

# Job Satisfaction in a Long-Stay Hospital: Related Variables and Monitoring Indicators

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## Abstract

**Aim:** To identify dimensions with the greatest impact on health staff job satisfaction, evaluating their evolution over time and selecting the most sensitive monitoring indicators to detecting changes.

**Methods:** Two cross-sectional studies were conducted in 2013 and 2016. The population studied was the staff of a Long Stay Chronic Care hospital in Valencia (n 2013=313; n 2016=312). The assessment tool used was the Corporate Osakidetza Satisfaction Survey, based on the EFQM Excellence Model, developed and validated by the Basque Health Service for the evaluation and improvement of people's job satisfaction in public utility companies. Predictive variables were socio-demographic characteristics and professionals ratio with excellent perception of the organizational variables that define Job Satisfaction. Outcome variable was high job satisfaction, defined as a score  $\geq 75^{\text{th}}$  percentile. The association between variables was quantified by Odds Ratio.

**Results:** Mean job satisfaction was 7 in both studies, being a poor indicator of change. The highest rated aspects in both surveys were healthcare quality and relationship with supervisor, and the worst were hospital management perception and recognition. In the stratified analysis, socio-demographic variables had little significance, while an excellent perception in some of the considered dimensions, and were associated with high job satisfaction. The most strongly associated aspects were communication, working environment and training. In the comparative study, indicators based on individual dimensions detected changes better than the assessment of overall satisfaction.

**Conclusions:** Job satisfaction surveys are a useful tool to evaluate the perception of professionals and to detect improvement areas. The choice of appropriate indicators optimizes the information obtained through these surveys. According to our results, graphical representation of the percentage of satisfied professionals for each of the analyzed dimensions is the best indicator to detecting changes and detected differences that were not evident in the rest of indicators analyzed.

**Keywords:** Job satisfaction; Chronic care hospital; Health organizations; Healthcare quality; Workforce and workload; Teamwork

## Introduction

Job satisfaction is the attitude a person has at work and is an essential factor in achieving individual and collective goals [1]. In healthcare organizations, job satisfaction is related to healthcare quality and is also a key element in retaining professionals [2,3]. Certain features, such as personal history, skills, self-esteem, self-perception and socio-cultural environment, affect the expectations, needs and aspirations that will influence an individual's motivation and job satisfaction. Moreover, job dissatisfaction is closely related to high turnover rates, stress, emotional exhaustion and burnout syndrome in nursing staff [4-6].

Elton Mayo was the first to study job satisfaction in the 1930s at Western Electric Company [1]. His results showed that there was a correlation between type of supervision and workers' attitudes. An interest in the working environments of health institutions emerged in the late 1970s, before the nursing shortage that occurred in US hospitals. It was noticed that some hospitals attracted staff instead of losing it; therefore, they were called magnet hospitals. In the 1980s, studies were conducted to determine the factors responsible for this attraction. It was found that these hospitals had organizational characteristics that enabled people to develop professionally and that these features of hospital management were related to job satisfaction [7].

There are numerous studies of job satisfaction, initially conducted to examine the influence of job satisfaction on performance; however the main value of these studies is that they provide an organizational intervention tool. There are many variables that influence job satisfaction, including autonomy, workload and recognition [8]. To attract and motivate staff, the views of workers are more important than the working conditions themselves. Focusing on this, one of the most important factors that influence people's perceptions and opinions is the organizational climate: The set of characteristics that define work environment of an organization and influence individual behaviors, relationships and attitudes [9]. Many studies link job satisfaction with employee motivation and performance. A suitable atmosphere and appropriate goals enhance personal growth and professional self-

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fulfillment and also influence satisfaction, productivity, commitment and work quality [10,11].

There are many models of surveys used to assess job satisfaction and every organization must choose the one that best suits their features. The impacts of the dimensions that define job satisfaction depend on the characteristics of each individual and on organizational features [2].

There have been few studies of job satisfaction conducted in long-stay hospitals, which serve mostly chronic and long evolution patients with great dependence or disability, or in advanced clinical situations, where care can trigger higher emotional implications, in comparison with acute care hospitals. As background to this study, in 2012, the degree of staff burnout was evaluated in the same population assessed in this study. The earlier study used Maslach's test and found that 48% of the professionals studied, had affected 3 scales (emotional exhaustion, depersonalization and low personal accomplishment). 14% of the sample had a high degree of burnout with high disturbance in the 3 scales, which indicated a need to study job satisfaction to analyze the situation and to take corrective actions.

**Aim:** To identify dimensions with the greatest impact on health staff job satisfaction, evaluating their evolution over time and selecting the most sensitive monitoring indicators to detecting changes.

## Methods

### Study design

Two cross-sectional studies were conducted to survey all staff (healthcare and non-healthcare) of a public Long-stay hospital in Spain. The studies were conducted during March 2013 and March 2016.

