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Factors associated with the perception of resentment towards the Chinese in Latin America during the first wave of the COVID-19 pandemic

Christian R. Mejia[1], Gianpool Ascarza[1], Aldo Alvarez-Risco[2*], Jean Misayauri[1], Dennis Arias-Chavez[3], Martin A. Vilela-Estrada[4], Victor Serna-Alarcón[5], Tatiana Requena[6], Milward Ubillus[7], Shyla Del-Aguila-Arcentales[8], Neal M. Davies[9] and Jaime A. Yáñez[1,10]

Abstract

Introduction Resentment towards the Chinese population was perceived during the first months of the pandemic because the pandemic/disease started in that country.

Objective To determine the factors associated with the perception of resentment towards the Chinese in Latin America during the first wave of the COVID-19 pandemic.

Methodology Analytical cross-sectional study conducted during the second semester of the pandemic in more than a dozen countries. Four questions were asked about the perception of resentment towards the Chinese (Cronbach's Alpha: 0.88); those with the highest scores on the sum of the four questions were considered to have "more resentment towards the Chinese," and descriptive and analytical statistics were obtained.

Results Of the 7721 respondents, in the multivariate analysis, it was found that there was a difference according to the country; compared to Peru, those who had more resentment towards the Chinese were those residing in Paraguay (aPR: 1.29; 95%CI: 1.17–1.42; *p*-value < 0.001) and Bolivia (aPR: 1.52; 95%CI: 1.37–1.68; *p*-value < 0.001), while Chile (aPR: 0.78; 95%CI: 0.69–0.88; *p*-value < 0.001) had less resentment: 0.69–0.88; *p*-value < 0.001), Mexico (aPR: 0.68; 95%CI: 0.57–0.80; *p*-value < 0.001), Panama (aPR: 0.71; 95%CI: 0.59–0.86; *p*-value < 0.001) and Costa Rica (aPR: 0.64; 95%CI: 0.49–0.85; *p*-value = 0.002).

Discussion There was a significant difference in resentment for each country.

Keywords Resentment, Chinese population, Discrimination, COVID-19, Latin America

*Correspondence:
Aldo Alvarez-Risco
c27408@utp.edu.pe
Full list of author information is available at the end of the article

Introduction

The pandemic that struck the entire world originated in China in the last months of 2019 [1]. After that, it began to spread throughout Asia [2], passing through Europe [3], reaching America [4], and covering all the territories known to humanity [5]. It is now well known that this pandemic caused millions of deaths [6], more people infected [7], people with sequelae [8], economic problems [9], and a series of difficulties during the more than two years of the pandemic [10]. Figure 1 shows the WHO statistics about cases of COVID-19. Also, Fig. 2 shows the WHO statistics about deaths by COVID-19.

There were even many other difficulties due to social restrictions [12], work [13], and study [14] that became virtual, among many other things that have changed since the pandemic began [15]. "This indicates that the world has experienced a significant shock or a series of events that have led to a fundamental change in our lives. It is irrefutable that there will be a definitive demarcation between the time before and after the pandemic, impacting everything we know and do."

In this context, at the beginning of the pandemic, there were many problems regarding people's perception of the population where the outbreak originated, with reports of some cases of discrimination or violence towards them [16]. That is why it is important to measure how the Chinese population was perceived at the beginning of the COVID-19 pandemic, especially in a Latin American region where Chinese immigration is very strong and has also been one of the regions hardest hit by the COVID-19 pandemic [17]. For all these reasons, this research aims to determine the factors associated with the perception of discrimination towards the Chinese population in the first wave of the COVID-19 pandemic.

