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Original article

Concern for mpox infection in Latin America

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ABSTRACT

Background: Mpox arrived in Latin America and quickly began to replicate, so it is important to measure the concern it generates among residents. The study aims to assess whether country or other factors are associated with concern about mpox infection in Latin America.
Methods: The study uses a cross-sectional, multicenter design. Sampling was conducted using non-random snowball sampling. From August to September 2022, concern about being infected with mpox was assessed using a previously validated questionnaire (Cronbach's Alpha: 0.85); it was divided into nine countries and other social variables.
Results: From 1404 respondents, the majority of respondents were female (60.3%) and young (median age 25 years); also, a few reported that it was a significant problem (6% almost all the time and 11% often) and were concerned (6% almost all the time and 11% often) about the possibility of mpox infection. In multivariate analysis, men (aPR: 0.85; 95% CI: 0.73–0.99; p-value=0.046), younger (aPR: 0.98; 95% CI: 0.97–0.99; p-value < 0.001), single (aPR: 0.78; 95% CI: 0.62–0.99; p-value=0.042) and, compared to Peru, those living in Colombia (aPR: 0.75; 95% CI. 0.58–0.97; p-value=0.027) and Costa Rica (aPR: 0.65; 95% CI: 0.44–0.96; p-value=0.032) reported the lowest concern; also, Bolivia (aPR: 1.16; 95% CI: 0.94–1.43; p-value=0.176) and Honduras (aPR: 1.01; 95% CI: 0.80–1.27; p-value=0.943) reported that their concerns tend to be higher.
Conclusions: There were evident differences across respondents' countries; these baseline results show that the first report was made in many countries that were also significantly affected by mpox and now face a new epidemic threatening public health.
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Introduction

Mpox virus is a zoonosis with the potential for human-to-human transmission, mainly by contact with body fluids, fomites, lesion material, and after prolonged face-to-face contact [12,2]. More outbreaks were reported [18,24,41]. However, in 2022, many cases

Abbreviations: Mpox, monkeypox; APR, adjusted prevalence ratios; CPR, crude prevalence ratios; CI, Confidence interval

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began to be reported in Europe. Then they were spread globally [36,38], generating great concern for the World Health Organization (WHO), the ministries of health of each country, and other similar institutions because we were coming out of the SARS-CoV-2 pandemic, which caused millions of deaths between 2020 and 2022 [42]. Fortunately, it was quickly learned that this disease was not as contagious as SARS-CoV-2 and had a lower mortality rate [14], even though in West Africa, it had a lethality of 3–6% and in Central Africa, up to 10% [33].

Its transmission mode is more through contact with blood, body fluids, and mucocutaneous lesions [28,10]. There is already a vaccine for human smallpox [17,19,25], and others are being tested for Mpox [1]. Other mitigating factors also indicate that they are unlikely to trigger a pandemic like the one experienced with coronavirus [20,37]. Concerns across many sectors have prompted alerts and the activation of numerous measures to contain the disease [3], primarily because the devastating impact of a new pandemic is already well understood. Some reports from Europe and the United States show that mpox also generates repercussions in the mental sphere and increases anxiety and worry [34,35].

According to Pan American Health Organization (PAHO) Mpox report website [27], as of June 16, 2022, 16 cases had been reported: Argentina (3), Brazil (6), Mexico (6), and the Bolivarian Republic of Venezuela (1); however, the following month, the report indicates that cases in Latin America rose to 1481; by August 11, 2022, the number had reached 3553, led by Brazil (2458), Peru (632), Mexico (147), and Chile (126). The PAHO report of September 23, 2022, reported 13,937 cases, again led by Brazil (7115), Peru (2221), Colombia (1653), and Mexico (1367). In Latin America, until August 2024, Brazil (728). Colombia (112) and Peru (77) had almost 90% of the reported cases [27]; even Peru had the highest incidence of confirmed cases per million inhabitants, to which is added Colombia, which, together with these countries, was world leaders in terms of mpox doubling time; this is without considering the common problems that these countries faced, which are the possibility of obtaining vaccines, the stigma of those infected, the impossibility of accessing health services and being able to isolate positive cases [4]. Another investigation confirmed that Peru, Colombia, Chile, and Brazil had the highest infection rates per million inhabitants; therefore, epidemiologically, this region had important implications regarding this outbreak [16].