### Assessment tool

The instrument used was an adaptation of the corporate Osakidetza

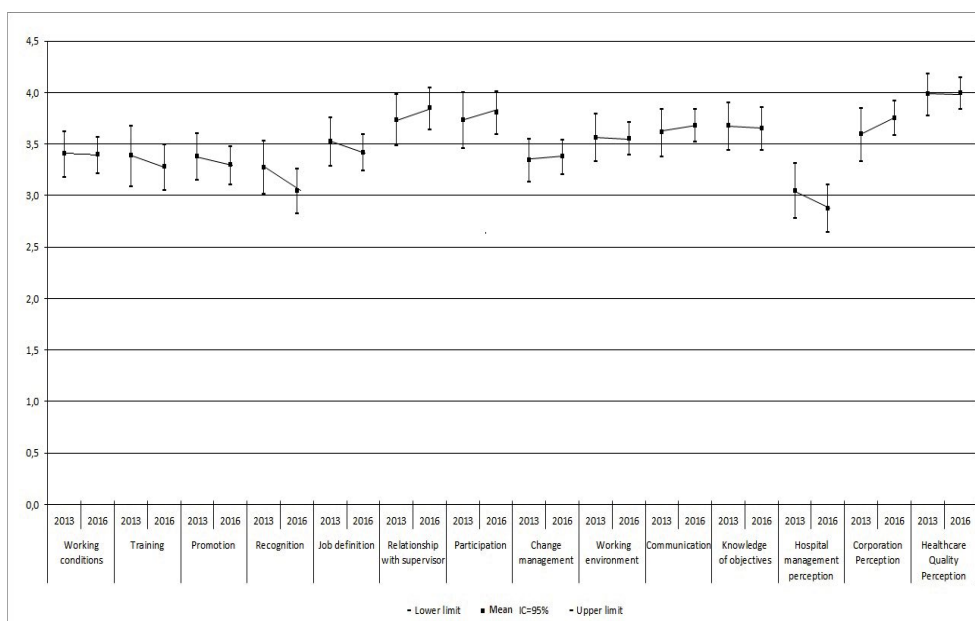
survey, developed and validated by the Basque Health Service for the evaluation and improvement of people's job satisfaction in public utility companies. The dimensions considered in this survey were consistent with the principles and guidelines set out in the EFQM Excellence Model [12,13]. Before applying the measurement instrument, the questionnaire was adapted to the hospital's characteristics as described in the survey manual with regard to selecting questions for the final survey. The study was approved by the Hospital Manager and Quality, Bioethics, Teaching and Research Hospital Committees. The Hospital Manager requested that the survey avoid issues related to salaries, since in public institutions it is not possible change this variable; therefore, the questionnaire was adapted by replacing this dimension with job definition dimension from the University of Salamanca job satisfaction questionnaire.

The questionnaire had 4 parts. The first part collected the socio-demographic and occupational characteristics of the professionals.

The second part included 27 questions evaluating 12 dimensions linked to staff satisfaction using a Likert scale from 1 (low satisfaction) to 5 (high satisfaction). The considered dimensions are described in Figure 1.

The third part collected information about workers' perceptions of the institution and of the healthcare quality that the hospital offers its patients.

In the fourth part, workers were asked to indicate their degree of job satisfaction using a visual scale from 1 to 10 and were asked to choose the 3 dimensions that they consider the most influential in terms of their job satisfaction. The objective of this question was to identify the different levels of influence that the analyzed dimensions could have on collective satisfaction. Finally, an open question was incorporated to provide suggestions.



1: Working Conditions; 2: Training; 3: Promotion and Development; 4: Recognition; 5: Job Definition; 6: Relationship with Supervisor; 7: Participation; 8: Change Management; 9: Working Environment; 10: Communication; 11: Knowledge and Identification with the Objectives; 12: Hospital Management Perception; 13: Corporation Perception; 14: Healthcare Quality Perception

Figure1: Evolution of perceived job satisfaction with respect to each of the dimensions considered.

The explicit consent of participants was not required because participation was voluntary and anonymous; responding and delivering the completed survey indicated an implicit consent to use the data provided to perform subsequent studies, and this was officially noted in the prior information given to the workers.

### Sample and data collection

The sampling process was non-probabilistic and consecutive. The hospital's workforce was composed of 313 employees in 2013 and 312 in 2016. In both studies, the same procedure was applied: the survey was delivered to staff members through hospital internal mail with a letter that explained the study objectives, requested staff collaboration, and highlighted that the information collected would be used to identify improvement areas.

The sample size was not predetermined, since in the two studies the questionnaires were sent to all staff although in 2013, only returned the delivery receipt 291 professionals, and 242 in 2016; the remaining professionals did not receive the questionnaire for different reasons (job drop, absence, holidays, etc.)

The questionnaire was sent to the staff during the last week of February. The delivery deadline was March 15<sup>th</sup>. The questionnaire was self-administered and the responses were collected through suggestion boxes.

### Statistical analysis

To describe the quantitative variables, position {mean ( $\bar{x}$ )} and dispersion {standard deviation (SD)} measurements were used, and frequency measurements (percentages) were used for the qualitative and categorical variables.

To analyze relationships between variables, the workers' socio-demographic characteristics and their perceptions of the different evaluated dimensions were considered independent variables. The outcome variable was high job satisfaction, defined as a score  $\geq$  75<sup>th</sup> percentile of job satisfaction.

To perform the hypothesis tests, the socio-demographic variables were stratified and dichotomized according to their median. To analyze the influence of the different dimensions of high job satisfaction, a new variable called "Excellent Dimension Assessment" was coded for each dimension; the excellent dimension assessment level was reached every time a respondent answered "5" (maximum score) for all questions in a given dimension.

To verify the normal distribution of the studied variables the Shapiro-Wilk test was used; if it was met, we used parametric tests, and if not, we used the corresponding non-parametric tests. For the bivariate analyses, the Chi-square test was used to assess the relationships between qualitative variables, Student's t-test was used for quantitative variables versus dichotomous qualitative variables and ANOVA was used for quantitative variables versus qualitative variables with 3 or more categories, using Bonferroni's post hoc correction.

To study the relationships between the different dimensions that compose the survey, a correlation matrix was used in both studies. To quantify the degree of association between variables, ORs and 95% CIs were used. The adjusted analysis was performed using a binary logistic regression method using the criteria of Greenland and Maldonado [14]; the model included potentially confusing variables and those variables for which a statistically significant association was found in the bivariate analysis.