Material and methods

Study design and data collection

It is a cross-sectional, prospective, non-experimental study. The survey was conducted during the months with the highest number of sick and dead people in Latin America because, during these months, each of the countries faced the first great wave of the COVID-19 pandemic. For this reason, the survey had to be conducted virtually (due to mobility restrictions and social distancing measures that could have been endangered if surveys had been conducted in person). Each survey was conducted through a Latin American collaborative network of medical students from the Latin American Federation of Medical Student Scientific Societies (FELSOCEM).
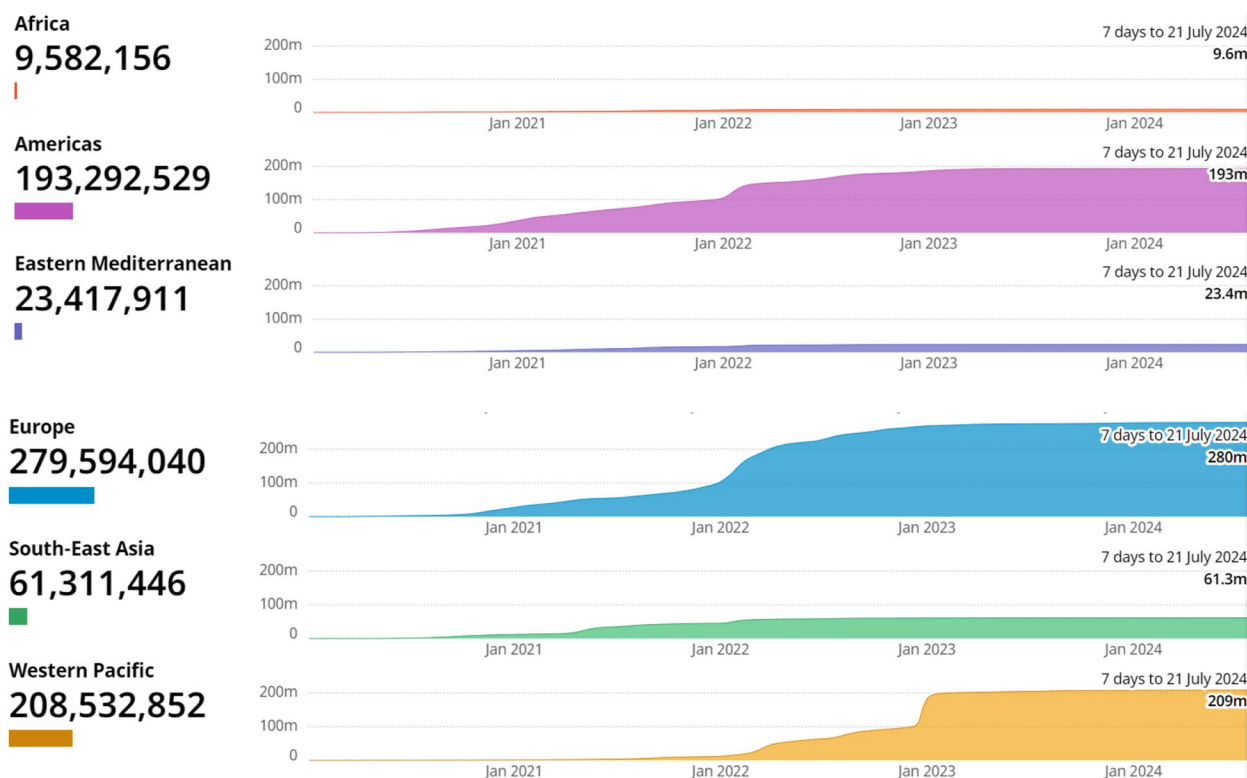

