



## **Results of telemedicine and its doctor-patient interaction, in the face of the COVID 19 pandemic, in the working population of the city of Manta**

### **Resultados de la telemedicina y su interacción médico-paciente, ante la pandemia del COVID 19, en la población laboral de la ciudad de Manta**

#### **Autor/es**

Autor 1 Adriana Cecibel Aragundi Muñoz  
Orcid <https://orcid.org/0000-0002-8809-1861>  
Universidad Laica Eloy Alfaro de Manabí  
[Adriana.aragundi@uleam.edu.ec](mailto:Adriana.aragundi@uleam.edu.ec)

Autor 2 Armando José Juárez Mendez  
Orcid <https://orcid.org/0000-0001-9406-036X>  
Universidad Laica Eloy Alfaro de Manabí  
[Armando.juarez@uleam.edu.ec](mailto:Armando.juarez@uleam.edu.ec)

Autor 3 Carmen Julia Espinoza Arias  
Orcid <https://orcid.org/0000-0002-5720-3795>  
Universidad Laica Eloy Alfaro de Manabí, Ecuador  
[Carmen.espinoza@uleam.edu.ec](mailto:Carmen.espinoza@uleam.edu.ec)

Autor 4 Josué Manuel Matute Santana  
Orcid <https://orcid.org/0000-0001-7000-1779>  
Universidad Laica Eloy Alfaro de Manabí, Ecuador  
[josue.matute@uleam.edu.ec](mailto:josue.matute@uleam.edu.ec)

#### **Abstrac**

*The present study aims to know the results of telemedicine and its doctor-patient correlation and interaction in the working population of Manta city during the period 2020. This quali-quantitative research covers an exploratory study method, a survey applied to a sample of 387 people from the working population of Manta. Significant results were obtained in relation to telemedicine, where 74% of the population stated that medical care should remain in the traditional method, with direct contact and face-to-face check-ups, while 26% indicated that this modality is not necessary to effectively carry out a medical appointment. Regarding to a good treat-service applied to patients by the doctor, 55.7% of the contestants said that they received a good service, while*



*3.9% pointed out that there was not a fair service through the telemedicine process. These results allow us to analyze in depth the advantages and disadvantages of telemedicine, and its effectiveness in the prescriptions that are issues online to patients. In conclusion we can state that this popular method called Telemedicine is an option against the pandemic we are facing in order to avoid possible contagions, nevertheless, it does not give the necessary guarantees and safety for the patient who attends to a doctor's appointment, those appointments has traditionally been rooted with auscultation, physical checkup and other processes that are involved in a medical appointment.*

**Keywords:** Telemedicine, Interaction, doctor-patient.

## **Resumen**

El presente estudio tiene como objetivo conocer los resultados de la telemedicina y su correlación e interacción médico-paciente en la Población ocupada de la ciudad de Manta durante el periodo 2020. Esta investigación cuali-cuantitativa abarca un estudio exploratorio Método de estudio, encuesta aplicada a una muestra de 387 personas de la población trabajadora de Manta. Resultados significativos Se obtuvieron datos en relación a la telemedicina, donde el 74% de la población manifestó que la atención médica debe permanecer en el método tradicional, con contacto directo y controles presenciales, mientras que el 26% indicó que esta modalidad no es necesarios para llevar a cabo de manera eficaz una cita médica. En cuanto a un buen trato-servicio aplicado a los pacientes por En cuanto al médico, el 55,7% de los concursantes afirmó haber recibido un buen servicio, mientras que el 3,9% señaló que hubo no es un servicio justo a través del proceso de telemedicina . Estos resultados nos permiten analizar en profundidad las ventajas y Desventajas de la telemedicina, y su efectividad en las recetas que se emiten en línea a los pacientes. Conclusión podemos afirmar que este método popular llamado Telemedicina es una opción frente a la pandemia que estamos viviendo. afrontando con el fin de evitar posibles contagios, sin embargo, no da las garantías y seguridad necesarias para el paciente



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**Palabras Clave:** Telemedicina, Interacción, médico-paciente

### **Introducción**

Throughout history, medical care has been provided in a personalized way between the doctor and the patient, touching and feeling the condition that afflicts the user who goes to a medical appointment, but now these attentions have been influenced by the inclusion of technology as part of the medical interactions. According to the World Health Organization (2019) "it is essential to harness the potential of digital technologies to achieve universal health coverage. After all, these technologies are not an end in themselves, but essential tools to promote health, preserve global security and serve vulnerable populations". In the face of the pandemic we are experiencing, telemedicine has re-emerged as a response to the need and the current reality we are living, whose objective is to prevent contagion and to the figures that daily increase due to the carelessness and irresponsibility of the citizens. According to Cáceres, Castro, & Gómez, (2011) "it is not known exactly when we started talking about telemedicine; however, we can say that it has been around since 1960". According to a study carried out in Peru regarding the knowledge of the population about telemedicine, 68% know about the subject, while 32% are completely unaware of what telemedicine is. (Pardo, 2013, pág. 41). Through this research work, the results of telemedicine are made known, and the advantages that it implies to ensure a good state of health of the patient, in this case of the company's collaborators, who have chosen to implement this mechanism to optimize resources and avoid the spread of infected people in their workplaces. Faced with the pandemic, the National Government through its Ministries, have implemented virtual medical services for citizen care and avoid crowding in the houses of health, so that according to data from Ministry of Telecommunications and Information Society "The health technology platforms



to address the coronavirus permitted that, from February 29 to date, about 2 million Ecuadorians receive care through various technological tools powered by the MINTEL” (2020, pág. 1)

