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By Fasanelli et al.

# Humanisation of care pathways: training program evaluation among healthcare professionals

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In recent years, medical care has come a long way thanks to technological improvements in diagnostics and treatment. Healthcare providers have developed many new care pathways, improving the organisation of care processes. In this context, the care pathway reduces the patient's choices, and the relationship between the health professional and the patient is less personal; the main drawback of this is that it could lead to dehumanisation of the patient. In 2015, the Local Health Unit of Naples (ASL NA1) set up the "Humanisation" project with the aim of accepting the patient as unique – as a human being – in care pathways. In this paper, we analyse the features of health professionals' satisfaction related to various aspects of a training course for health workers involved in the Humanisation project. We use a recent implementation of classification trees for ordered categorical response variables in order to identify the most relevant determinants of satisfaction. The results show that the main determinants of participants' satisfaction are the professional competence and responsiveness of the teachers, the skills acquired in the training course and increased personal awareness as a perceived outcome. Implications for the implementation of the Humanisation project are discussed.

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## 1 Introduction

Since their inception, healthcare professions have been interested in humanisation in all aspects to ensure the possibilities of meeting the care needs of the person. As underlined by González-Hernández (2015), it is important that formal caregivers show a high sense of commitment, loyalty, values and humanism in the implementation of care to every human being who requires it. Caring means engaging with people and things, give them attention, standing beside them, entering into communion with them, valuing them and understanding them in their interiority. In other words, empathising with people and things we care about and feeling responsibility for them (Guillén Velasco, 2010). In this regard, it is important to facilitate analysis and action among health professionals on the humanisation of care and of daily relationships during the care process.

Humanisation is not something that happens spontaneously – it must be fostered, learned and practised. We can say that humanisation opposes violence and that it reorganises labour relations and behaviours (Martins et al., 2008). Humanisation has led to significant changes in health practices, and has resulted in organisations adopting continuous improvement of management systems. The related issue of infringement and violation of the rights of patients in a hospital setting caused nursing care to stop and analyse this aspect of the job, which can negatively impact the ability to provide good care (Barrios Casas and Paravic Kliin, 2009). It is crucial to stress the importance of focusing our gaze on this component of care and highlighting the increasing risk of dehumanisation in patient care because of the vast administrative restructuring of most systems of healthcare. So the reestablishment of human and transpersonal aspects of care has become necessary in clinical, administrative and educational practices, as well as in research by professional caregivers (Ceballos Vasquez, 2010).

Health institutions serve the function of providing care through living work, and they are expected to be a core element of care for users; however, the delivery of care is poor because the different professionals working in the health services do not perform patient-centred care actions, but focus on procedures or techniques; this has now led to a crisis in these institutions. In addition, the hegemony of the model of medical clinical action impoverishes and even overrides the actions of other caregivers in the health team. For this reason, according to Fujita et al. (2012), when humanised care is introduced into a hospital, both patients and workers benefit to the extent that they perceive that their workers' jobs change, communication improves, their self-esteem increases and institutional leadership is strengthened.

Human care involves values, will and commitment to care, as well as knowledge, care actions and consciousness. It is considered as an inter-care reply to health-disease processes, a person-environment interaction, knowledge of the nursing care processes and self-knowledge. By engaging in human care, professionals should explore components of every act to allow them to enter a bond with the patient, which will lead to permanent

growth. For the advancement of scientific knowledge of nursing, it is of the utmost importance to have and provide tools that ensure validity and reliability when addressing this phenomenon, to allow us to discover or rediscover elements in care settings that make it possible to qualify the watch out (Romero-Massa et al., 2013). This research aims to help instructors to analyse other perspectives of this phenomenon and develop tools to better train new generations of caregivers. With the same goal, in 2015 the Local Health Unit of Naples (ASL NA1) launched the "Humanisation" project. Within this project, there are several interventions: a welcome point to assist patients in hospital; creating spaces for rest and refreshment for patients' family members; noise pollution elimination; improving humanisation between healthcare professionals, patients and their families through training programmes for health workers; and measuring patients' satisfaction.