In August 2024, the WHO Director-General declared the mpox outbreak a public health emergency of international concern due to the increasing number of mpox cases in the Democratic Republic of the Congo (DRC) and other African countries [43]. Therefore, the population is expected to be concerned about news of a possible new global pandemic [23]. Assessing the concerns people in Latin America have about contracting mpox is necessary. Knowing these results will allow a better approach if it becomes a pandemic. It is desirable to verify the factors associated with people's concerns.

Despite epidemiological documentation of the 2022 mpox outbreak in Latin America, the precise profile of concern among the affected population remains unknown. Studying this concern is relevant because it influences key behaviors, from seeking care to adhering to preventive measures, and is mediated by stigma and misinformation. For regional public health, quantifying this concern is the first step in designing effective health policies and interventions, as well as non-stigmatizing communication, particularly in a Latin American context of structural inequalities and fragmented health systems. This study seeks to fill that gap by providing evidence for future responses that are both technically sound and psychosocially informed, given the region's fragile health systems. For this reason, the present study hypothesizes that concerns about mpox infection are associated with sex, age, level of education, marital status, and country of residence in the Latin American population.

Methods

Study design and setting

The current study was developed with a cross-sectional design, and a survey was administered from August 22 to September 4, 2022. It was carried out through a virtual survey in 9 Latin American countries: Peru (427), Bolivia (180), Paraguay (168), Honduras (168), Colombia (165), Ecuador (99), Costa Rica (85), Mexico (62), Venezuela (50). These countries were selected non-randomly based on the feasibility of contacting respondents. This survey was developed after these countries had already reported cases, and some had mortality data for mpox. The following criteria were used to select participants: individuals of legal age who reported residing in Latin America during the study period and who agreed to participate in the research. To recruit participants, a non-random snowball sampling approach was used: each author contacted their relevant contacts in the target countries, who then distributed the surveys to their online contacts via social networks, who would pass them along to others until the end of the study period. We obtained 1458 answers, and a cleaning process was carried out. One survey was excluded for containing inconsistent statements, and 53 surveys were excluded because they were from Latin American countries with fewer than 40 surveys each. The final number of participants was 1404. The statistical power for each crossover was calculated, resulting in 60% for sex, 80% for educational level, and 62% for marital status. As for the countries, Peru was taken as the base (because it was the country with the most cases of mpox at the time of the survey and the most affected), the power was 82% against Bolivia, 97% Paraguay, 93% Honduras, 90% Colombia, 48% Ecuador, 100% Costa Rica, 93% Mexico and 100% for Venezuela.

Variables

The primary variable was concern about possible mpox infection, assessed using a previously validated survey in Peru [22] comprising 6 Likert-type questions with 5 response options: strongly disagree, disagree, indifferent, agree, and strongly agree. Each participant had the opportunity to earn between 6 and 30 points. A Cronbach's Alpha of 0.85 was calculated for the six questions in the surveyed population. For the descriptive statistics of these six questions, only the response percentages for each question/alternative were shown; however, to generate the dependent variable (dichotomous) for this survey, the grade/score obtained by each participant was also considered (from the sum of the six individual questions). Moreover, the scores of those most concerned about being infected with mpox were summed, and those in the top tercile were considered most concerned, compared with those in the middle or bottom terciles (those least concerned). In addition, the main independent variables were the country of residence (one of the previously mentioned countries), sex, age, level of education, and marital status (single, unmarried).

Procedure

The ethical approval was obtained from the Universidad Peruana Unión (official number: 2022-CEUPeU-014). The survey was created on Google Forms. This survey had been previously applied in Peru and had generated a preliminary investigation. It was then reused at the Latin American level and evaluated through a pilot test with 30 participants to determine whether the questions were understood. Afterward, the respondents were surveyed, with participants informed that participation was voluntary, that the survey would be anonymous, and that it was conducted to generate a scientific report. After completing the survey, the information was exported to a Microsoft Excel spreadsheet (Windows 2019), at which point the

Table 1
Characteristics of respondents of the study.