One of the medical technological tools known and socialized by the Government in the face of the pandemic, is the hotline, for the care of patients with presumptive symptoms of Covid, and according to data from Ministry of Public Health of Ecuador, in the case of line 171, until April 29, 1,415,045 calls were received, of which, more than 572 thousand were directly related to COVID-19. In addition, 51,961 cases were referred to telemedicine and 6,615 to the Ministry of Public Health. With this article, it will also be possible to know the interaction between the doctor and the patient, something totally new in this new modality of virtual medical attention. This quali-quantitative research has the objective of finding out the results of telemedicine and its doctor-patient interaction, in the face of the Covid 19 pandemic in the labor population of the city of Manta. For this purpose, it presents an exploratory methodological structure that will allow us to go deeper into the topic raised and which has been supported by its respective literary review, the results are expressed through tables and graphs, discussions, and recommendations directed to the kind reader who will be able to enrich from this scientific article and where it raises the following question: What are the results of telemedicine and its doctor-patient interaction, in the face of the Covid 19 pandemic in the labor population of the city of Manta?.

### **Materials and methods**

This research has a mixed quali-quantitative approach, since the area of study and the need for the study were known previously. Through the qualitative approach, it allowed the collection of information on telemedicine in the face of the current pandemic in companies and interactions, as well as the establishment of the conceptual framework that will serve as a guide to achieve the objectives. To select the sample, we will take the technique of Hernandez Sampieri (2014) diverse sample or maximum variation, as it is intended to achieve and show the



diverse perspectives of six patients working in different private companies. By means of the quantitative approach the sample will be selected by means of the probabilistic method establishing the serious calculation from a confidence interval of 96%, with a systematic margin of error of 5%. Reason for which, the selected sample will be of the 387 people after applying the formula:

$$n = \frac{Z_{\alpha}^2 * p * q}{e^2}$$

The instruments that will be applied and used are the work sheets for the collection and annotation of important information, based on the bibliography that will be used as a theoretical basis for this research. In addition, the online survey will be used to develop and confirm the information collected in the interviews.

**a) Methodological design.**

The present degree research work that was developed is of an exploratory type, since this study, as it is defined by Hernández Sampieri, "is used when the objective is to examine a little-studied or novel topic", such as telemedicine, which has resurfaced due to the current phenomenon of COVID-19.

**b) Research participants.**

The participant population for this research work was taken as a reference, from the companies that belong to the Chamber of Industry of Manta. The sample of this research corresponds to 387 people.

**c) Study area.**

This research had a local impact, covering the labor population of the city of Manta in the year 2020.

**d) Techniques used.**

For this research, surveys were used as a technique to collect information and in addition, six interviews were conducted with a group of people who had had the experience of using telemedicine.

**e) Statistical analysis.**



The results of this research are represented in tables and graphs, which were generated by the statistical analysis program SPSS 25.3.

## Results and discussion

### Results

#### Data representation through text.

Of the population surveyed, 74% say that medical care should be maintained on a face-to-face basis, while 26% say that it is not necessary. The population considered for this research, stated that there was good treatment occupying a percentage of 55.7%, while 40.4% did not apply for this question, and 3.9% of the population indicated that there was no good treatment. According to the population surveyed, 76.4% stated that the doctor's response through telemedicine has credibility for them, while 23.6% stated the opposite. The participants in this research indicated with 53.8% that the treatment prescribed by the doctor was effective, and 5.8% stated that it was not.

#### Data representation by means of tables

The data obtained from the survey will be presented in the following tables

**Table 1.** Do you think the doctor's care should be face-to-face?

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Yes	304	74,0	74,0	74,0
	No	107	26,0	26,0	100,0
	Total	411	100,0	100,0	

Participants surveyed said that medical care should remain face-to-face, although telemedicine is a good option, traditionalism in face-to-face care still prevails.



**Table 2.** Do you think that there was good treatment in the consultation made online?

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Not applicable	166	40,4	40,4	40,4
	Yes	229	55,7	55,7	96,1
	No	16	3,9	3,9	100,0
	Total	411	100,0	100,0	

Respondents indicate that despite being virtually with their doctor and not interacting physically, there was good treatment in the telemedicine process.

