


Management and administration of dental health services

Gestão e administração de serviços de saúde dentária

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ABSTRACT

Within medical informatics there's dental informatics, which deals with the management of information, communication, and the application of new technologies in clinical practice and research. These computer systems involve the storage of information and will be in charge of organizing the work in the dental clinic. (Specified, 2009) Objective: The primary objective of this research work is to know the need to manage and administer dental health services through computer systems in the city of Chiclayo. Method: It is a cross-sectional, descriptive, observational, and prospective study. Which comprised conducting questionnaires to the owners of dental clinics, administrative personnel, dentists, and patients who attend the different dental clinics that are in the City of Chiclayo. Results: We verified that there were contrasting hypotheses. Conclusions: We conclude that there is a need to implement dental clinics with computer systems.

Keywords: computer systems, dentistry, management, administration.

RESUMO

Na informática médica há a informática dentária, que trata da gestão da informação, comunicação e aplicação de novas tecnologias na prática clínica e investigação. Estes sistemas informáticos envolvem o armazenamento de informação e serão responsáveis pela organização do trabalho na clínica dentária.(Especificado, 2009) Objectivo: O principal objectivo deste trabalho de investigação é conhecer a necessidade de gerir e administrar serviços de saúde dentária através de sistemas informáticos na cidade de Chiclayo. Método: É um estudo transversal, descritivo, observacional, e prospectivo. Que incluiu a realização de questionários aos proprietários de clínicas dentárias, pessoal administrativo, dentistas e pacientes que frequentam as diferentes clínicas dentárias que se encontram na cidade de Chiclayo. Resultados: Verificámos que existiam hipóteses contrastantes. Conclusões: Concluimos que existe a necessidade de implementar clínicas dentárias com sistemas informáticos

Palavras-chave: sistemas informáticos, medicina dentária, gestão, administração.

INTRODUCTION

The considerable increase in the population worldwide and the lack of planning in the development of health services by some developing countries translates into an excessive demand for these services and especially in dentistry where the problem ranges from the difficulty of getting an appointment to the limitations in providing specialized treatment.

Peru does not escape this, since the health system it has is difficult to provide specialized care in dentistry. Leaving patients many times without dental care,

since the process is very bureaucratic and abhors the user. This is probably for poor management or a lack of IT systems.

In 2019 Peru ranked 77 out of 80 countries concerning the Networked Readiness Index (NRI), an index that measures the propensity of countries to take advantage of the opportunities offered by information and communications technology (ICT).(Dutta & Lanvin, 2019) The World Health Organization (WHO)(Seventy-First World Health Assembly, 2020) n 2018 it bets on digital technologies as an important weapon to improve public health.

Thus, digital technologies have been progressively being incorporated into dental practices, being used by professionals. Getting to play an increasingly important role in the dental field.

Using technologies is used in various specialties of the profession such as oral rehabilitation, where the scanner, design, and manufacture of devices are developed, using computers for this. Likewise, it has been possible to use digital devices to manage appointments and use it as a means of communication with patients. (Mühlemann et al., 2019; Parmar et al., 2018)

In this sense, the present research aims to identify the need to implement the private dental office with computerized systems for its management.

METHODOLOGY

This is a cross-sectional study, where 7 dental office owners and administration managers were interviewed, 40 dentists who worked in 12 dental clinics in the historic center of the city of Chiclayo, and 100 patients who attended dental office. The inclusion criteria that were taken into account were that dentists should work at least 3 months in dental offices in the city of

Chiclayo, patients who attend at least 3 appointments at dental clinics in the city of Chiclayo. Administrative personnel who work for at least 3 months in the dental clinics of the city of Chiclayo. All personnel involved should agree to the study by signing informed consent. The technique and instrument used are called surveys, and the instrument was the questionnaire. We used 3 questionnaires for clinic owners, dentists, administrative staff, and patients. The author elaborated instruments, 16 questions in the survey directed to owners of dental clinics, 11 questions for dentists, 16 questions for patients. We performed the validity and reliability of the research instruments by three experts. A pilot study demonstrated reliability. Subsequently, it was verified through the Crombach alpha that the collection form is valid and reliable, so it must be > 0.7 , therefore, our survey is valid and reliable since our items have a value > 0.7 . In order to carry out the present investigation, it was necessary to send applications to get permits to dental clinics to carry out surveys both to the owners and to the staff that works in the dental clinic and the patients who attend. 15 applications were submitted to the different dental clinics that are in the historic center of the City of Chiclayo, of which only the owners

of 7 dental clinics were interested in conducting the surveys. 7 owners, 7 administration managers, 40 dentists, and 100 patients were interviewed. We addressed the questionnaires to the owners, administration managers, dentists, and patients of the dental clinic. These questionnaires were aimed at collecting information about the knowledge, acceptance, satisfaction of those involved (owners, administrative staff, dentists, and patients), depending on these dimensions, the need to implement computer systems in the management of private dental clinics will be determined in the city of Chiclayo.

