Evaluation of customer satisfaction at the Department of Paediatric Dentistry of “Sapienza” University of Rome

G. IERARDO, V. LUZZI, A. VESTRI*, G.L. SFASCIOTTI, A. POLIMENI

ABSTRACT: Aim Healthcare facility management requires the optimisation of the quality of services offered. Methods The Authors adopted a questionnaire as a means to assess customer satisfaction and needs. The Questionnaire has been designed to address adults, i.e., parents or guardians of children attending the Paediatric unit as patients. To estimate their degree of satisfaction, either regarding the environment where children are treated or about the direct interactions between the parents and the structure (waiting room, waiting time, treatment time and time needed to make the payments, costs, etc.), the questionnaire was submitted to a sample of approximately 600 customers, between March and June of 2005. Results On one hand results provide a pleasant confirmation on customers’ perception of the service, especially regarding the direct relationship between the parties; on the other, they highlight aspects that could be improved (waiting room, optimisation of waiting time), distinguishing between factors that need extra funding to be implemented, and those that, instead, could be simply improved through a better and more efficient organisation of labour and time. Conclusion The present analysis and previous experiences confirm that appraisal of the degree of customers’ satisfaction by means of questionnaires is a valid and necessary instrument for the quality improvement of a healthcare service. Doing so, economic and human resources can be more efficiently allocated.

KEYWORDS: Health quality; Efficacy; Efficiency; Set of questions.

Introduction
The concept of quality of Healthcare services. Healthcare management requires optimisation of the quality of services offered. Donabedian [1980] defines quality of care as the best possible management of the trade-off between benefits and risks, both on an individual and community level, stating: “Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge”. Palmer underlined the role of quality as satisfaction of health needs that takes into consideration the resources involved [Bonardi et al., 1994]. In line with this thinking, we can refer to the broader definition of the International Organisation for Standardization that, with the ISO standard 8402, unifies the two approaches, defining Quality Control as “the operational techniques and activities that are used to fulfill requirements for quality” [ISO 8402, 1994].

The quality of a service should be determined through the following five elements or dimensions that concur to its definition.
- The structures: conceived not only as infrastructures, but also as instruments and staff (professional and organisation).
- The process: as activities carried out by several corporate functions and aimed to satisfy customer’s needs.
- The cost of production and delivery: it is evident that a product/service/performance supplied at a high cost will be accessible to a limited number of clients, particularly within the public service.
- The outcome: the result of a process is a service or a product. When the service has qualitative values it can be referred to as outcome.
- The client’s satisfaction: the ultimate goal of a service, especially within the health care, is customers’ satisfaction.

A more detailed list of dimensions was also proposed by Hannu Vuori for the WHO, in “Quality assurance of health services: principles and methods” [Vuori H., 1982], the most important of which are represented by the concepts of Effectiveness and Efficiency (Table 1). Effectiveness is “the capacity of an intervention to achieve the expected result”, while Efficiency is classically defined as “the ratio between an intervention that is efficient and its related costs”.

Our study focused on the Efficiency, trying to streamline one of the two fundamental concepts related to the quality of a health service. To this end, it might be worth stressing that numerous methodologies enabling the efficiency evaluation of health structures already exist; however, all show a high degree of variability and uncertainties and, therefore, can produce false results. Retrospective studies are the most widely applied method, which analyses the outcomes produced by the quality of the service offered on the end users of the service. Therefore, the majority of the studies, including the present one, analyse customer satisfaction through questionnaires, to assess the quality of the structure that needs to be evaluated.

The Department of Paediatric Dentistry of the University of Rome “La Sapienza” is equipped with ten dental units; nine are placed in an open space, following the psychological approach of emulation, where the presence of other children promotes a positive attitude and cooperation. A dental unit is located in a separate area for special needs patients.

At the Paediatric unit are performed all paediatric dentistry clinical treatments:
- specialist examination in children aged 0-12 years of age;
- dental care and related dietary advice;
- preventive treatments (sealing, fluoride gel application);
- endodontic treatments of deciduous and permanent teeth;
- cosmetic reconstitution of frontal fractured teeth;
- preventive and interceptive orthodontic treatments;
- myofunctional therapy;
- paediatric oral surgery;
- paediatric dentistry counselling in the University Paediatric Department;
- treatment of special needs children (Day hospital).