Fig. 1 Number of cases of COVID-19. Source: World Health Organization [11]
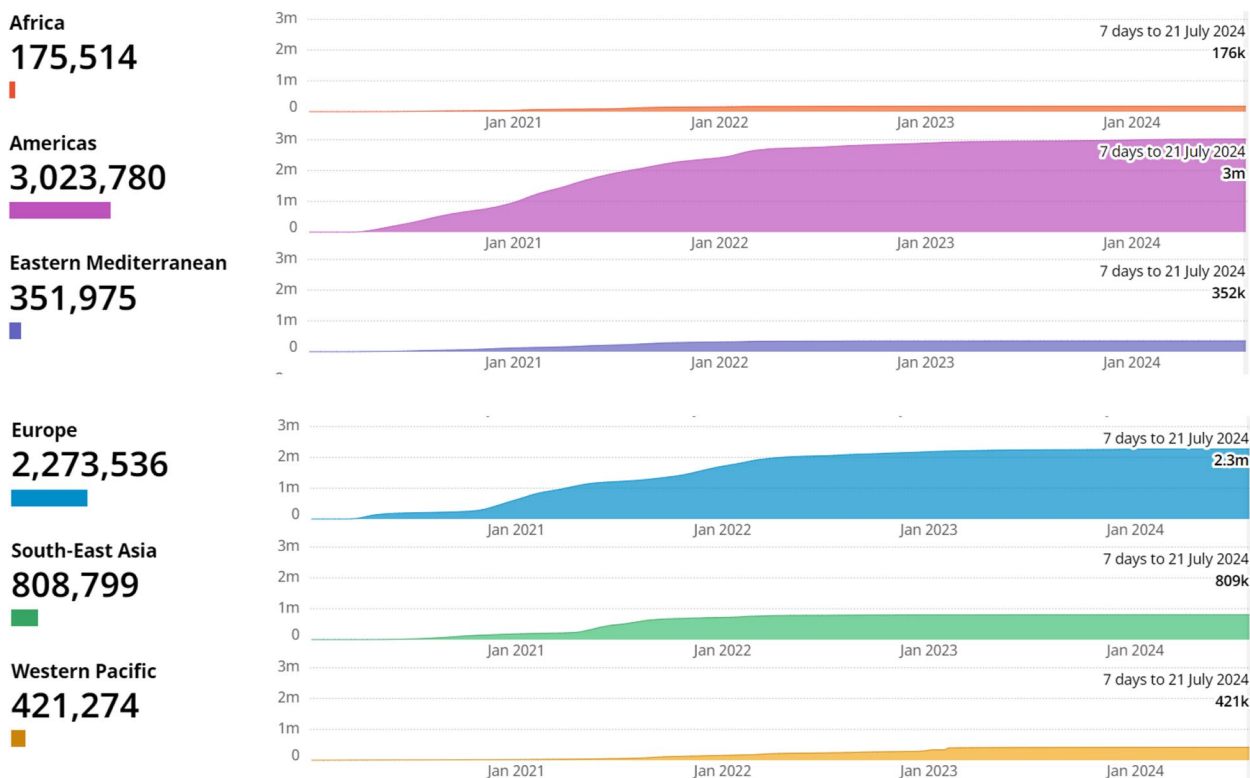
Fig. 2 Number of deaths by COVID-19. Source: World Health Organization [11]

Questionnaire

The main variable considered was the respondents' perception of the Chinese population; a questionnaire was built based on previous studies. For this purpose, four specific questions in Spanish were asked: whether they perceived that they had more resentment towards China or its inhabitants, whether their family had resentment, whether their friends had resentment, or whether society, in general, had more phobia towards this population. There was evaluated the sex (male or female), age (taken as a quantitative variable according to years completed), academic degree (up to secondary level, high school, technical studies, university, and postgraduate studies), and country of living within one of the three categories of countries already mentioned. The questionnaire was distributed via WhatsApp and social media.

Participants

The 7721 participants in this research were people of socioeconomic status A, B, C, D, and E in Latin America from Peru, Bolivia, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Panama, Paraguay, and others. The population surveyed consisted of those who resided in any of the countries during the recruitment period, were 18 or older, and agreed to participate in the research. The study had a self-administered survey by the participants. A survey was taken for each participant in a single period (from June to August 2020).

Data analysis

Once all the surveys were obtained, they were taken to an Excel database. The data was debugged and quality controlled (first manually and then statistically, done by one of the authors, who analyzed the results). After all this, the information was exported to Stata's statistical program in version 11.1. For the data analysis, we first described with percentages each of the answers obtained to the four questions measuring the perception of phobia towards Chinese people. Then, the sign, the item-test correlation, the item-rest correlation, and the individual Cronbach's alpha were obtained for each question. Subsequently, resentment of Chinese versus each of the secondary variables was crossed, and the *p*-value was obtained using the chi-square test (for sex, academic degree, and country) and the Wilcoxon test for age. Subsequently, generalized linear models with the Poisson family, log link function, and models for robust variances were used to obtain crude prevalence ratios, adjusted prevalence ratios, 95% confidence intervals, and

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p-values for both bivariate and multivariate models. It is important to mention that to change from the bivariate model to the final multivariate model, *p*-values of less than 0.05 had to be obtained. The sum of the scores that could be obtained in each question (from one to 5 points according to each answer) was added for the varied and multivariate analysis. Those in the top third of the scores (those with more resentment in general) were considered the category of interest, compared to those in the lower or middle profile. In addition, some psychometric properties of these four questions were calculated, having an overall Cronbach's Alpha of 0.88 (knowing that appropriate values range between 0.70 and 0.90).

