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Development of a web-based application for the improvement of population health habits against SARS-CoV-2

Desarrollo de una aplicación web para la mejora de los hábitos de salud de la población frente al SARS-CoV-2

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1. Background information

The project began in 2020, in the first moments of the COVID-19 pandemic caused by the SARS-CoV-2 virus, when basic and general information was required on aspects related to hygienic-sanitary measures that would help to control and prevent the spread of the disease in the population.

2. Purpose

- To provide an evaluation tool of the degree of knowledge of the disease in the community.

- To give recommendations about behavioural practices to prevent the infection.

3. Methods

This application was developed by the "Cátedra Avenzoar – Avenzoar Chair" research team, belonging to the University of Seville and the College of Pharmacists of Seville.

The COVID-19 app is an online tool that can be accessed at: https://covid.catedraavenzoar.es

Through 10 general questions, it is intended to provide information on health education to prevent the COVID-19 infection.

After completing the questionnaire, the system, applying an algorithm, shows a score ranging between 0 and 100 points. In those cases where it is considered necessary, a brief information message is issued so that wrong conduct can be corrected.

4. Results

The application can be displayed in 6 languages (i.e. Spanish, French, English, German, Italian and Portuguese). Its expansion has been remarkable, given that it has been used by nearly 1.5 million people and run almost 2 million times in 170 countries all around the world. These data have been obtained through Google Analytics.

The tool has been mostly used in Mexico and Spain, including all major cities and all regions.

Later, the application has been improved; in essence, the system now shows the mean of the data obtained in each and every one of the countries where it has been run, therefore it would be possible to correlate the scores with the real spread of COVID-19 in those countries.

5. Conclusions

The COVID-19 app has greatly contributed to health education by providing a better knowledge of the disease and correcting wrong hygiene habits and behaviors, hence helping to avoid infections and deaths to a greater or lesser extent.

This web-based app shows that cooperation between universities and professional Pharmacy yields excellent results regarding people's health all around the world.

Cátedra Avenzoar

REAL E ILUSTRE COLEGIO DE FARMACÉUTICOS DE SEVILLA

Development of a web-based application for the improvement of population health habits against SARS-CoV-2

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Introduction

A novel type of coronavirus (2019-nCoV) infecting humans appeared in Wuhan, China, at the end of December 2019. Since the identification of the outbreak, the infection quickly spread involving in one month more than 31.000 confirmed cases with 638 deaths [1].

Preventive measures such as social distancing, quarantine, proper hand washing, and surface decontamination are the mainstay for curbing the transmission of the virus [2, 3].

This was the starting situation of the project that began in 2020. In the first moments of the COVID-19 pandemic caused by the SARS-CoV-2 virus, basic and general information was required on aspects related to hygienic-sanitary measures. So, our project would help to control and prevent the spread of the disease in the population.

Aim

To provide an evaluation tool of the degree of knowledge of the disease in the community.

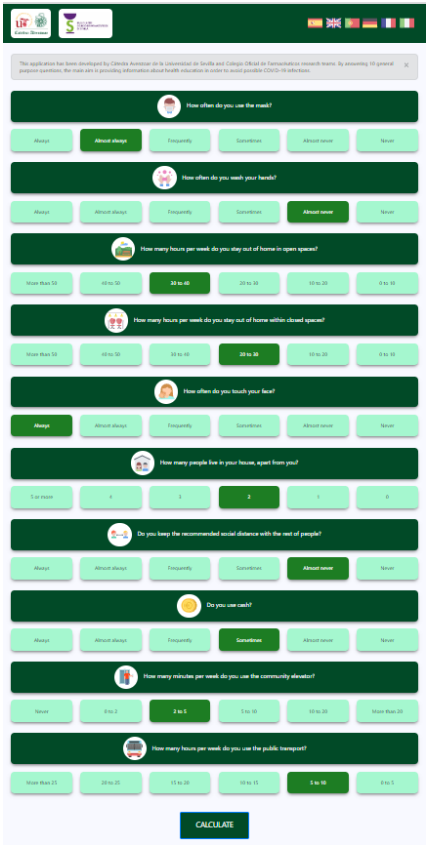
To give recommendations about behavioural practices to prevent the infection.