**Table 3.** Does the treating doctor's response to the telemedicine service have credibility for you?

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Yes	314	76,4	76,4	76,4
	No	97	23,6	23,6	100,0
	Total	411	100,0	100,0	

According to participants, the doctor's response has due credibility in the process of telemedicine, he was clear and precise at the time of medical care causing the patient to feel safe throughout the process of virtual health care

**Table 4.** Was the treatment prescribed by the doctor effective for your reason for consultation?

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Not applicable	166	40,4	40,4	40,4
	Yes	221	53,8	53,8	94,2
	No	24	5,8	5,8	100,0
	Total	411	100,0	100,0	

he treatments prescribed by the doctor through telemedicine were effective for the pathology presented, as mentioned by the participants, despite the insecurity that many felt at the time of choosing this form of medical care,



and in the absence of auscultation and physical contact.

### **Discussion**

the labor population surveyed in the city of Manta, according to the objective of lack of physical contact in the process of telemedicine, the participants stated with 74%, that they consider that medical care should continue to be of the face-to-face type.

In reference to the evaluation of the impact of the telemedicine service of the author Jhon Pardo, 80% stated that it is not necessary to go to a medical appointment in person and 20% expressed that it is considered necessary.

It is important to mention that, according to the opinions of those interviewed, most of them indicate that the care received by the doctor was adequate, even though they did not meet the doctor in person.

The participants of the present survey, with a percentage of 55.7% indicate that there was good treatment in the telemedicine process and with 3.9% that there was not.

In reference to the study of coverage of health services, of the Ministry of Public Health of Peru, corresponding to the year 2009, in the results of the most important factors for a good health care, is the good treatment of the doctor in the process of telemedicine with 24%, in relation to the attention that the patient receives.

Those interviewed in this research indicated that there was a cordial, attentive and interactive attention with the doctor which provided confidence in the health care process.

In relation to the previously mentioned, as a Social Worker, it is important to frame the good treatment, through respect, courtesy and an appropriate attitude towards the patient-user, with the objective of general trust.

Regarding the credibility of the doctor's care through telemedicine, 76.4% of respondents said they do trust this new alternative of medical care, and 23.6% said





the opposite. In relation to other studies, in this case by the author Jhon Pardo (2011) on evaluating the impact of telemedicine service, 89% said that the response of the treating physician was credible and 11% indicated that it was not.

It was possible to observe through the results that the doctor's response, even if not in person, still has the credibility that characterizes this professional.

Of the population surveyed, 53.8% stated that the treatment sent by their doctor via telemedicine was effective, while 5.8% stated the opposite. Taking as a reference the evaluation of the impact of the telemedicine service, by the author Jhon Pardo, it is referred that the treatment was effective with 95% while 5% indicated that it was not.

Compared to the interview instrument, participants stated that the treatment prescribed by the doctor was successful for their disease. The medical treatments, under the modality of telemedicine do have positive results towards the patients, allowing this to be an effective alternative of attention.

## **Conclusions**

According to the specific objective, of the lack of physical contact, the investigation verifies, that, by means of the use of the telemedicine, exists good treatment on the part of the doctor, although the consultations are not made in a presential way. In addition, this research yielded data, that the treatments prescribed under this modality of telemedicine do represent an effectiveness at the time of attending the different pathologies that affect the patient. It is concluded that given the need to avoid contagion from the pandemic we are currently experiencing, telemedicine is presented as an alternative means to prevent the spread of this virus, but people still prefer and trust medical-patient care, that is, the traditional way of making a medical appointment that includes auscultation, taking vital signs, processes that generate patient safety. This medical model is ratified and with it its implications in the development and training of doctors, which proposes to restructure the curriculum in order to adapt to this new alternative of virtual medical care, ensuring quality care and warmth, even if they are not developed



in a classroom. In relation to the specific objective of the interaction that exists between the doctor and the patient, it is important to emphasize that this relationship should not be affected by the inclusion of technology in medicine. On the contrary, this way of doing medicine, through a technological device, allows the doctor to reach patients whose state of health sometimes makes their transfer impossible, and also optimizes time and resources of the user and/or family members in charge.

## Referencias

*Cáceres, E., Castro, S., & Gómez, C. (2011). Telemedicina: Historia, aplicaciones y nuevas herramientas en el aprendizaje. Revista Javeriana, 11-34.*

*Hernández Sampieri, R. (2014). Muestreo en la investigación cualitativa. En R. Hernández-Sampieri, Metodología de la Investigación (págs. 415 - 430). Mexico DF: McGRAW-HILL / INTERAMERICANA EDITORES, S.A. DE C.V.*

*Ministerio de Telecomunicaciones y de la Sociedad de la Información. (2020). Boletín oficial. Quito, Pichincha: Mintel.*

*Ministerio de Trabajo. (1979). Reglamento de los Servicios Médicos de las Empresas. Quito: Lexis.*

*Ministerio de Salud Pública del Ecuador. (30 de abril 2020). Boletín oficial. Quito: Ministerio de Salud.*