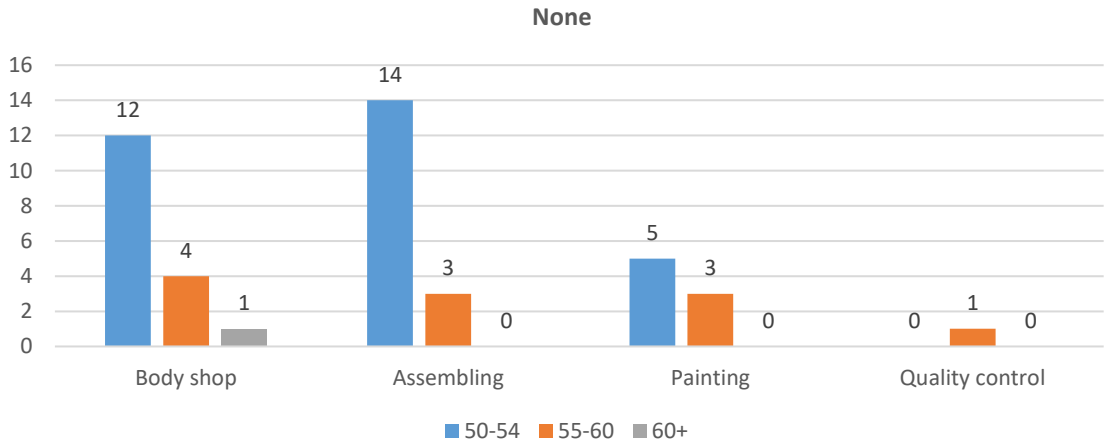


Figure 43 No injury by workstation

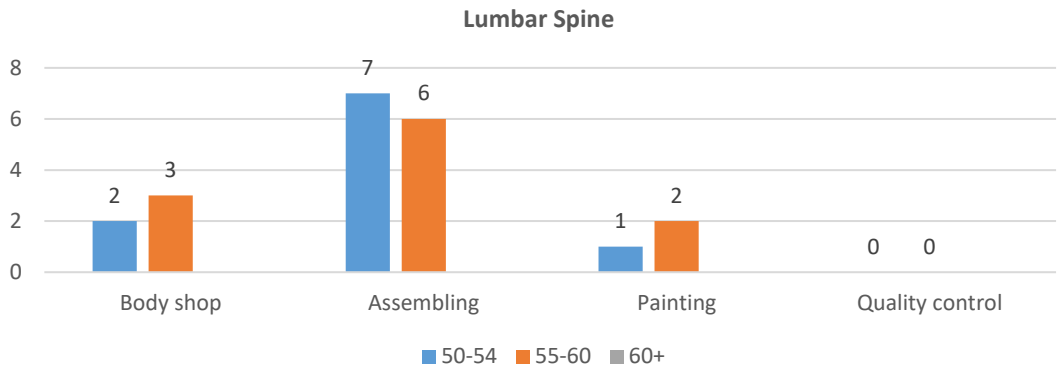


Figure 44 Lumbar spine injuries by workstation

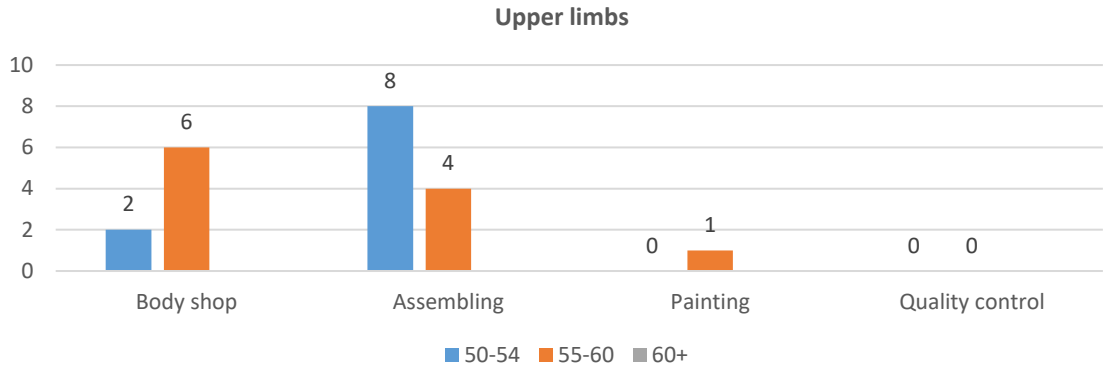


Figure 45 Upper limbs injuries by workstation

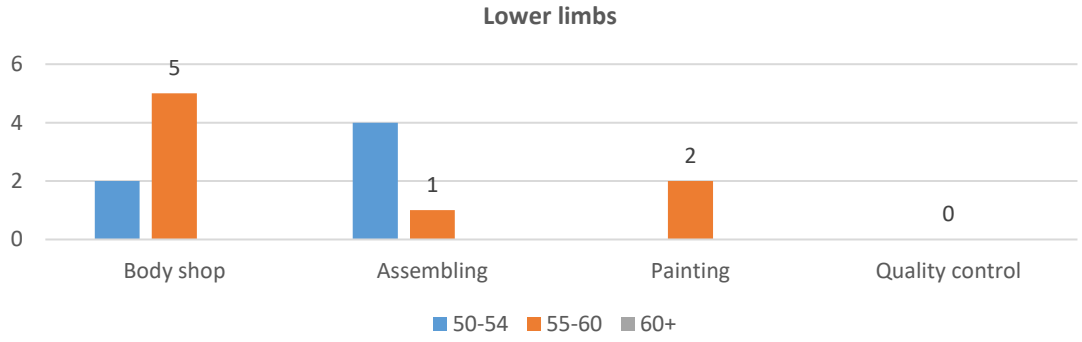


Figure 46 Lower limbs injuries by workstation

The workers in the age ranges 55-60+ in general have more injuries in all the zones. This results is in direct contrast with results from Q.5 – Figure 7– where the age distribution analysis revealed that the age group with more reported injuries in the last 12 month was the 50-54 years old one, Only in the Assembling are the workers in the group 50-54 reported more injuries in this last question than the other age-group, and this result is coherent with the one in Figure 7. Further analysis is needed to understand this phenomenon.

5. Risks and Barriers

The questionnaire was performed by the partner INOVA+ and validated by the whole consortium. The PSA Groupe acknowledges the focus of the questions asked in answering to the OptimaSteel goals and ultimately the employees needs for a better quality of life at work. Besides the fact the employees were informed of the project's goals and aims, and the confidentiality of their answers, the consortium cannot underestimate the possible pressure felt to be in the PSA facilities.

The confidentiality of the answers is ensured by the partner INOVA+, who is responsible for accessing the Google Forms and shared the data analysed with the PSA to include and develop this deliverable. INOVA+ will share the raw data in case of a justifiable necessity.

The decision to include the collaborator number in the questionnaire was unanimous and allows tracking the employees to assess the success of the OptimaSteel after the pilot demonstration. Moreover, the collaborator number will enable to signal the employees with health concerns to take special care.

The sector assembling accounted for the majority of the employees who participated in the questionnaire (47) followed by the body shop (38). These sectors are constituted by the older population at the PSA.

The questionnaire was answered upon the return from the summer break by the employees (August 2019).

6. Alignment with OptimaSteel WPs

Deliverable D1.2 reports the findings from the questionnaire prepared in D1.1 and reflects the needs of the employees at the PSA – Mangualde plant.