Data were analyzed using IBM SPSS for Windows, version 19.0. To identify strengths and improvement areas, the classification criteria proposed in the instrument of evaluation were used [12], considering Weak Points, the dimensions with less than 50% positive responses (score of 4 or 5), Improvement Points if the percentage of positive responses was 50-70%, Strong areas if the percentage of positive responses were 70-80% and Excellent areas if the percentage of positive responses were above 80%.

### Results

In 2013, 90 responses were obtained from the 291 questionnaires distributed (75 valid), representing a response rate of 25.8%. In 2016, 242 surveys were distributed and 111 responses (101 valid) were obtained, achieving a participation rate of 41.7%.

Some participants did not answer all the socio-demographic items, but if they answered the questions in the second part of the questionnaire, the survey was considered to be complete and valid. The mean job satisfaction was 7.10 (SD=2.34) in 2013 and 7.04 (SD=2.20) in 2016; the 75<sup>th</sup> percentile of the distribution was 9 points in both cases, with no statistically significant differences between the two administration periods. Regarding the healthcare quality provided to patients, approximately 80% of the workers had a positive perception (satisfactory or very satisfactory) in both surveys.

The mean age of respondents in 2013 was 43.70 (SD=7.71) and 47.74 (SD=8.49) in 2016. The descriptive data of socio-demographic and explanatory variables for both survey administrations are shown in Table 1, where perceived job satisfaction is stratified according to socio-demographic variables. The samples were representative of the total population in terms of age and sex, but a higher rate of participation was observed in healthcare workers and permanent staff. A greater participation rate was also observed among staff with hospital management responsibilities and who had direct contact with patients, especially in the 2016 survey.

In the bivariate analysis, statistically significant differences were found that indicated less job satisfaction in the group of staff that had between 10 and 14 years in the hospital. In 2016, "anxiolytic drugs" was also a significant variable, indicating that there was less satisfaction among professionals taking these drugs.

The mean satisfaction of each considered dimension was similar in both studies. Figure 1 shows the average perception of each considered dimension. No significant differences were observed respect to the considered dimensions. The aspects with the highest ratings in both surveys were quality of healthcare and relationship with supervisor, while the worst were perception of hospital management and recognition.

With regard to the percentage of workers with positive perceptions (satisfied or very satisfied) for each of the analyzed dimensions, differences between the results of both surveys were observed. In 2016, there was an increase in the percentage of workers with positive perceptions of working conditions, promotion opportunities and development, participation, change management and relationship with supervisor. Conversely, in the same year, there was a decrease in the percentage of satisfied employees with regard to recognition and working environment. Figure 2 plots the percentage of satisfied workers for each of the considered dimensions and the prioritization of the detected improvement areas, and this result was the most sensitive indicator for detecting changes.

Regarding the differential importance of the analyzed dimensions to job satisfaction, both surveys obtained the same results. The 3 most influential dimensions were working conditions, working environment and recognition. The correlations between the analyzed dimensions were very significant. In 2013, the strongest correlation was observed between communication and change management ( $r=0.79$ ), while in 2016 the highest correlation was observed between participation and relationship with supervisor ( $r=0.83$ ). In 2013 the dimensions with the greatest number of correlation coefficients higher than 0.7 were communication, recognition and job definition, while participation,

relationship with supervisor and change management were the dimensions that reach this threshold in 2016.

To study the impact of the socio-demographic variables and the analyzed dimensions on job satisfaction, these associations were analyzed using a cutoff of the 75<sup>th</sup> percentile (in both surveys, a score  $\geq 9$  was classified as very satisfied compared to other possible answers). The results (adjusted OR versus different variables) are summarized in Tables 2 and 3. When conducting the analysis using the stratified socio-demographic variables, a low significance was observed; however, a