The aim of this study is to assess and define the effectiveness of the training programmes for health professionals. Without a real evaluation process, it is not easy to establish whether the training is useful to the participants. According to Patton (1997), training participants should be included in the evaluation process and their voices heard. Active participation by training course participants ensures that the management team will be inclined to adjust their policies by surveying attendee opinions with satisfaction and feedback questionnaires. It means that the evaluation process is based on a framework of students' satisfaction, defined as a subjective evaluation of the various outcomes and experiences associated with education (Elliott and Shin, 2002). Therefore, this paper investigates the problem of measuring students' satisfaction ratings with respect to various aspects of a training course for health professionals in the Humanisation project. In particular, we analyse the data from the evaluation survey using a classification tree based on the CART procedure (Breiman et al., 1984; Galimberti et al., 2012) in order to detect common or anomalous patterns among the rating distributions for healthcare professionals' responses related to training activities or to the training course organisation.

The paper is organised as follows. Section 2 introduces the Humanisation project and its main interventions with focus on the training course for healthcare professional. Section 3 illustrates the methodological approach. Section 4 shows the healthcare professional satisfaction survey in ASL NA1 and the main results obtained. Some final remarks conclude the paper.

## 2 Humanisation project

The Humanisation project was funded by the Campania region of Italy in 2014 based on a grant of the National Health Fund (restricted fund FSN2013). It is run by the Local Health Unit of Naples (ASL NA1): specifically, a team of sociologists, a psychologist, a doctor and healthcare professionals coming from the Humanisation Service of ASL NA1, in collaboration with an external psychologist, a statistician, an anaesthetist and other professionals, in order to accomplish the grant objectives.

The project is dedicated to developing the processes of humanisation of care pathways and started in 2015. It is targeted at healthcare professionals working at ASL NA1 (e.g.

doctors, nurses and social health assistants), at patients admitted to ASL NA1 hospitals with their family members, Naples' citizens and affiliates of the citizens' associations. The main goals of the Humanisation project are: taking charge of citizens in care pathways considering their overall needs; providing a comfortable health environment and efficient organisational processes according to the care needs of patients; establishing transparency and accessibility of care information; improving the relationship between healthcare professionals, patients and their family members; and promoting the development of a good working environment in order to improve the relationship between healthcare professionals.

Establishing a specific working group on humanisation (GLU) in every hospital is one of the main activities of the Humanisation project. Working groups are made up of representatives of the various professional categories, hospital management and a representative of consumer associations. All working groups are coordinated by a central GLU. The latter has been able to create "humanisation guidelines" which help ASL NA1 to improve services for hospitalised patients. The second main activity relates to establishing welcome points at hospitals to assist patients. This choice was made to encourage comfort and create a warm environment where patients and their families can be orientated with respect to their needs. The third main activity relates to training courses for healthcare professionals, in order to improve the humanisation between health workers, patients and their families. Other activities of the project include: some structural changes to improve the health environment; setting up a support network for patient care in every hospital managed by ASL NA1; and carrying out a patient satisfaction survey.

## 2.1 Training course for health professionals

One of the most important components of the process of 'care' is the promotion of interpersonal relationships, and this has often been associated with the concept of humanisation. Article 4 of the Health Covenant 2014–2016 says that regional institutions undertake to implement actions of humanisation in the health environment, involving structural, organisational and relational aspects of health assistance as well as organising an annual programme of humanisation of care pathways, including training activity for healthcare professionals and activities in the field of organisational change. The Humanisation project aspires to help local health institutions in this regard by developing training activities for health workers with the aim of improving the care giving process.

The main activity of the Humanisation project is a training course for healthcare professionals with the aim of improving humanisation between healthcare professionals, patients and their families as well as the atmosphere at work. The training programme is based on problem solving, role-playing, a therapy group, active listening and empathy, and introspection. The training course was organised into eight training modules with the same programme, in order to ensure that each module was attended by a small number of health workers. Training modules were mainly focused on the issues of the relationship and communication with patients. Each training module was organised into three training sessions for a total of 18 hours of training.

# 3 Methodology

In this section, we briefly illustrate the statistical technique that was used for data analysis of the feedback survey. We present a classification tree that helps with identification of the main characteristics of satisfaction of health workers in training.