This report constitutes the initial baseline of the current situation at the PSA- Mangualde plant and will serve as a guide to scan for the suitable technologies and solutions to be included in the deliverable D1.4 (list of technologies and methods).

7. Conclusions

The industrial work has never been easy, the factories' conditions have been suffering important revolutions, as robotization, for example that has made labour less difficult.

Half of the employees suffered form an injury in the last year, from those 15 worked with the injury. Moreover, 51% of the employees reported to have worked even feeling ill.

The physical and mental demanding at the workplace may be the cause for 36% employees to have answered to not believe in being able to work until they are 66 years old.

Around 25% of the employees feel always or most of the time too tired to do leisure activities after work.

Sixty-two feel "always or most of the time" and "occasionally" emotional distress at work. Nevertheless, the work is a supportive environment as confirmed by 71% of the participants.

Thirty-nine percent of the workers never or almost never (once and twice a month) practice physical activities, but 87% would do it more if they had time. The preferred physical activities to practice are walking and cycling accompanied by a group of people or friends.

Seventy-eight percent of the employees believe a healthy diet is important for the wellbeing, nevertheless, 65% consume less than 5 pieces of fruits per day.

The medical check-ups are practiced at the PSA and the employees are aware of their regularity according to their age. Nevertheless, measures need to be practice to reduce the blood pressure levels of the majority of the employees and their BMI.

Working in PSA factory is characterized by a high number of hours standing, repetitive movements, and carrying heavy loads in hot environments and exposed to chemical substances. These conditions are characteristics of this type of work, and even though protective equipment and other measure have been practiced, there is space for improvements to improve the comfortability at the same time ensuring the safety. Some of the measures in place are the workstation rotation policy, to avoid the employees to perform the same movements all the time. However still have quite a lot of work to do, and we intend with this project better understand the needs and help us to improve the workers conditions.