| Socio-demographic variables  |                    | Job Satisfaction 2013 |                 | Job Satisfaction 2016 |                |
|------------------------------|--------------------|-----------------------|-----------------|-----------------------|----------------|
|                              |                    | n (%)                 | Mean (IC 95%)   | n (%)                 | Mean (IC 95%)  |
| Age                          | <35 years          | 6 (8.7)               | 7.6 (6.4-8.8)   | 7 (11.5)              | 8.4 (7.5-9.3)  |
|                              | 35-44 years        | 25 (36.2)             | 7.4 (6.6-8.2)   | 14 (19.2)             | 7.1 (5.9-8.2)  |
|                              | 45-49 years        | 22 (34.8)             | 6.4 (5.1-7.8)   | 12 (15.4)             | 7.8 (6.5-9.0)  |
|                              | 50-54 years        | 9 (13.0)              | 7.2 (5.1-9.3)   | 17 (21.8)             | 7.4 (6.5-8.3)  |
|                              | $\geq 55$ years    | 5 (7.3)               | 8.5 (7.3-9.7)   | 25 (32.1)             | 6.7 (5.7-7.7)  |
| Gender                       | Male               | 8 (18.2)              | 6.5 (4.2-8.8)   | 17 (17.2)             | 7.1 (6.2-7.8)  |
|                              | Female             | 35 (81.8)             | 7.1 (6.3-7.9)   | 79 (82.8)             | 7.0 (6.4-7.5)  |
| Type of contract             | Fix                | 28 (42.0)             | 7.3 (6.5-8.0)   | 39 (41.0)             | 7.1 (6.5-7.8)  |
|                              | Temporary staff    | 30 (44.9)             | 6.7(5.6-7.7)    | 46 (48.5)             | 6.6 (5.9-7.3)  |
|                              | Accum tasks        | 1 (1.5)               | 8.0 (8.0-8.0)   | -                     | -              |
|                              | Eventual           | 8 (11.6)              | 8.4(7.75-9)     | 9 (9.5)               | 8.4 (7.4-9.5)  |
|                              | Labor              | -                     | -               | 1 (1.0)               | 8.0 (8.0-8.0)  |
| Professional category        | Physicians         | 6 (8.5)               | 7.2 (5-9.3)     | 12 (12.2)             | 7.3 (5.9-8.8)  |
|                              | Nurses             | 27 (38.0)             | 7.7 (7.1-8.3)   | 37 (39.8)             | 7.0 (6.3-7.7)  |
|                              | Nursing assistants | 22 (31.0)             | 7.3 (6.1-8.4)   | 34 (35.7)             | 7.3 (6.5-8.0)  |
|                              | Warders            | 2 (2.8)               | 5.8 (-3.8-15.3) | -                     | -              |
|                              | Administrative     | 9 (5.6)               | 6.1 (3.7-8.4)   | -                     | -              |
|                              | Maintenance        | 3 (1.4)               | 6 (-4.8-16.8)   | 6 (6.1)               | 5.7 (2.3-9.0)  |
| Team management              | No                 | 50 (82.3)             | 6.9 (6.0-7.6)   | 62 (70.6)             | 6.7 (6.1-7.3)  |
|                              | Yes                | 10 (17.7)             | 7.8 (6.5-8.6)   | 26 (29.4)             | 7.5 (6.6-8.3)  |
| Job seniority                | <5 years           | 5 (7.3)               | 9.2 (8.2-10.2)  | 2 (2.0)               | 10.0 (10-10)   |
|                              | De 5 a 9 years     | 10 (15.9)             | 7.3 (6.5-8.1)   | 6 (7.9)               | 8.1 (6.6-9.6)  |
|                              | De 10 a 14 years   | 12 (17.4)             | 6.2 (4.4-7.9)   | 20 (20.8)             | 6.9 (6.0-7.8)  |
|                              | De 15 a 19 years   | 15 (21.4)             | 7.4 (6.4-8.4)   | 29 (28.7)             | 6.9 (6.0-7.7)  |
|                              | $\geq 20$ years    | 25 (37.7)             | 7.2 (6.1-8.3)   | 41 (40.6)             | 6.9 (6.2-7.7)  |
| Hospital seniority           | <5 years           | 18 (27.9)             | 7.4 (6.4-8.6)   | 19 (23.7)             | 8.1* (7.4-8.9) |
|                              | De 5 a 9 years     | 20 (30.9)             | 7.5 (6.5-8.5)   | 33 (35.5)             | 6.6 (5.8-7.3)  |
|                              | De 10 a 14 years   | 10 (14.7)             | 5.5* (3.4-7.6)  | 11 (11.8)             | 6.2*(4.4-8.0)  |
|                              | De 15 a 19 years   | 9 (13.2)              | 6.4 (4.4-8.5)   | 14 (15.1)             | 6.5 (5.0-8.0)  |
|                              | $\geq 20$ years    | 9 (13.2)              | 8.6* (8.0-9.2)  | 13 (14.0)             | 8.0 (6.8-9.1)  |
| Workplace seniority          | <5 years           | 27 (38.6)             | 7.4 (6.6-8.2)   | 30 (37.1)             | 7.2 (6.3-8.0)  |
|                              | De 5 a 9 years     | 20 (30.0)             | 7.3 (6.2-8.3)   | 28 (31.5)             | 6.5 (5.5-7.5)  |
|                              | De 10 a 14 years   | 7 (10.0)              | 5.0 (2.4-7.6)   | 10 (11.2)             | 7.0 (5.9-8.1)  |
|                              | De 15 a 19 years   | 10 (14.3)             | 7.4 (5.7-9.1)   | 9 (10.1)              | 6.7 (4.3-9.0)  |
|                              | $\geq 20$ years    | 4 (7.1)               | 8.6 (7.1-10.1)  | 9 (10.1)              | 8.0 (7.1-8.9)  |
| Work at night                | No                 | 26 (49.3)             | 7.0 (5.9-8.0)   | 37 (39.6)             | 6.8 (6.0-7.7)  |
|                              | Yes                | 27 (50.7)             | 7.1 (6.1-7.9)   | 51 (60.4)             | 7.1 (6.4-7.6)  |
| Work on holidays             | No                 | 20 (35.9)             | 6.9 (5.6-8.1)   | 31 (34.7)             | 6.6 (5.6-7.5)  |
|                              | Yes                | 33 (64.1)             | 7.1 (6.3-7.8)   | 57 (65.4)             | 7.2 (6.6-7.7)  |
| Chronic disease              | No                 | 55 (77.8)             | 7.0 (6.4-7.6)   | 63 (73.3)             | 7.0 (6.4-7.5)  |
|                              | Yes                | 15 (22.2)             | 7.6 (6.4-8.6)   | 35 (26.7)             | 7.0 (6.0-7.7)  |
| Anxiolytic drugs             | No                 | 61 (87.5)             | 7.2 (6.7-7.8)   | 69 (78.0)             | 7.3* (6.8-7.7) |
|                              | Yes                | 9 (12.5)              | 6.7 (4.1-8.2)   | 19 (22.0)             | 5.8 (4.5-7.0)  |
| Direct contact with patients | No                 | 21 (31.1)             | 7.1 (5.8-8.3)   | 21 (20.8)             | 6.4 (4.9-7.6)  |
|                              | Yes                | 51 (68.9)             | 7.1 (6.5-7.7)   | 67 (79.2)             | 7.1 (6.5-7.6)  |

Table 1: Socio-demographic variables, descriptive statistics of job satisfaction.