Variable				
Age* (years completed)	Media y standard	Deviation	Median	Interquartile ranges
	29.1	10.7	25	22–33
Variable	**Frequency**		**Percentage**	
Sex				
Female	846		60.3	
Male	558		39.7	
Education				
Technical or less	192		13.7	
Undergraduate or postgraduate	1212		86.3	
Marital status				
Not single	329		23.4	
Singles	1075		76.6	
Country of residence				
Peru	427		30.4	
Bolivia	180		12.8	
Paraguay	168		12.0	
Honduras	168		12.0	
Colombia	165		12.7	
Ecuador	99		7.1	
Costa Rica	85		6.0	
Mexico	62		4.4	
Venezuela	50		3.6	

* Variable reported in its quantitative form.

selection criteria were applied and data quality control was performed. After this, the data were transferred to Stata 16.0 for analysis.

Statistical analysis

Below, we describe the response rates for each of the six questions in the questionnaire. Frequencies and percentages were used for categorical variables. Subsequently, only the median and interquartile range were used for the quantitative variable because it did not meet the normality criteria. The bivariate crossover of the perception of becoming infected versus each variable was also generated (p-values were obtained using Chi-square and the sum of ranks). Finally, bivariate and multivariate statistics were produced using generalized linear models (Poisson family, log link function, and robust variance models). With this, we obtained the raw and adjusted prevalence ratios, confidence intervals, and p-values; it is important to mention that for a variable to pass from the bivariate to the multivariate model, it should have a p-value < 0.30, and for it to be considered statistically significant, it should have a p-value < 0.05. We considered the crude prevalence ratios (cPR) and adjusted prevalence ratios (aPR). The continuous worry score was dichotomized using the upper tertile cutoff (high level of worry) versus the two lower tertiles (low/moderate level of worry). This methodological decision was made to facilitate clinical interpretation and the operational identification of subgroups with a greater psychosocial burden, allowing for clearer and more comparable association analyses. We acknowledge that this procedure simplifies the data's continuous variability.

Results

The sample's attributive characteristics are presented as frequencies and percentages. Additionally, the text presents responses to concerns about potential mpox infection and a bivariate analysis of the likelihood of infection and related concerns.

Attributive characteristics of the sample

Of the 1404 respondents in Latin America, 60.3% (846) were female, with a median age of 25 years (interquartile range: 22–33 years), a median of 29.1, and a standard deviation of 10.7. Additionally, 86.3% (1212) were undergraduate or graduate students, 76.6% (1075) were single, and 30.4% (427) of respondents were from Peru (Table 1).

According to the test questions regarding concerns about possible mpox infection, few reported that it was a major problem (6% almost always and 11% often) and worried about the possibility (6% almost always and 11% often) of being infected with mpox (Table 2). The pattern of concern is interpreted through the lens of the recent pandemic experience. The Latin American population has been exposed to a threat of extremely high mortality and serious social consequences (COVID-19), which generated a state of alert and frequent catastrophic thoughts; however, the 2022 mpox outbreak, while a public health emergency, has been characterized by a significantly lower fatality rate, making mpox recognized as a serious threat, but since it does not pose a widespread life-threatening risk, it does not trigger the same mechanisms of chronic anxiety and cognitive interference. Concern exists that is relevant for prevention, but it operates at a secondary level, necessitating differentiated communication strategies: for mpox, focused on specific preventive actions, without resorting to general alarmist messages that do not align with the public perception of its relative severity.

Table 3 shows the results of the bivariate analysis. It was found that there was an association between being in the top tercile of those most concerned about becoming infected with mpox according to age (p-value < 0.001) and country of residence (p-value=0.028).

By multivariate analysis, it was found that men (aPR: 0.85; 95% CI: 0.73–0.99; p-value=0.046), those who were younger (aPR: 0.98; 95% CI: 0.97–0.99; p-value < 0.001), those who were single (aPR: 0.78; 95% CI: 0.62–0.99; p-value=0.042) and, compared to Peru, those living in Colombia (aPR: 0.75; 95% CI. 0.58–0.97; p-value=0.027) and Costa Rica (aPR: 0.65; 95% CI: 0.44–0.96; p-value=0.032), adjusted for educational level (Table 4). The population living in Colombia (aPR: 0.75; 95% CI. 0.58–0.97; p-value=0.027) and Costa Rica (aPR: 0.65; 95% CI: 0.44–0.96; p-value=0.032) reported the lowest concern; also, Bolivia (aPR: 1.16; 95% CI: 0.94–1.43; p-value=0.176) and Honduras (aPR: 1.01; 95% CI: 0.80–1.27; p-value=0.943) reported that their concerns tend to be higher (Table 4).