Method

Through 10 general questions, it is intended to provide information on health education to prevent COVID-19 infection. After completing the questionnaire, the system, applying an algorithm, shows a score ranging between 0 and 100 points. In those cases where it is considered necessary, a brief information message is issued so that wrong conduct can be corrected.

COVID-19 ONLINE APP TOOL

https://covid.catedraavenzoar.es

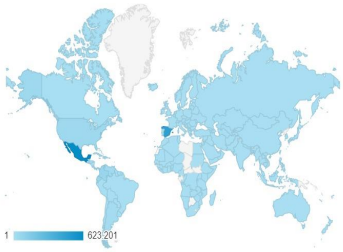


Himalaya Computing

https://himalayac.com/

Results

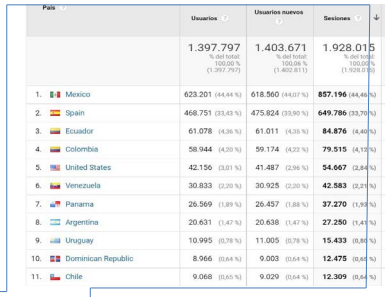
The application can be displayed in 6 languages (i.e. Spanish, French, English, German, Italian and Portuguese). After answering the questions, a score between 0 and 100 points is obtained. The system returns a representative image of the score and, if it is necessary to make a recommendation to improve any aspect, a phrase such as health advice also appears.



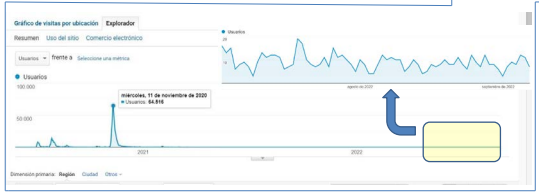
Its expansion has been remarkable, given that it has been used by nearly 1.5 million people and run almost 2 million times in 170 countries all around the world. This data have been obtained through Google Analytics.

This application has been used by citizens of almost every country in the world. For example, in all the countries of Europe and America and all the countries of Asia except North Korea. Also in almost all African countries.

The tool has been mostly used in Mexico and Spain, including all major cities and all regions. Later, the application has been improved; in essence, the system now shows the mean of the data obtained in every one of the countries where it has been run. Therefore it would be possible to correlate the scoring with the real spread of COVID-19 in those countries.



País	Usuarios	Usuarios nuevos	Sesiones
	1.397.797 % del total: 100,00 % (1.397.797)	1.403.671 % del total: 100,06 % (1.402.811)	1.928.015 % del total: 100,00 % (1.928.015)
1. Mexico	623.201 (44,44 %)	618.560 (44,07 %)	857.196 (44,46 %)
2. Spain	468.751 (33,43 %)	475.824 (33,90 %)	649.786 (33,70 %)
3. Ecuador	61.078 (4,36 %)	61.011 (4,35 %)	84.876 (4,40 %)
4. Colombia	58.944 (4,20 %)	59.174 (4,22 %)	79.515 (4,12 %)
5. United States	42.156 (3,01 %)	41.487 (2,96 %)	54.667 (2,84 %)
6. Venezuela	30.833 (2,20 %)	30.925 (2,20 %)	42.583 (2,21 %)
7. Panama	26.569 (1,89 %)	26.457 (1,88 %)	37.270 (1,93 %)
8. Argentina	20.631 (1,47 %)	20.638 (1,47 %)	27.250 (1,41 %)
9. Uruguay	10.995 (0,78 %)	11.005 (0,78 %)	15.433 (0,80 %)
10. Dominican Republic	8.966 (0,64 %)	9.003 (0,64 %)	12.475 (0,65 %)
11. Chile	9.068 (0,65 %)	9.029 (0,64 %)	12.309 (0,64 %)



The application had a maximum use at the end of 2020 registering almost 65,000 downloads in one day, specifically on November 11th. Currently, it is still active and is being used, although with much fewer downloads.

Conclusion

1. The COVID-19 app has greatly contributed to health education by providing a better knowledge of the disease and correcting wrong hygiene habits and behaviours, hence helping to avoid infections and deaths to a greater or lesser extent.

2. This web-based app shows that cooperation between University and professional Pharmacy yields excellent results regarding people's health all around the world.

References

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