| Socio-demographic variables  |                     | Job satisfaction 2013                |                             | Job satisfaction 2016                |                              |
|------------------------------|---------------------|--------------------------------------|-----------------------------|--------------------------------------|------------------------------|
|                              |                     | High job satisfaction / total. n (%) | Adjusted OR (IC 95%)        | High job satisfaction / total. n (%) | Adjusted OR (IC 95%)         |
| Age                          | <50 years           | 13/47 (27.7)                         | 5 (0.6-45) <sup>a</sup>     | 16/56 (28.6)                         | 2.4 (0.3-21.7) <sup>a</sup>  |
|                              | ≥ 50 years          | 4/14 (28.6)                          | 1                           | 5/19 (26.3)                          | 1                            |
| Gender                       | Female              | 9/35 (25.7)*                         | 0.3(0.03-2.3) <sup>b</sup>  | 21/79 (26.6)                         | 0.3 (0.04-2.6) <sup>b</sup>  |
|                              | Male                | 0/8 (0.0)                            | 1                           | 3/17 (17.6)                          | 1                            |
| Type of contract             | Fix                 | 7/28 (25.0)                          | 1.1 (0.3-4.2) <sup>c</sup>  | 11/39 (28.2)                         | 1.0 (0.2-5.3) <sup>c</sup>   |
|                              | No fix              | 12/39 (30.8)                         | 1                           | 14/56 (25.0)                         | 1                            |
| Professional category        | Nursing             | 8/27 (29.6)                          | 3.9 (0.8-18.4) <sup>d</sup> | 9/37 (24.3)                          | 0.4 (0.1-2.2) <sup>d</sup>   |
|                              | Other professionals | 12/42 (28.6)                         | 1                           | 16/58 (27.6)                         | 1                            |
| Job seniority                | <10 years           | 15/15 (33.3)                         | 0.8 (0.2-2.9) <sup>e</sup>  | 5/8 (62.5)*                          | 0.1(0.004-0.7)* <sup>e</sup> |
|                              | ≥ 10 years          | 14/52 (26.9)                         | 1                           | 21/90 (23.3)                         | 1                            |
| Hospital seniority           | <10 years           | 12/38 (31.6)                         | 2.1 (0.3-13.1) <sup>f</sup> | 15/52 (28.8)                         | 10.4 (1.3-82)* <sup>f</sup>  |
|                              | ≥ 10 years          | 7/28 (25)                            | 1                           | 9/38 (23.7)                          | 1                            |
| Workplace seniority          | <10 years           | 15/49 (21.9)                         | 11.2 (0.6-199) <sup>g</sup> | 15/58 (25.9)                         | 2.2 (0.3-16.9) <sup>g</sup>  |
|                              | ≥ 10 years          | 4/21 (19)                            | 1                           | 7/28 (25.0)                          | 1                            |
| Team management              | Yes                 | 4/10 (40)                            | 0.5 (0.1-2.4) <sup>h</sup>  | 9/27 (33.3)                          | 0.6(0.1-2.6) <sup>h</sup>    |
|                              | No                  | 12/50 (24)                           | 1                           | 13/62 (21.0)                         | 1                            |
| Working nights               | No                  | 13/33 (39.4)                         | 5.3 (0.8-33.4) <sup>i</sup> | 12/39 (30.8)                         | 7.2 (1-53) <sup>j</sup>      |
|                              | Yes                 | 7/36 (19.4)                          | 1                           | 14/59 (23.7)                         | 1                            |
| Work on holidays             | No                  | 9/21 (42.9)                          | 1.6 (0.3-8) <sup>j</sup>    | 9/34(26.5)                           | 2.7 (0.4-17) <sup>j</sup>    |
|                              | Yes                 | 9/41 (22)                            | 1                           | 17/64 (26.6)                         | 1                            |
| Chronic disease              | No                  | 15/55 (27.3)                         | 9.3 (0.8-108) <sup>k</sup>  | 21/71 (29.6)                         | 9.3 (0.8-108) <sup>k</sup>   |
|                              | Yes                 | 5/15 (33.3)                          | 1                           | 5/27 (18.5)                          | 1                            |
| Anxiolytic drugs             | No                  | 17/62 (27.4)                         | 2.9 (0.5-17.8) <sup>l</sup> | 21/75 (28.0)                         | 2.9 (0.5-18) <sup>l</sup>    |
|                              | Yes                 | 3/9 (33)                             | 1                           | 5/22 (22.7)                          | 1                            |
| Direct contact with patients | No                  | 10/21 (47.6)*                        | 7.5(1.1-52)* <sup>m</sup>   | 8/21 (38.1)                          | 7.5 (1.2-46)* <sup>m</sup>   |
|                              | Yes                 | 10/51 (19.6)                         | 1                           | 18/77 (23.4)                         | 1                            |

OR: Odds Ratio; IC: Confidence interval; \*p<0.05

<sup>a</sup>Adjusted for job seniority, hospital seniority, direct contact with patients, relationship with the supervisor, working environment and communication

<sup>b</sup>Adjusted for age, professional category, hospital seniority, training, participation and working environment

<sup>c</sup>Adjusted for age, professional category, hospital seniority, training, participation and working environment

<sup>d</sup>Adjusted for age, sex, hospital seniority, training, participation and working environment

<sup>e</sup>Adjusted for age, sex, contact with patients, working conditions, working environment and communication

<sup>f</sup>Adjusted for age, sex, professional category, training, participation and working environment

<sup>g</sup>Adjusted for age, job seniority, direct contact with patients, relationship with the supervisor, working environment and communication

<sup>h</sup>Adjusted for age, professional category, direct contact with patients, working conditions, training and working environment

<sup>i</sup>Adjusted for age, sex, workplace seniority, relationship with supervisor, working environment and communication

<sup>j</sup>Adjusted for age, sex, workplace seniority, relationship with supervisor, working environment and communication

<sup>k</sup>Adjusted for age, sex, contact with patients, relationship with supervisor, working environment and communication

<sup>l</sup>Adjusted for age, sex, contact with patients, working conditions, participation and working environment