A classification tree identifies the relationships between a response variable, $Y$, and a set of predictor variables $(X_1, X_2, \ldots, X_p)$. In particular, a decision tree is obtained establishing a set of decision rules on the predictor space (Breiman et al., 1984).

Let $x_i = (x_{i1}, x_{i2}, \ldots, x_{ip})$ denote the $i$-th observation of the predictor variables. A binary tree is built by recursively partitioning the predictor space $\Xi$ into subsets so that the values of the response variable $Y$, corresponding to the cases $\{x_i \in A\}$ with $A \subset \Xi$, are more homogeneous (Chipman et al., 1998).

At the beginning all data are in a single node. This node is then split into two subsets according to a splitting criterion that identifies among the possible predictor variables the variable that provides the best partition of the initial set into 'child' nodes. Optimality is established by maximising the decrease of an appropriate measure of impurity that evaluates the degree of heterogeneity of the values comprising the response variable within a certain node. In particular, let $s$ be the split generated by a generic variable so that we have the 'parent' node, $t$, which generates the left and right child nodes, $t_l$ and $t_r$ respectively. The change in the impurity generated by splitting the parent node into the two child nodes is given by:

$$\Delta I(s,t) = i(t)pt - [i(t_l)pt_l + i(t_r)pt_r] \tag{1}$$

where $pt$, $pt_l$ and $pt_r$ represent the proportion of cases in the nodes $t$, $t_l$ and $t_r$ respectively. The best partition is given by the $s^*$ for which the decrease of the impurity measure is maximised with respect to all possible splits generated by the set of predictors:

$$s^* = s | \Delta I(s,t) = \max \tag{2}$$

This process continues until the tree attains its maximum size. In the next step, the tree is pruned, with branches that lead to the smallest decrease in accuracy removed. The final resulting tree is displayed as a connected and orientated graph where nodes represent the splitting variables, and the links illustrate the estimated threshold defining the two descendant subsets.

CART is a well-known binary segmentation procedure for building a decision tree (Breiman et al., 1984). First, it produces the maximal expanded tree; then it finds a sequence of nested pruned trees by cutting off the weakest link at each step according to a cost complexity measure (Therneau et al., 1997). However, the pruning step has to account for the trade-off between bias and variance due to the merging of terminal nodes and to the possibility of over fitting the data (Hastie et al., 2009). Complex tree structures are inaccurate because of increasing variance (very high sensitivity to sample data), whereas tree models having very few leaves are inaccurate because of increasing bias (not enough flexibility). CART identifies the best-pruned tree by means of a cross-validation approach.

The use of the CART methodology for ordinal responses has also been discussed by various authors (Breiman et al., 1984; Piccarreta, 2008; Galimberti et al., 2012; D'Ambrosio and Heiser, 2016). More specifically, the impurity measure is given by a measure of distribution heterogeneity, such as the Gini index or the generalised Gini index, and the cost complexity is measured by the absolute (or squared) differences between pairs of ordinal scores assigned to the various categories. In this regard, an original interpretation of the use of the Gini index for classification and regression trees is discussed by Montanari and Monari (2008).

Finally, to facilitate interpretation of the results, the CART procedure evaluates the relative importance of variables used to define a split. The greater the contribution of a predictor in reducing the overall impurity, the greater is its importance. CART sorts the variables according to their importance considering both of the roles they may have, that is, as primary or surrogate splitters. The latter are cut-points, with accuracy comparable to that of the first (primary) optimal splitters. Then, the variable importance is computed by summing up the improvement measures attributable to the given variable in its role as either a primary or a surrogate splitter and by scaling this overall improvement by the importance measure of the predictor with the best performance. A measurement of the variable's importance is then given by:

$$M(x_k) = \frac{\sum_{t \in \pi} \Delta I(\hat{s}_i t)}{\max_{1 \leq k \leq p} M(x_k)} \tag{3}$$

where $M(x_k)$ is the importance measure of the $k$-th predictor and $\hat{s}$ indicates the surrogate splits.