Ethics

This study is a secondary study of a larger base with its own ethics committee. It was evaluated and approved by the private Antenor Orrego University with code Resolution Bioethics Committee N°0014–2022-UPAO. The surveys were anonymous to give confidence and that they answered truthfully.

Results

Of the 7721 respondents in Latin America, 8% strongly agreed that society had more resentment towards China or the Chinese, 4% agreed that their friends had resentment, and 3% agreed that their family or themselves had more resentment (Table 1).

All questions had a positive sign (all asked about increased resentment). The item-test correlation was between 0.78 and 0.92, the item-rest correlation between 0.59 and 0.85, and the individual Cronbach's Alpha values were between 0.81 and 0.92. The overall Cronbach's Alpha value was 0.88 (Table 2).

About associated factors, age ($p < 0.001$), academic degree ($p = 0.034$), and country of residence ($p < 0.001$) (Table 3).

In the multivariate analysis, it was found that there was a difference according to the country, compared to Peru; those who had more resentment towards the Chinese were those residing in Paraguay (aPR: 1.29; 95%CI: 1.17–1.42; *p*-value < 0.001) and Bolivia (aPR: 1.52; 95%CI: 1.37–1.68; *p*-value < 0.001), while Chile (aPR: 0.78; 95%CI: 0.69–0.88; *p*-value < 0.001), Mexico (aPR: 0.68; 95%CI: 0.57–0.80; *p*-value < 0.001), Panama (aPR: 0.71; 95%CI: 0.59–0.86; *p*-value < 0.001) and Costa Rica (aPR: 0.64; 95%CI: 0.49–0.85; *p*-value = 0.002) (Table 4).

The statistical values were calculated by generalized linear models with the Poisson family, log link function, and models for robust variances and are represented by prevalence ratios (left), 95% confidence intervals (center), and p-values (right).

Discussion

We found evident differences in resentment towards the Chinese according to the country of residence, with Paraguay, Bolivia, and Peru having the most resentment towards the Chinese. In these countries, the Chinese were considered to a greater extent as the cause of this pandemic. There was less resentment towards Chinese people in countries such as Chile, Mexico, Panama and Costa Rica. Furthermore, it was found that discrimination against Chinese people did not only occur in Latin America; some studies showed that discrimination

Table 1 Percentages of perceived resentment toward the Chinese in Latin America during the first wave of the COVID-19 pandemic

In the pandemic, I perceive	Strongly disagree	Disagree	Indifferent	Agree	Strongly Agree
that I resent China or the Chinese more	53%	19%	18%	7%	3%
that my family resents China or the Chinese more	47%	20%	19%	11%	3%
that my friends resent China or the Chinese more	44%	19%	21%	12%	4%
that society resents China or the Chinese more	27%	15%	21%	28%	8%

Table 2 Psychometric properties of questions on perceived resentment toward Chinese in Latin America during the first wave of the COVID-19 pandemic

In the pandemic, I perceive	Sign	Item-test correlation	Item-rest correlation	Alpha
that I resent China or the Chinese more	+	0.85	0.74	0.85
that my family resents China or the Chinese more	+	0.91	0.83	0.81
that my friends resent China or the Chinese more	+	0.92	0.85	0.81
that society resents China or the Chinese more	+	0.78	0.59	0.92

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Table 3 Socio-educational factors associated with perceptions of resentment in Latin America toward Chinese during the first wave of the COVID-19 pandemic