Table 2
Responses to concerns about possible mpox infection.

Questions	Never or seldom	Sometimes	Often	Almost all the time
How often have you thought about your chances of being infected with mpox in the past week?	65%	28%	6%	1%
During the past week, has thinking about the possibility of being infected with mpox affected your mood?	77%	18%	4%	1%
During the past week, have you been thinking about the possibility of being infected with mpox affecting your ability to perform your "day-to-day" activities?	85%	11%	3%	1%
To what extent do you worry about the possibility of being infected with mpox?	41%	41%	14%	4%
How often do you worry about being infected with mpox?	54%	35%	9%	2%
Is worrying about being infected with mpox a major problem for you?	56%	27%	11%	6%

Table 3
Bivariate analysis of becoming infected with mpox.

Variable	Concerned about getting infected				
	No n (%)		Yes n (%)		
Age* (years completed)	Median	Interquartile ranges	Median	Interquartile ranges	*p*-value
	26	22–34	24	21–30	< 0.001
	Concerned about getting infected				
	No n (%)	**Yes n (%)**	***p*-value**		
Sex					
Female	544 (64.3)	302 (35.7)	0.124		
Male	381 (68.3)	177 (31.7)			
Education					
Technical or less	118 (61.5)	74 (38.5)	0.164		
Undergraduate or postgraduate	807 (66.6)	405 (33.4)			
Marital status					
Not single	227 (69.0)	102 (31.0)	0.173		
Singles	698 (64.9)	377 (35.1)			
Country of residence					
Peru	270 (63.2)	157 (36.8)	0.028		
Bolivia	104 (57.8)	76 (42.2)			
Paraguay	118 (70.2)	50 (29.8)			
Honduras	106 (63.1)	62 (36.9)			
Colombia	114 (69.1)	51 (30.9)			
Ecuador	66 (66.7)	33 (33.3)			
Costa Rica	65 (76.5)	20 (23.5)			
Mexico	43 (69.4)	19 (30.6)			
Venezuela	39 (78.0)	11 (22.0)			

* Variables are reported quantitatively (medians and interquartile ranges are shown). P-values were obtained using chi-square (for categorical variables) and the sum of ranks (for age).

Discussion

The current study is the first multicenter mental health study in Latin America on mpox. In 6 out of 100 participants, concern about contracting mpox was a major problem. 4 out of 100 were concerned almost all the time about contracting mpox. These results regarding concern about mpox are much lower than the more recent reports from Australia [21] with 64.44%, and China [30,40] with 65.3% and 39.57%; these differences can be explained because in Latin America mpox is a more well-known public health problem, while China and Australia have recently suffered from it, which has made it a public issue; also, China and Australia have highly developed epidemiological and genomic surveillance systems, which allows for rapid detection, unlike in Latin America, where the underreporting of cases creates a false sense of security and therefore less concern is reported among the population. Also, this phenomenon is supported by Beaglehole et al. Beaglehole et al., [9], who found a general effect of concern following a natural disaster [9]. Although a higher level of concern was expected, based on the fact that multiple articles reported after the outbreak that several Latin American countries were at the highest levels of contagion in the region and the entire world [16,4], which could be due to the differences in this outbreak compared to the recent COVID-19 pandemic, with less stigmatization reported towards a specific ethnic or professional group. The new outbreak appears to have been influenced in part by preparations for the recent pandemic [31].

Bolivia, Honduras, and Peru were the countries with the most significant concern; when multivariate statistics were performed and adjusting for the other variables, it was found that Colombia and Costa Rica had less concern, which shows an evident difference according to the country of residence; in the case of Colombia, this lower concern may currently be increased because it is the second

Table 4
Statistics of concern for mpox infection.