Tree-based methods are usually applied for predictive modelling approaches or exploratory data analysis (Siciliano et al., 2010; Iorio et al., 2015). They can also be used for variable selection since the measure of variable importance provides a useful ranking for subsequent analysis. The tree-based approach has two advantages: it is non-parametric, since no specific distribution of $Y$ is assumed, and it does not require any specification of the type of relationship (linear or non-linear) between $Y$ and the predictors.

## 4 Healthcare professional satisfaction survey

Sweeney and Ingram (2001) define student satisfaction as the perception of enjoyment and accomplishment in the learning environment. Elliott and Shin (2002) define it as a subjective evaluation of the various outcomes and experiences associated with education. According to Sinclaire (2014), these definitions focus on accomplishment and success in learning and on pleasure and enjoyment with the experience. Many researchers have attempted to clarify the concept of student satisfaction, developing measures to quantify it and identifying the factors that influence levels of satisfaction. Paraphrasing Gregg (1972), we consider student satisfaction as the degree of fulfilment that students express with the practical and theoretical aspects of the training experience.

The measurement of student satisfaction is a branch of the literature that deals with the concept of consumer satisfaction in which students are considered as primary customers of educational services (Hill, 1995). In educational systems, the supplier-customer relationship is not as clear-cut as some other service relationships, given that students are also 'partners' in the learning process (Yorke, 1999). According to Fontaine (2014), one might hesitate to call students 'customers' because of the student-teacher relationship. However, this does not change the fact that there would be no need for universities without students. More recently, the evaluation of students' experiences with respect to educational services was considered to be a metric of satisfaction in a pair of studies (Elliott and Healy, 2001; Moro-Egido and Panades, 2010). The student satisfaction literature borrows models, tools and methods of analysis from customer satisfaction literature, but differs mainly in the context in which these are applied.

Some interesting studies, among many others, on specific dimensions and variable interrelation have investigated the relationship between teaching quality and student satisfaction (Douglas et al., 2006; Petruzzellis et al., 2006; Letcher and Neves, 2010; Sinclaire, 2014) and have proposed tools for the assessment of the impact of work experience or institutional factors on student satisfaction (see Grunwald and Peterson, 2003; Moro-Egido and Panades, 2010). Most studies focus on a specific hypothesis concerning the relationship between student satisfaction and factors that drive the level of satisfaction.

Our study seeks to assess the significant drivers of the satisfaction of healthcare professionals in training using a student satisfaction framework. More specifically, this study provides a detailed analysis of the complex relationship between health professionals' characteristics, training characteristics, the teaching organisation and the impact on trainees' satisfaction.

The survey, conducted between March and May of 2016, was exhaustive and was carried out by means of an anonymous paper questionnaire filled out by trainees who attend a module of the course. The questionnaire was collected at the end of every module. The topics investigated by the questionnaire included the following: a) features of the respondent (age, gender, hospital, etc.); b) skills acquired in training; c) satisfaction with quality of educational infrastructures; d) satisfaction with organisation of training; e) satisfaction with trainer performance (professional courtesy, competences, responsiveness, etc.); f) global level of satisfaction with the training that the trainee received; and g) perceived outcome. For any item used in the questionnaire, respondents were asked to rate their level of satisfaction on a 6-point Likert-type scale, with (1) corresponding to extremely unsatisfied; (2) very unsatisfied; (3) unsatisfied; (4) satisfied; (5) very satisfied; and (6) extremely satisfied.

In the following section, we report the results from the analysis of the healthcare professional feedback survey, and we focus our attention on the differences between trainees' feedback because these can immediately be attributed to the quality of the service rather than to the traits peculiar to the training process.

### 4.1 Data analysis and results

The data were gathered from 330 health professionals attending eight training modules in the Humanisation project of ASL NA1. Of these, 61.2% of respondents were registered nurses, 30.3% were doctors, 4.2% were social health assistants, 2.1% were case-workers and the remaining 2.1% were members of citizens' advocacy associations. About 86% of health professionals claimed to be satisfied (ranging from moderately satisfied to extremely satisfied).

We considered the overall satisfaction ($SAT$) (measured on a 6-point scale) as the response variable, and looked at 24 possible predictors. The complete description of the dataset is reported in Table 1.