The Paediatric Dentistry Department has undergone a series of works on its structure, which has produced evident changes not only for the patients but also for the staff. Those works were conceived to optimise the division efficiency, improving both the comfort for the young patients and their escort, and treatments with the use of more functional instruments and means. Particularly, the dental chairs have been provided with monitors and a wireless system that allow children to watch cartoons during the procedures, thus reducing anxiety and increasing their compliance. This would also allow optimisation of visits schedule: in fact, a more comfortable environment that makes a child more collaborative, helps reducing the time needed for the treatment, and ultimately allows for a greater availability of staff and a higher number of patients treated.

The Paediatric Dentistry Department is equipped with new devices to improve efficacy and efficiency of service: materials, radiographic RVG, laser surgery, endodontic devices, computerised cephalometric equipment, digital archives, etc. (Fig. 1, 2, 3).

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**Table 1 - Quality components (WHO).**

**Materials and methods**

The Questionnaire is designed to be addressed to adults, in the specific case to the parents or guardians of the children who attend our unit. All questions required a single answer.

To estimate their degree of satisfaction, either regarding the environment where children are treated or about the direct interactions between the parents and the structure (waiting room, waiting time, treatment time and time needed to make the payments, costs, etc.), the questionnaire was submitted to a sample of approximately 600 customers, between March and June 2005. All questionnaires were filled and returned.

Since the overall sample has been divided into three
groups - of approximately 200 customers each - three different types of questionnaires have been formulated, and each group was provided with only one questionnaire. To differentiate, the three questionnaires were assigned with different colours: white for customers at their first visits, blue for customers who have been attending the unit for approximately 6 months, and yellow for those who have been attending the unit for approximately one year.

The white questionnaire was composed of several questions clustered in three categories:
- anamnestic elements;
- relationship with the structure;
- relationship between children and medical staff.

Anamnestic elements. This category comprised the reasons that led the customers to the Unit.

First, it was asked by whom they have been advised to turn to the unit: relatives/friends, mass-media, other dentists or referred by other health services.

Then, the reasons for turning to a university clinic were investigated, suggesting a set of answers, such as: competency of operators in paediatric dentistry, low service costs or prior experiences with other medical facilities (asking to specify if the latter were public or private).

Subsequently, it was asked if the child had previous experiences with other dentists, and whether those had been positive or negative.

Lastly, it was asked the reason of a first visit: i.e., pain, check up without painful symptoms, orthodontics needs, or prevention of oral pathological conditions.

Relationship with the structure. This category dealt directly with the relationship with the facility. After the request for a generic opinion about the unit, the questions aimed to obtain a judgment about specific areas, such as the waiting room. Information regarding working and school days spent annually for the treatments by the parent and the child, respectively, were also asked.

Finally the customer was explicitly asked what he/she would have liked to see improved, related to the performances of the unit, suggesting a series of options, and the overall judgment when comparing the unit with other public services.

Relationship children-medical staff. The third and last category was intended to estimate the relationship with the medical staff. Therefore, the customer was asked to express an opinion on hospital attendants and administrative staff.

This sections had questions related to the communication and, therefore, to the exchange of information between customers and medical staff, about the quality of information and their source.
(medical, paramedical or administrative staff).

Other questions aimed to test the efficiency of the administrative staff from the point of view of the time needed to make a payment.

Each questionnaire had open and multiple-answer questions, to which codes and sub-codes were assigned.

This method, used in order to make data elaboration more rigorous, subsequently enabled a cross comparison between the groups and the time factor, allowing an assessment of whether the changes suggested by the customers were indeed necessary to improve the unit.

**Results**

The following graphics show significant data emerged from the survey (Fig. 4, 5, 6, 7) and refer to questions present in the three questionnaires.

**Cross analysis.** The following analysis was carried out comparing the three questionnaires (white, blue and yellow) in order to understand whether the customers’ opinions and their degree of satisfaction could vary with time. This would have helped us understand how to improve the service offered by the Paediatric unit. Answers to the most meaningful questions were then analysed.

From Figure 8 it emerges that the judgement on the working environment does not change over time and it is overall extremely positive. The percentage of parents/guardians who think that the unit is comfortable is in fact around 97%.