<sup>m</sup>Adjusted for age, sex, job seniority, working conditions, working environment and communication

Table 2: Influence of socio-demographic variables on job satisfaction.

| Dimensions                   |                                | Job satisfaction 2013               |                              | Job satisfaction 2016               |                              |
|------------------------------|--------------------------------|-------------------------------------|------------------------------|-------------------------------------|------------------------------|
|                              |                                | High job satisfaction/ total. n (%) | Adjusted OR (IC 95%)         | High job satisfaction/ total. n (%) | Adjusted OR (IC 95%)         |
| Working Conditions           | Excellent dimension assessment | 5/5 (100)*                          | 4.4 (0.4-49) <sup>a</sup>    | 3/5 (60)*                           | 4.2 (0.4-50.7) <sup>a</sup>  |
|                              | Rest of professionals          | 15/67 (22.4)                        | 1                            | 23/93 (24.7)                        | 1                            |
| Training                     | Excellent dimension assessment | 9/17 (52.9)*                        | 3.8 (0.7-22) <sup>b</sup>    | 5/12 (41.7)                         | 11.3 (1.3-100)* <sup>b</sup> |
|                              | Rest of professionals          | 9/52 (17.3)                         | 1                            | 20/85 (23.5)                        | 1                            |
| Promotion and Development    | Excellent dimension assessment | 6/7 (85.7)*                         | Non adjustable               | 5/5 (100)*                          | Non adjustable               |
|                              | Rest of professionals          | 14/65 (21.5)                        | 1                            | 21/91 (23.1)                        | 1                            |
| Recognition                  | Excellent dimension assessment | 5/5 (100)*                          | 17.8 (1-313)* <sup>c</sup>   | 4/5 (80)*                           | 7.1 (0.6-93) <sup>c</sup>    |
|                              | Rest of professionals          | 14/65 (21.5)                        | 1                            | 22/93 (23.7)                        | 1                            |
| Job Definition               | Excellent dimension assessment | 7/7 (100)*                          | 3.5 (0.4-31.5) <sup>d</sup>  | 3/5 (60.5)*                         | 3.2 (0.4-24) <sup>d</sup>    |
|                              | Rest of professionals          | 13/64 (20.3)                        | 1                            | 22/91 (24.2)                        | 1                            |
| Relationship with supervisor | Excellent dimension assessment | 4/13 (30.8)                         | 6.5 (1.6-26.5)* <sup>e</sup> | 13/23 (56.5)*                       | 7.0 (1.6-31.3)* <sup>e</sup> |
|                              | Rest of professionals          | 15/58 (25.9)                        | 1                            | 13/74 (17.6)                        | 1                            |
| Participation                | Excellent dimension assessment | 10/16 (62.5)*                       | 4.6 (1.1-19)* <sup>f</sup>   | 12/24 (50)*                         | 4.6 (1.14-19)* <sup>f</sup>  |
|                              | Rest of professionals          | 10/54 (28.5)                        | 1                            | 14/73 (19.2)                        | 1                            |

|                                |                                |               |                              |               |                              |
|--------------------------------|--------------------------------|---------------|------------------------------|---------------|------------------------------|
| Change management              | Excellent dimension assessment | 3/4 (75)*     | 5.7 (0.7-50) <sup>g</sup>    | 3/5 (60)*     | 5 (0.6-46) <sup>g</sup>      |
|                                | Rest of professionals          | 17/68 (25)    | 1                            | 23/93 (24.8)  | 1                            |
| Working environment            | Excellent dimension assessment | 2/4 (50)      | 18.9(2.1-169) <sup>*h</sup>  | 7/9 (77.8)*   | 19 (2.2-167.8) <sup>*h</sup> |
|                                | Rest of professionals          | 18/68 (26.5)  | 1                            | 19/89 (21.3)  | 1                            |
| Communication                  | Excellent dimension assessment | 7/8 (87.5)*   | 89 (1.3-592) <sup>*i</sup>   | 4/6 (66.7)*   | 19.4 (2.1-179) <sup>*i</sup> |
|                                | Rest of professionals          | 12/61 (19.7)  | 1                            | 22/87 (25.3)  | 1                            |
| Knowledge of the objectives    | Excellent dimension assessment | 9/14 (64.3)*  | 2.7 (0.7-10.2) <sup>j</sup>  | 9/20 (45)*    | 2.9 (0.8-10.6) <sup>j</sup>  |
|                                | Rest of professionals          | 11/58 (19)    | 1                            | 17/89 (19.1)  | 1                            |
| Hospital management perception | Excellent dimension assessment | 8/11 (72.7)*  | Non adjustable               | 9/9 (100)*    | Non adjustable               |
|                                | Rest of professionals          | 12/61 (19.7)  | 1                            | 17/89 (19.7)  | 1                            |
| Corporation Perception         | Excellent dimension assessment | 8/14 (57.1)*  | 22.7 (2.5-203) <sup>*k</sup> | 10/14 (71.4)* | 22.7 (2.5-203) <sup>*k</sup> |
|                                | Rest of professionals          | 10/56 (17.9)  | 1                            | 16/78 (20.5)  | 1                            |
| Healthcare Quality Perception  | Excellent dimension assessment | 12/21 (57.1)* | 16.2 (2.6-101) <sup>*l</sup> | 14/24 (58.3)* | 16.2 (2.6-101) <sup>*l</sup> |
|                                | Rest of professionals          | 8/51 (15.7)   | 1                            | 12/71 (16.9)  | 1                            |

OR: Odds Ratio; IC: Confidence interval; \* p<0.05

<sup>a</sup>Adjusted for age, professional category, direct contact with patients, training, relationship with the supervisor and working environment

<sup>b</sup>Adjusted for age, hospital seniority, direct contact with patients, working conditions, participation and working environment