Variable	cRP (CI 95%) *p*-value	aRP (CI 95%) *p*-value
Sex		
Female	Comparison category	Comparison category
Male	0.89 (0.76–1.03) 0.127	**0.85 (0.73–0.99) 0.046**
Age* (years completed)	0.98 (0.97–0.99) < 0.001	**0.98 (0.97–0.99) < 0.001**
Education		
Technical or less	Comparison category	Comparison category
Undergraduate or postgraduate	0.87 (0.71–1.05) 0.153	0.83 (0.68–1.01) 0.66
Marital status		
Not single	Comparison category	Comparison category
Singles	1.13 (0.94–1.36) 0.181	**0.78 (0.62–0.99) 0.042**
Country of residence		
Peru	Comparison category	Comparison category
Bolivia	1.14 (0.93–1.42) 0.200	1.16 (0.94–1.43) 0.176
Paraguay	0.81 (0.62–1.05) 0.116	0.79 (0.61–1.04) 0.091
Honduras	1.00 (0.70–1.27) 0.975	1.01 (0.80–1.27) 0.943
Colombia	0.84 (0.65–1.09) 0.191	**0.75 (0.58–0.97) 0.027**
Ecuador	0.91 (0.67–1.23) 0.529	0.86 (0.64–1.17) 0.349
Costa Rica	0.64 (0.43–0.96) 0.030	**0.65 (0.44–0.96) 0.032**
Mexico	0.83 (0.56–1.24) 0.366	0.79 (0.52–1.17) 0.239
Venezuela	0.60 (0.35–1.02) 0.061	0.62 (0.36–1.06) 0.081

* Variable reported in quantitative form. cPR (crude prevalence ratios), aPR (adjusted prevalence ratios), 95% CI (95% confidence intervals), and p-values were estimated using generalized linear models (Poisson family, log link function, and adjustment for robust variances).

country in Latin America with the most cases of mpox. Although some countries had small sample sizes, this could be taken as an initial indication that these changes vary across contexts. Furthermore, Peru was highly expected since it was always among the countries with the most mpox infections, not only in Latin America but also worldwide [16,4]; but while Honduras and Bolivia are not among the most affected countries, their particular situation may be generating greater concern, which could be explained by contextual and psychosocial factors, such as the extensive media coverage of the global outbreak and the perception of vulnerability due to fragile health systems. This reflects that the concern is not driven solely by local epidemiological data, but by the interaction between global information and the structural vulnerability recognized by citizens. During the pandemic, instruments were validated [15] to assess concerns in the population, which is interesting because it helps inform strategies to better support people and help them feel safe. Thus, neither their mental nor their physical health is exposed.

Men, compared with women, were less concerned about becoming infected with mpox, that is despite some outbreak reports showing that men are the most infected [26]; but it is presumed that, despite the infections, what was found is more related to how the news is handled according to the patient's sex. This was supported by a qualitative survey of 555 men reporting that they cope with stressors through avoidance, numbing, or distracting distress, such as adapting and changing the way they do activities [44]; however, a meta-analysis of 31 observational studies and 5153 patients found no significant difference in the prevalence of depression, anxiety, and sleep disorders [11]. Thus, more studies are needed to evaluate other psychological disorders and their degree of severity in the context of mpox. One limitation is that 60% of the participants were women. A future evaluation with a smaller difference in the number of female and male participants could help determine the true outcome in the population. It is important to note that the reported associations are observational and do not mean causality. The interpretations established, such as differences in access to information or the potential influence of pandemic fatigue, must be considered plausible hypotheses based on the reported patterns, not causal explanations. Confirmation of the underlying mechanisms requires specific longitudinal research.

Younger people also had less concern about contracting the infection. In a study conducted in India on concerns and fears of infection, respondents aged 20–40 were the most concerned. The results are consistent with our findings, likely due to the greater use of information and communication technologies among young people [13]. Our study found a significant association between the marital status variable and anxiety about being infected with mpox. Such an association is evidenced in the research conducted by Ahmed et al. [5], where they showed that in the Kurdistan region in Iraq, married people had higher levels of anxiety about being infected with mpox than single people. In addition to this, the authors point out that, according to the p-value, there is a significant difference between marital status and anxiety due to the idea of being infected with mpox; however, other studies show the opposite, such as that of Alnazly et al. [8], where they show us that single people are less afraid of infection than married people. It is interesting to highlight this concern regarding marital status since it has been determined that mpox is recognized as a sexually transmitted disease [7], and its higher prevalence is linked to gay, bisexual, and other men who have sex with men populations. It is required that with each new outbreak or disease with the potential to become a pandemic, we look at what has just happened to determine which are the most vulnerable groups, the best way to respond to the disease, and even how it is communicated to the population since it has been seen that this is essential so that panic is not generated [39]. The low level of concern and minimal interference linked to mpox can be attributed to a confluence of social and structural factors. Pandemic fatigue after the COVID-19 pandemic led to prioritizing threats, relegating mpox, which is understood as less lethal. A slow, out-of-time response by the government can create a low risk perception among the population, which can be risky because some mpox complications are serious [6].