Analysing the question displayed in Figure 9, it can be seen that, for parents, the waiting room becomes more "stressful" and "unbearable" in relation to time.
spent in there, as highlighted by comparison of the three questionnaires.

As confirmation of this, in Figure 10, which refers to the yellow questionnaire, the majority of the answers highlights that customers would like a more comfortable waiting room. More than 50% of the customers would also like a reduction in waiting time.

Figure 11 shows the degree of appreciation of the customers when comparing this unit with other public health facilities. The judgment toward the unit is always positive, despite a slight decrease of satisfaction of 5-6 points percentage when analysing the answers of customers who had been visiting the unit for about one year. Overall, the average opinion is "efficient".

Figure 12 and 13 show that the judgement about hospital attendants (Graph. 5) and administrative staff
Comparing Figures 14 and 15, it can be noted the same level of dissatisfaction recorded for both the waiting time for treatments and the time needed for administrative procedures, with a percentage increasing from 33\% to 42-43\% over time. However, the waiting time is rarely more than an hour for 88\% of the customers.

**Discussion**

The information collected enabled a detailed analysis of the customer experience, which is at the base of our planning for the improvement of the quality of service. From these results, it emerges that most of the customers came to the unit following the advice of a family member (42\% of the interviewees), while a good part were referred by paediatricians (27\%) or by their own dentist (17\%). Customers visit this unit mainly because of the competences of the operators (60\%). Even if expressed with a lower percentage (27\%), another important reason is represented by the low costs.

The anamnestic elements offered therefore a clear picture of how the unit is perceived from the outside, with a remarkable positive feedback, either by other health providers and the public opinion. Moreover such meaningful result does not change over time, to prove that customers’ expectations have not been deceived.

The next step involved the analysis of customers’ opinions regarding their direct experience with the facility. The results obtained provided an equally clear picture on what customers perceive as positive and on what, instead, would need some sort of improvement. It can be said that the feedback is particularly satisfactory for what concerns the first impression on the unit and its acceptance. This highlights that the recent restructuring work at the unit have had benefits particularly on the comfort of the patients. On the contrary, the feedback on the timetables, both for treatment and waiting times, is still unsatisfactory. Furthermore, it is interesting that the judgement of “unbearable” waiting time worsen with time. A reduction of the waiting times (53\%), whose length is for the greater part of the interviewees due to the high number of patients attending the department, and an improvement of the atmosphere of the waiting room (33\%) are considered by customers as priorities amongst the aspects that would need to be improved in order to make the unit more efficient. In relation to the structure, the only dissatisfaction regards the waiting room, which is the only area that has not been involved in the renovation works. To conclude the analysis of the customer relationship with the structure, it can be said that overall, and especially if compared to other public services, the feedback on the efficiency of the unit ranges between “very efficient” (28\%) and “efficient” (68\%), the latter slightly less positive feedback due to the time spent waiting.

The last series of questions, regarding the relationship with medical and auxiliary staff enabled the estimate of another essential aspect related to the efficiency of a health service: the exchange of information and the relationship between the parts.

Generally, opinions are decidedly positive for what concerns the relationship between child and dentist and when it comes to the judgement on both medical and administrative staff. Besides, this feedback does not change over time. The same can be said for the exchange of information between the customer and several operators, which was satisfactory for most of the interviewees.

Also in this last part of the questionnaire a negative result is reported in relation to the timetables of administrative procedures. Comparing the three questionnaires, it emerges that the percentage of those who complain for long waiting times increases over time, which probably has to be attributed to a lower tolerance for the prolonged treatment than to an actual increase of such times. A confirmation to this is given by the fact that, passing from the White to the Yellow questionnaire, the average time needed to carry out the payments remains stably comprised between half an hour and one hour (for 64.5\% of the customers).

**Conclusion**

In conclusion, such results on one side offer pleasant confirmations on how the customers perceive the service, in particular for what is the direct relationship between the parties; on the other, they highlight the aspects that could really be improved (waiting room,
optimisation of waiting times), distinguishing between the factors that need extra funding to be improved, and those that, instead, can be implemented only through a better and more efficient organisation of labour and time.

The present analysis and prior experiences confirms that appraising customers’ degree of satisfaction by means of questionnaires is a valid and necessary instrument for improving the quality of a health service. Doing so, economic and human resources can be more efficiently allocated.

References