Table 1: Dataset description

| Acronym | Description | Nature | # of categories |
|---------|-------------|--------|-----------------|
| GEN | Gender of trainees | Nominal scale | 2 |
| AGE | Age of trainees, in years | Numeric scale | na |
| JOB | Healtcare job role of trainees | Nominal scale | 6 |
| HOS | Hospital | Nominal scale | 8 |
| SAT | Overall satisfaction | Ordinal scale | 6 |
| CLC | Clarity of contents | Ordinal scale | 6 |
| COC | Completeness of contents | Ordinal scale | 6 |
| EPP | Effects on professional practices | Ordinal scale | 6 |
| IPS | Increase of professional skills | Ordinal scale | 6 |
| ISA | Increase of self-awareness | Ordinal scale | 6 |
| MSA | Main skill acquired in training | Nominal scale | 8 |
| OOR | Overall organization | Ordinal scale | 6 |
| PAT | Redefinition of personal attitude of trainees | Ordinal scale | 6 |
| PIM | Positive impact on trainees' mood | Ordinal scale | 6 |
| SFA | Structure and facilities appropriateness | Ordinal scale | 6 |
| SPE | Satisfaction of personal expectations | Ordinal scale | 6 |
| TAD | Timing appropriateness with respect to discussions | Ordinal scale | 6 |
| TAG | Timing appropriateness with respect to group tutorials | Ordinal scale | 6 |
| TAT | Timetable appropriateness with respect to topics | Ordinal scale | 6 |
| TAV | Trainers availability | Ordinal scale | 6 |
| TCO | Trainers competences | Ordinal scale | 6 |
| TEX | Trainers expertise | Ordinal scale | 6 |
| TPC | Trainers professional courtesy | Ordinal scale | 6 |
| TPR | Trainers promptness | Ordinal scale | 6 |
| TRE | Trainers responsiveness | Ordinal scale | 6 |
| TTI | Training timetable | Ordinal scale | 6 |
| UCO | Usefulness of contents | Ordinal scale | 6 |
| UTT | Usefulness of training topics | Ordinal scale | 6 |
| WEL | Welcoming | Ordinal scale | 6 |

We applied the classification tree in order to explain the dependence of overall satisfaction (SAT) on all the other features of the training course, but also to define the importance of each predictor with respect to the dependency structure of the response

variable. The classification tree was built by means of the "rpartScore" package (Galimberti et al., 2012) implemented in the statistical computer programming environment "R" (R Core, 2016). This choice is mainly justified by the fact that the overall satisfaction is collected as ordinal variables, and the rpartScore package uses the general CART framework, allowing the building of classification trees for response variables with ordered categories. The tree analysis refers to 330 valid questionnaires.

The classification trees were built using the generalised Gini splitting function based on absolute differences in scores. In other words, the cost of misclassification is given by the absolute differences in scores assigned to the categories within the response. The selection of the optimal tree size was obtained with a procedure based on the cost-complexity metric (Breiman et al., 1984). In our analysis, pruning is based on the total misclassification cost (Piccarreta, 2008) because the response variable is an ordinal variable. The final tree was selected via 10-fold cross-validation, and we used $1 - SE$ rule for the tree pruning procedure identifies a final tree with eight terminal nodes.

Figure 1 and Table 2 show the decision tree obtained. The median score for overall satisfaction evaluated from one terminal node out of six is greater than the one calculated on the entire sample (6 versus 5). The most important node (terminal node 7) represents 8% of the trainees and corresponds to the highest level of overall satisfaction (equal to 6). Respondents belonging to this node are characterised by very high ratings concerning usefulness of the training topics ($UTT > 4$) and totally positive impact on trainees' mood ($PIM = 6$). Terminal node 13 represents 62.4% of the trainees and is marked by a level of overall satisfaction equal to 5. Respondents belonging to this node are characterised by very high ratings concerning usefulness of the training topics ($UTT > 4$), positive (or negative) impact on trainees' mood ($PIM < 6$) and positive increase of self-awareness ($ISA > 3$). In addition, terminal node 25 (about 4% of the trainees) is marked by a level of overall satisfaction equal to 5. Respondents belonging to this node are characterised by very high ratings concerning usefulness of the training topics ($UTT > 4$), positive (or negative) impact on trainees' mood ($PIM < 6$) and negative increase of self-awareness ($ISA \leq 3$), but were extremely satisfied with timetable appropriateness with respect to topics ($TAT = 6$). On the other hand, about 3% of the trainees are marked by a median level of overall satisfaction equal to 5 (terminal node 4). Respondents belonging to this node are characterised by low ratings concerning usefulness of the training topics ($UTT \leq 4$) but they have stated that the main skill acquired from the training course is that of better relational skills ($MSA = Bsrs$).