Variable	Resentment of the Chinese		p-value
	No n (%)	Yes n (%)	
Sex			
Female	3012 (66.2%)	1541 (33.8%)	0.459
Male	2070 (65.3%)	1098 (34.7%)	
Age (years)*	22 (20–30)	22 (19–27)	< 0.001
Academic degree			
High school or less	726 (65.0%)	391 (35.0%)	0.034
Baccalaureate	446 (67.1%)	219 (32.9%)	
Technical studies	454 (70.5%)	190 (29.5%)	
University degree	3096 (64.9%)	1673 (35.1%)	
Postgraduate	360 (68.4%)	166 (31.6%)	
Country			
Peru	2671 (64.7%)	1457 (35.3%)	< 0.001
Bolivia	179 (46.4%)	207 (53.6%)	
Chile	531 (71.8%)	209 (28.2%)	
Colombia	79 (70.5%)	33 (29.5%)	
Costa Rica	145 (78.0%)	41 (22.0%)	
Ecuador	194 (70.0%)	83 (30.0%)	
El Salvador	126 (68.9%)	57 (31.1%)	
Guatemala	63 (71.6%)	25 (28.4%)	
Honduras	112 (70.0%)	48 (30.0%)	
Mexico	366 (76.0%)	116 (24.0%)	
Panama	263 (75.4%)	86 (24.6%)	
Paraguay	303 (54.4%)	254 (45.6%)	
Others	50 (68.5%)	23 (31.5%)	

* Values show median and interquartile ranges. The *p*-value was calculated using the Wilcoxon test. The *p*-values of the other crosses were obtained using the chi-square test

Table 4 Bivariate and multivariate analysis of factors linked with the perception of resentment in Latin America towards the Chinese during the first wave of the COVID-19 pandemic

Variable	Bivariate analysis	Multivariate analysis
Male sex	1.02 (0.96–1.09) 0.458	Not entered in the model
Age (years)*	0.997 (0.994–0.999) 0.019	1.000 (0.997–1.003) 0.928
Academic degree		
High school or less	Comparison group	Comparison group
Baccalaureate	0.94 (0.82–1.08) 0.375	0.97 (0.85–1.12) 0.698
Technical studies	0.84 (0.73–0.97) 0.020	0.87 (0.75–1.00) 0.053
University degree	1.00 (0.92–1.10) 0.962	1.01 (0.92–1.10) 0.890
Postgraduate	0.90 (0.78–1.05) 0.173	0.92 (0.79–1.08) 0.316
Country		
Peru	Comparison group	Comparison group
Bolivia	1.52 (1.37–1.68) < 0.001	**1.52 (1.37–1.68) < 0.001**
Chile	0.80 (0.71–0.90) < 0.001	**0.78 (0.69–0.88) < 0.001**
Colombia	0.83 (0.62–1.12) 0.222	0.80 (0.60–1.08) 0.141
Costa Rica	0.62 (0.48–0.82) 0.001	**0.64 (0.49–0.85) 0.002**
Ecuador	0.85 (0.71–1.02) 0.082	0.84 (0.69–1.01) 0.067
El Salvador	0.88 (0.71–1.10) 0.264	0.89 (0.71–1.11) 0.298
Guatemala	0.80 (0.58–1.12) 0.203	0.83 (0.59–1.16) 0.284
Honduras	0.85 (0.67–1.08) 0.185	0.87 (0.68–1.11) 0.257
México	0.68 (0.58–0.80) < 0.001	**0.68 (0.57–0.80) < 0.001**
Panama	0.70 (0.58–0.84) < 0.001	**0.71 (0.59–0.86) < 0.001**
Paraguay	1.29 (1.17–1.43) < 0.001	**1.29 (1.17–1.42) < 0.001**
Others	0.89 (0.63–1.26) 0.514	0.88 (0.63–1.24) 0.475

against the Chinese was severe on a global level because the authorities themselves nicknamed the SAR-COV2 virus the "Chinese virus," or countries that closed their borders to Chinese citizens, among other discriminatory actions [18–21]. These articles show us how this issue of discrimination was taken at this early stage, which could be a lesson that, in the face of severe situations like this, society will always try to look for culprits, with the possible consequences that this may bring, which confirms the importance of giving emotional support to people in this type of situation, especially to those who may have a possible weakened mental health condition. Also, the resentment was distributed by social media, as was described by Dubey [22]. It is relevant to mention that this resentment against the people of China appears due to the pandemic in many regions, which differs from what happened in the United States, where there was already animosity against China due to previous political and social issues [23]. This animosity against Chinese

people impacted the intention to get COVID-19 vaccination [24], together with the dehumanization through online hate towards Chinese people during the COVID-19 pandemic [25]. In this way, Liu et al. [26] reported that American adolescents of Chinese origin between 12 and 17 years of age were also discriminated against in schools because they were associated with COVID-19 origin; the discrimination to Chinese international students was also reported in Portugal [27]. In Asian international graduate students in the United States, daily racial discrimination was associated with an increased risk of depression [28]. There is even a study of students [29] in which discrimination against students of Asian origin was evidenced; this racial discrimination was associated with an increased risk of depression.