<sup>c</sup>Adjusted for hospital seniority, type of contract, direct contact with patients, training, change hospital management and working environment

<sup>d</sup>Adjusted for sex, workplace seniority, anxiolytic drugs, working conditions, relationship with the supervisor and change hospital management

<sup>e</sup>Adjusted for age, professional category, direct contact with patients, working conditions, working environment and communication

<sup>f</sup>Adjusted for age, anxiolytic drugs, direct contact with patients, working conditions, training and working environment

<sup>g</sup>Adjusted for hospital seniority, type of contract, direct contact with patients, training, job definition and working environment

<sup>h</sup>Adjusted for age, professional category, direct contact with patients, working conditions, training and communication

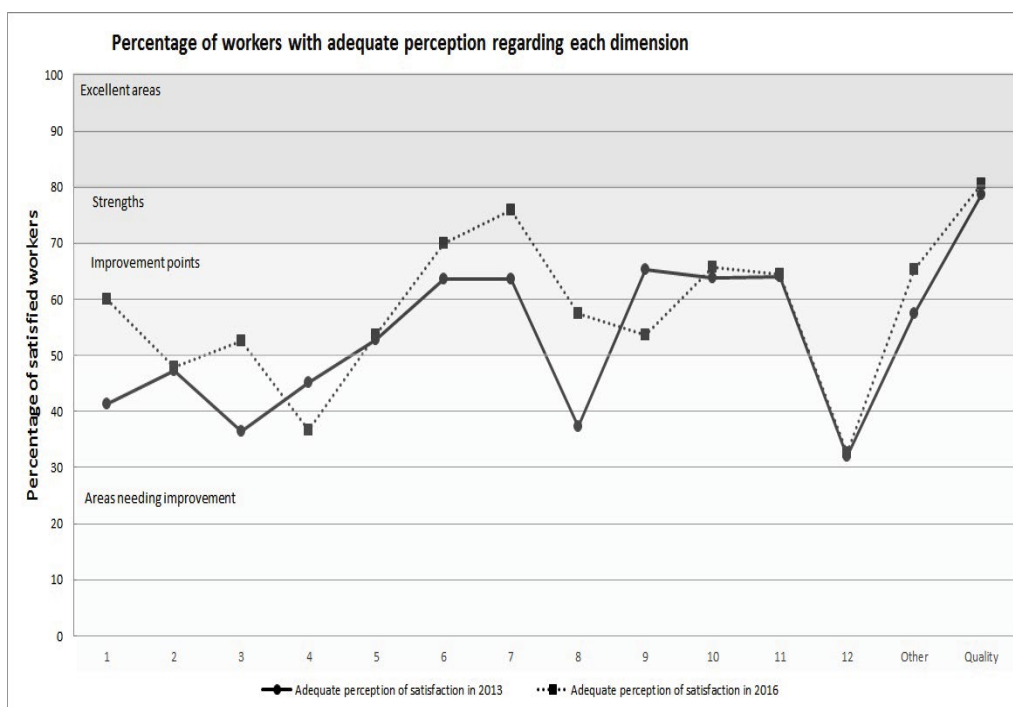
<sup>i</sup>Adjusted for age, hospital seniority, direct contact with patients, change hospital management, working environment and goals knowledge

<sup>j</sup>Adjusted for hospital seniority, type of contract, direct contact with patients, training, change hospital management and working environment

<sup>k</sup>Adjusted for age, sex, contact with patients, relationship with supervisor, participation and working environment

<sup>l</sup>Adjusted for age, sex, contact with patients, recognition, participation and working environment

Table 3: Influence of considered dimensions on job satisfaction.



1: Working Conditions; 2: Training; 3: Promotion and Development; 4: Recognition; 5: Job Definition; 6: Relationship with Supervisor; 7: Participation; 8: Change Management; 9: Working Environment; 10: Communication; 11: Knowledge and Identification with the Objectives; 12: Hospital Management Perception; 13: Corporation Perception; 14: Healthcare Quality Perception

Figure 2: Workers' satisfaction evolution regarding the considered dimensions (2013-2016).

high perception score for some of the considered dimensions showed an association with high job satisfaction.

An analysis of the influence of socio-demographic variables on job satisfaction showed significance only for staff that had direct contact with patients. In both surveys, higher levels of job satisfaction were

found among professionals without direct contact with patients. In 2016, when assessing seniority in hospital, the OR adjusted for potential confounders showed greater job satisfaction among professionals with a seniority of less than 10 years (OR:10.36; 95% CI:1.3-82) (Table 2); although as observed in the descriptive analysis, job satisfaction decreases between 10 and 14 years of experience and then increases again (Table 1).

Focusing on the influence of the different dimensions, the aspects most strongly associated with job satisfaction in both studies were perception of hospital management, promotion and development, recognition, participation and change management. However, when adjusting for potential confounders, associations with perceptions of hospital management and promotion and development were not statistically significant. After making this adjustment, the dimensions with the highest levels of association with job satisfaction in the 2016 survey were communication, work environment, training and relationship with supervisor, which were very similar to the results obtained in the 2013 survey, as shown in Table 3.

## Discussion

The response rate was less than 50% for both surveys, although similar studies that used anonymous questionnaires sent to all staff of an organization also had difficulty surpassing this participation rate [3,14-17]. However, some authors achieved participation rates above 50% in studies of more specific groups [18,19]. The participation rate was increased from 25.8% in 2013 to 41.7% in 2016, indicating some increase in adherence to the procedure.