Finally, we derived the variable importance measure from the "rpartScore" package. Usually, a variable importance indicator is used when dealing with recursive partitioning methods (Carpita and Vezzoli, 2012). To overcome the bias in the variable importance tool implemented in the CART methodology (Strobl et al., 2007), we estimated the variable importance distribution of each prediction, performing 1000 bootstrap replications of the ordinal tree. In this way, we obtained a robust ranking of considered variables. Results are shown in Figure 2 and Table 3.

In Figure 2 we report the bar-plot of variable importance. The horizontal line indicates the cutoff value between more and less significant variables. All predictors showing importance values around or lower then this line should be considered as less important.
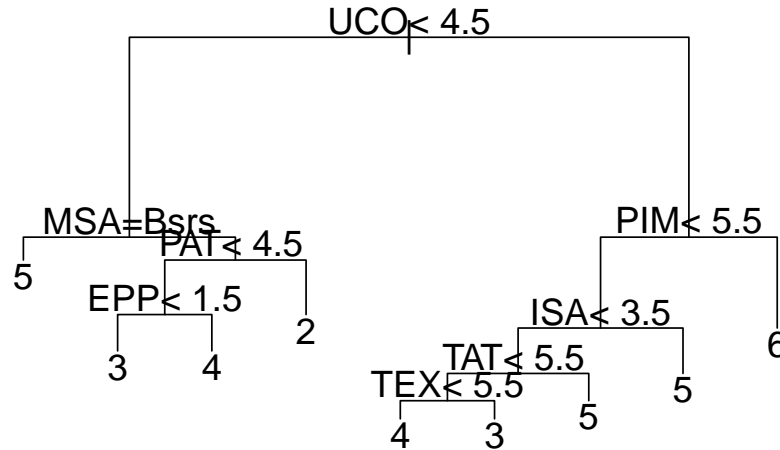
Figure 1: Classification tree

The first five variables show high levels of importance. These variables are: main skill acquired in training ($MSA$); increase of self-awareness ($ISA$); effects on professional practices ($EPP$) as a perceived outcome; increase of professional skills ($IPS$) and usefulness of training topics ($UTT$). A few further variables (structure and facilities appropriateness ($SFA$), clarity of contents ($CLC$) and timetable appropriateness with respect to topics ($TAT$)) seem to have some role in determining the global level of satisfaction; however, their importance is rather small compared with the importance of the first five variables.