It was strange that the academic degree was not a differentiating factor concerning resentment since it was expected that the higher the academic degree, the less rejection of the Chinese population. It could also be

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because some academic degree categories lacked statistical power to support the achieved associations. In a study carried out in Colombia on work stress, anxiety, and fear of COVID-19 in Colombian general practitioners, it was found that a certain degree of rejection of the Chinese population, fearing to infect themselves, their families, friends, or colleagues with the infection [30]. As many as 24% of Asian Americans were found to have experienced discrimination during the first year of the COVID-19 pandemic [31]; something similar has happened among the Asian-Canadian population who reported discrimination during COVID-19 [32]. It has become clear that more attention should be paid to the detrimental effects of racial discrimination on suicidal ideation among Chinese immigrants [33]. Also, it was reported racial discrimination against Asian-American women during the COVID-19 pandemic [34].

Neither sex nor age was associated with greater resentment toward the Chinese. In the case of sex, this could be because the number of respondents was not large enough to have adequate statistical power, as it is noted that tens of thousands of respondents would be required to determine whether sex would be associated with perceived discrimination against the Chinese population. However, a study about the mental health of healthcare workers and the general population in China mentions that nurses had a more significant impact on COVID-19, hence a resentment of the Chinese population as opposed to physicians who were also surveyed [35]. Thus, this should be further investigated. Some leaders have used this resentment to divert attention from their failures in managing the health crisis, fostering a narrative of external blame, contributing to social polarization and fragmentation of the global response to COVID-19, and weakening collective efforts to combat the pandemic.

The study had the main limitation of selection bias since it did not perform random sampling, so the data cannot be extrapolated to the totality of inhabitants in Latin America or each country where it was surveyed. However, having more than seven thousand responses at this very complicated pandemic stage can give us important associations supported by the adequate sample size of most proposed crosses. Due to the type of design, causality cannot be measured (only the association between the variables); in addition, because they are self-reported surveys, there may be an information bias, which occurs in this type of research. Also, the study design could bring with it social desirability bias; all these are derived from the kind of research that was conducted.

More research is expected to continue in this regard since the issue of discrimination could generate sequels or lags. It is important to measure the situation now that the pandemic is almost over. Future studies must evaluate Chinese people's perception of resentment [36] in post-pandemic times.

Conclusion

There were differences in the perception of resentment toward the Chinese according to the country of residence. Those with more resentment toward the Chinese resided in Peru, Paraguay and Bolivia, while those with less resentment were in Chile, Mexico, Panama, and Costa Rica. It is necessary to evaluate how this resentment is maintained or not in post-pandemic times and, if applicable, how to control this animosity.

Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
The study was approved with resolution N°0014–2022-UPAO by the ethics committee of the Antenor Orrego Private University.

Consent for publication
Since it was conducted during the pandemic, the data were collected online, which precluded informed consent; however, the purpose of the study is mentioned at the beginning of the online questionnaire. No personal details were requested from participants to ensure anonymity. The ethical principles of the Declaration of Helsinki conducted this research.

Competing interests
The authors declare no competing interests.

Author details
[1]Asociación Médica de Investigación y Servicios en Salud, Lima, Peru. [2]Universidad Tecnológica del Perú, Lima, Peru. [3]Universidad Continental, Arequipa, Peru. [4]Escuela de Posgrado, Universidad Privada Antenor Orrego, Trujillo, Peru. [5]Escuela Profesional de Medicina Humana, Universidad Privada Antenor Orrego, Piura, Peru. [6]Universidad Cesar Vallejo, Trujillo, Peru. [7]Universidad de Huánuco, Huánuco, Peru. [8]Escuela de Posgrado, Universidad San Ignacio de Loyola, Lima, Peru. [9]Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada. [10]Escuela de Posgrado, Universidad Internacional Iberoamericana, Campeche, Mexico.

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