In our experience, job satisfaction surveys help to establish strategic guidelines to manage human resources and to identify areas needing improvement. There should be enough time between surveys in order to ensure that the measures taken after the first survey have been effectively implemented and workers have noticed them before a second survey is implemented. However, overall job satisfaction is a less sensitive indicator with regard to monitoring the effectiveness of the implemented actions. In the present study, satisfaction levels are adequate, with a mean of 7 in both administrations; this finding is similar to the results reported by other authors [3,19] and higher than those obtained in surveys conducted periodically by the Basque Health Service and other studies similar to ours [4,13,18].

In both surveys, job satisfaction was higher among professionals without direct contact with patients, probably because of the emotional overload that chronic care involves, as many of these patients have a high degree of dependence or are in a terminal situation. According to our results, job satisfaction was associated with positive evaluations of dimensions related to organizational characteristics. The aspects most strongly associated with job satisfaction in 2013 were communication, work environment, recognition and relationship with supervisor, with adjusted OR  $\geq 5$ . In view of the survey results, measures were implemented to improve communication and relationship with supervisor. In the survey of 2016 better results were obtained regarding the perception of some of the considered dimensions, as shown in Figure 2. The aspects most strongly associated with job satisfaction in 2016 were communication, work environment, training and relationship with supervisor, with adjusted OR  $\geq 5$ . It is indicating that the measures taken on these issues probably will be the most effective to increase job satisfaction in our organization. In contrast, the socio-demographic variables showed little influence on job satisfaction, as they have in other studies [1,13,17].

Another interesting observation is that professionals with fewer than 10 years of experience in the hospital show greater job satisfaction, while job satisfaction decreases for staff with 10 to 14 years of experience at the hospital. These results are consistent with the burnout study conducted in 2012 in the same hospital, where a greater degree of involvement was also observed among staff with between 10 and 14 years of hospital seniority. However, the results of other authors have shown that work experience of more than 9 years is positively correlated with job satisfaction [20].

Of the various validated survey models considered, the Osakidetza survey [12] was selected because it evaluates job satisfaction and it also provides a systematic approach for setting and monitoring objectives related to improving job satisfaction. According to our results, a graphical representation of the percentage of workers with positive perceptions of satisfaction for each of the considered dimensions is the most adequate indicator for monitoring and evaluating the effectiveness of the measures adopted. This percentage provides more information than the mean satisfaction for each dimension or the overall perception of job satisfaction, indicators that showed little sensitivity to detecting changes.

The main areas of improvement identified in this study are training, recognition and perception of hospital management, which are similar results to those obtained in the study by Robles-Garcia [13] and to those of the studies conducted by the Basque Health Service since 2001. Fernandez-San Martin [2], in a study conducted with primary care professionals, found workload and promotion and development to be major areas for improvement; these are similar results to those found by Hernández-Zabala [17] in a study conducted in 4 health institutions. The strengths found in this study are relationship with supervisor, participation and perception of work quality, while the previously mentioned studies found working environment and working conditions to be strengths. Moreover, Ruzafa [18], in a study of Spanish nursing professionals working in British hospitals, found that the dimensions associated with higher job satisfaction were relationship with supervisor and peers, which were similar to the results found by Hernández-Zabala [17]. In a study conducted by Pérez-Ciordia [19] with primary care professionals, the most valued dimensions were training and workload.

It should be noted that the nursing staff greatly valued collaboration with medical staff, the cohesion of work teams and autonomy [16,21], as well as effective communication within the team [22,23]. All these variables contribute to the development of an organizational culture and become useful tools for clinical practice improvement [4] and for the motivation and retention of professionals. In contrast, autocratic hospital management, ethical conflicts and excessive workload are causes of stress and job dissatisfaction [20]. There are studies that correlate these factors with an increased rate of staff turnover and a decrease in the quality of services provided [14,24-27]. The role of middle managers is important in modulating and controlling conflict situations, promoting participation and increasing staff commitment and motivation [28].

A meta-analysis conducted by Zangano [8], in which 31 studies of more than 14.500 professionals were analyzed, found that the job satisfaction of nurses is mainly correlated with the levels of autonomy, work stress and collaboration with physicians; this is information that could be used to improve the working environment and increase job satisfaction.

According to various authors, effective delegation enhances job

satisfaction and professional development [29] because it promotes cooperation and improves self-fulfillment. Moreover, it is also important to improve communication and build shared values and experiences when creating an organizational culture [30]. The style of leadership, personality and attitudes of managers, can influence the perceptions of professionals and in their behaviors. The organizational culture is difficult to change. People can change their attitudes, but this change is unlikely to be sustained without a strong commitment of the organization. There's still a lot to do to get the change of the culture of health organizations a reality, and the managers should be the drivers of this change. Healthcare should focus on the patient, but the professionals and their job satisfaction can become an important engine of change.

## Limitations

The limitations of our study include its cross-sectional design, which does not allow conclusions to be drawn from causality or directionality of the relationships between the studied variables. Longitudinal studies would be necessary to analyze such relationships. There is a possible selection bias, since being the voluntary and anonymous participation; the most proactive professionals are usually the most participative. The third limitation is the low number of participants, given the small size of the organization, a fact that prevents extrapolating the results obtained.

However, despite this limitation, this study is of interest because it obtained information from all professional groups, in contrast to other studies that focused on more specific professional groups.

## Conclusions

The periodic evaluations of job satisfaction assess the state and evolution of worker satisfaction with respect to perceived reality and help to take corrective actions. The choice of appropriate indicators optimizes the information obtained through satisfaction surveys.

Indicators that are based on workers' perceptions of each of the dimensions that define job satisfaction are more sensitive to changes than an overall assessment of job satisfaction. According to our results, obtained in a Long-stay hospital, the graphical representation of the percentage of satisfied professionals for each of the analyzed dimensions is the best indicator to detecting changes and help to detect differences that were not evident in the rest of indicators analyzed. This finding is important in monitoring the effectiveness of the changes and in helping to select improvement areas in the management of human resources.

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