Table 2: Classification tree description

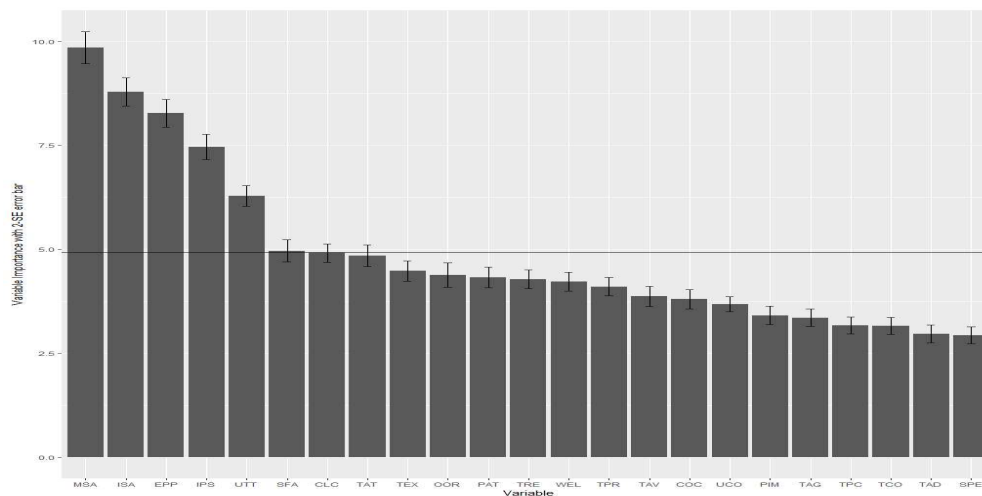| Node | Size | Splitting rule | Improve | Pred.Score | Node type |
|------|------|----------------|---------|------------|-----------|
| 1 | 330 | UCO<4.5 | 0.157 | 5 | Internal |
| 2 | 64 | MSA=BSRS | 0.212 | 4 | Internal |
| 3 | 266 | PIM<5.5 | 0.114 | 5 | Internal |
| 4 | 4 | — | — | 5 | Terminal |
| 5 | 60 | PAT<4.5 | 0.225 | 4 | Internal |
| 6 | 240 | ISA<3.5 | 0.085 | 5 | Internal |
| 7 | 26 | — | — | 6 | Terminal |
| 10 | 51 | EPP<1.5 | 0.192 | 4 | Internal |
| 11 | 9 | — | — | 2 | Terminal |
| 12 | 34 | TAT<5.5 | 0.233 | 4 | Internal |
| 13 | 206 | — | — | 5 | Terminal |
| 20 | 8 | — | — | 3 | Terminal |
| 21 | 43 | — | — | 4 | Terminal |
| 24 | 22 | TEX<5.5 | 0.353 | 4 | Internal |
| 25 | 12 | — | — | 5 | Terminal |
| 48 | 12 | — | — | 4 | Terminal |
| 49 | 10 | — | — | 3 | Terminal |



Figure 2: Measure of variable importance

## 5 Final remarks

This article analyses the feedback that healthcare professionals give about the quality of training received. The interpretation of results is quite intuitive; for this reason, this statistical tool can be useful to health management or, in general, to non-expert users

of statistical techniques. The analysis has produced interesting outputs: it can help users to gain further insight into the problem of assessing the performance of training courses as well as measuring the impact of respondent's profiles on trainee satisfaction. The classification tree has shown different paths in the hierarchical structure helping us to identify the different interactions between trainee satisfaction and its predictors. Specifically, interactions between high ratings concerning usefulness of the training topics and positive impact on trainees' mood, as well as positive increase of self-awareness, are the key path that identifies satisfied trainees. Furthermore, the classification tree has made possible the identification of the main drivers of trainees' overall satisfaction, providing the ranking of the variables by importance with respect to their ability to predict overall trainee satisfaction. The most important variables are referred to two domains: the organisation of the course and the perceived outcome. Specifically, the variables of this latter domain – increased self-awareness ($ISA$), effects on professional practices ($EPP$) and redefinition of personal attitude of trainees ($PAT$) – could be considered as the training needs of health workers in the field of humanisation.

The training course gave participating healthcare professionals both a positive experience and new knowledge that, in our opinion, are important factors having a positive impact on the relationship between health professionals and patients in a care pathway. The results provided us with valid choice criteria for the most important issues to take into consideration in a relationship between healthcare professionals and patients. This method could be successfully used to improve the quality of solutions in the process-planning domain, offering useful elements for future training courses.

Public health is built in small steps. It is the discipline that deals with the overall health of a population under prophylactic, curative and educational regimes. For the World Health Organisation (WHO), it is "the collective management of the health of a population in their living environment, whether in care, prevention, education or social hygiene". Its mission is to protect individuals and improve their welfare. Its actions should focus both on individual behaviour and on the environment. To achieve this objective, it was proposed to restore the institutional architecture of the safety system and improve the system of continuing education for health professionals. The consequence of this is that understanding the needs of the hospital patient became crucial. Hence, professionals have to establish a relationship of trust and a culture of listening to the patient and family, identifying response modes adapted to the constraints of the service. But some aspects of healthcare, such as prevention, are not in themselves medical disciplines: they are better defined as a way of understanding health issues. To do this, professionals must have research tools, monitoring systems and diagnostic and specialised actions. We hope that our work can help training planners in this field to identify one of these tools to enhance their work.

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