For the proposed objectives, we contrasted it with the hypothesis of the proportions giving a basis for compliance with the correct proportions in the different objectives, these proportions were calculated and averaged with the geometric average indicator given the use of proportion calculations. Some proportions were correct, they took 100% of the answers, with these values mostly not considered for the calculation of the proportion.

For each aim, we adapted them to the interview queries according to the following description:

Consulted	Investigation objectives	Proportions in the questions for the Indicators
	Objectives of the creation of Dental Clinic	Q2: Other profit motives and Q4: Clinic goals in relation to patient service
Clinic owners	Knowledge of computer systems	Q8: Knowledge of any computer system
	Acceptance of computer systems	Q15: program need and p16: system need
Dentists	Knowledge of computer systems	Q2: knows the existence of a computer system, Q3: knows any computer system, Q4: knows if the clinic works with a computer system
	Satisfaction of computer systems	Q9: clinic needs to implement a computer system, Q10: needs a computer system to perform diagnosis, treatment plan, treatments performed

Administrative staff	Knowledge of computer systems	Q2: knows about the computer system, Q5: knows about the computer program, Q7: preference to use program and computer system
	Acceptance of computer systems	Q9: need computer program, Q10 need computer system, Q11: improvement if computer system is implemented
Patients	Media	Q5: determination of the communication medium you remember the most

RESULTS

According to the hypotheses raised, we verified that the knowledge of the owners about computer systems in the management of private dental clinics in the Chiclayo district is not poor, the owners of the dental

clinic accept the implementation of computer systems, the administrative staff accepts the computer systems in the management of private dental clinics in the Chiclayo district. As shown in table 1.

Table 1

Significant and non-significant responses

QUESTIONS	Zc: Action indicator, Compared to Tabular value Z (95%) = 1.96	p – value
If you know any computer system to manage Dental Clinics	0.571	0.02 *
You need a program and computer system to manage the company	0.857	0.01 *
Learn about the system and computer program to manage Dental Clinics	0.470	0.39 ns
Satisfaction based on the need for a program and computer system for company management	0.570	0.33 ns

Learn about the system and computer program to manage Dental Clinics	0.420	0.32 ns
Satisfaction based on the care provided in the clinic	0.618	0.242 ns
The right ones (WhatsApp, phone call)	0.300	0.09 ns

Significant at 0.05 * ($Z_c > Z$ (95%), or p-value < 0.05) Not significant ns ($Z_c < Z$ (95%), or p-value > 0.05)

Source: Survey applied Owners of private dental clinics in the Chiclayo district
Own elaboration

DISCUSSION

The research works carried out do not deal with issues related to computer systems about to dentistry. They deal with the creation of computer systems in the health sector, and few systems focus their work on dentistry. Thus, there are works focused on carrying out projects to develop software in specific areas of dentistry such as medical records in dental prosthetics, which considers that medical records, besides being a legal, medical document, is the ideal means to achieve dental diagnosis and treatment. The computer systems used in dentistry also cover dental treatments themselves, since, at the time of diagnosis, it closely relates this to the patient's budget. (Santos Diaz & Jordan Landeta, 2019)

Other studies focus on implementing computer systems in dental practices where they find that many of the offices do not implement it because of lack of knowledge and little preparation, but that they would

like to have a computer system. (Sierra & Jaqueline, 2015)

The results got in this study coincide with ours since we thus get similar results with our study, where coincidentally the respondents affirm the need to have a computer system. (Carlos Castillo & Gamarra Astocondor, 2018)

It should not be forgotten that in relation to forensic dentistry, computer systems are already being implemented in this area, where results got have improved the forensic work. (González, 2016)

The most popular computer systems used in dentistry are Omi360, Dentalink, Odontonet, Dentactil, Dentidesk, Dricloud, Gesden g (Carlos Castillo & Gamarra Astocondor, 2018) Unfortunately, in Peru, computer systems are not widely spread, and much less implemented. Only a few of dental clinics have this implementation.

CONCLUSIONS

The owners of dental clinics in the city of Chiclayo affirm that the aim of creating their dental clinic obeys the service of the public, which is statistically significant. It is significant that the owners of the clinics know about the existence of computer systems used for management. The owners accept the implementation of their dental clinics, which is statistically significant. The vast majority of dentists have poor knowledge about knowledge of computer systems, but this is not conclusive since it is not significant. Regarding the satisfaction of the dentist with the computer systems that exist in the dental clinic, we can affirm that they are unhappy, but we also considered this information unremarkable. The knowledge of the administrative staff on computer systems in the management of private dental clinics in the Chiclayo district is poor but not significant. They evidence that there's a statistical significance to the acceptance of computer systems by administrative personnel. The vast majority of patients are dissatisfied with administrative care, but we considered this minor. The patients perceive the mentioned means of communication are not adequate

to manage Dental Clinics, which is not significant.(González, 2016)

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