Theoretical implications

The low level of concern challenges predictions from theories such as the Health Belief Model [32] and Protection Motivation Theory [29], which suggest that if a person feels more risk, it means that the person would have more concern. When outcomes do not follow the expected trajectory, it is necessary to consider the impact of the COVID-19 pandemic, which could have reduced the sensitivity of mpox risk. The variation in concern across countries and regions (high in Bolivia, Honduras, and Peru; low in Colombia and Costa Rica) reinforces the need to localize risk perception. It goes beyond statistical reports; it means that the Ministry of Health, in coordination with the governments, must improve communication through social media and official communication. A citizen´s concern in a country or region can be linked to trust in national and local institutions. The reason for the discrepancy in the major infection rate of men and the low level of concern in this group is explained by gender norms and patterns that impact the risk perception and anxiety.

Practical implications

The results highlight the need to create country-specific public health programs, and even region-specific ones within countries, which can differ across regions. The development of content to communicate the characteristics of this public health issue must be more reasoned, as it needs to be prepared according to the distinct realities of each region within each country. Bolivia, Honduras and Perú mean the highest levels of concern, and for that, they need psychological support focused on reducing anxiety using help phone centers and psychoeducation and not only increasing vigilance. On the other hand, countries such as Colombia and Costa Rica need communication content that strikes a balance between vigilance and panic among the population. The outcome about marital status showed that married people have more anxiety, providing compelling evidence to focus efforts on the mental health of couples and families. The results show that younger people have less concern, despite the high frequency of technology use, which should motivate the redesign of mental health platforms to make content more citizen-focused.

Managerial implications

The primary managerial task is allocating resources based on evidence of concern. Data identifying Bolivia, Honduras, and Peru as areas of great concern should be used to direct priority investment in training mental health personnel and deploying locally validated screening tools. These actions optimize limited public health budgets, ensuring that psychosocial support is concentrated where the population perceives it as most needed. Crisis management must proactively prepare for the potential shift in public perception. The WHO's declaration in August 2024 is presented as a triggering event that, according to the study, could increase anxiety due to the "recent memory of the COVID-19 pandemic." Communication and health managers must have response plans in place to stabilize the media narrative and improve the responsiveness of helplines and care centers before the declaration.

Limitations

The limitation was that some cross-sectional analyses did not achieve a statistical power of 80% or greater (for sex, marital status, and Paraguay and Ecuador). A key limitation is the selection bias inherent in snowball sampling, which is primarily conducted in digital environments. This likely overestimated the participation of younger and more educated individuals, who have easier access to these networks. Consequently, the findings may not fully represent the full diversity of the affected population in the region, whose perceptions may differ. Additionally, the cross-tabulations for age and marital status were significant, indicating a strong association despite reduced power. One methodological limitation to consider is the dichotomization of the worry score, which, while facilitating interpretation, may have lost information by reducing continuous variation. This could have attenuated the magnitude of some associations and limited the detection of nonlinear relationships. Therefore, the results derived from this categorization should be interpreted as a conservative representation of the links between the variables studied and the worry construct. Future analyses could explore models that preserve the variable's continuous nature. Another limitation of the study is that the population is relatively young, with a significant percentage being 24 or younger. However, it is worth noting that Latin America currently has a substantial representation of young and very young populations. Therefore, these results reflect their perception of an important age group in the region. It should be noted that some country-level analyses have low statistical power due to limited sample sizes across several included nationalities. Consequently, the comparisons and estimated differences between countries in this study should be considered indicative and interpreted with due caution.

Conclusion

The present multicenter study on mental health in the context of mpox in Latin America provides a comprehensive view of population concerns regarding infection. It was found that only a small fraction of participants expressed significant concern about mpox; however, important associations were identified between concern about infection and variables such as sex, age, marital status, and country of residence. Multivariate analysis showed that men, younger people, and single people were less concerned about infection. The populations in Colombia and Costa Rica reported the lowest concern; in contrast, those in Bolivia and Honduras reported that their concerns tend to be higher. These results are valuable because they provide a deeper understanding of how demographic and geographic factors influence perceptions of mpox infection risk. This information is crucial for developing more effective outbreak management and communication strategies tailored to the specific needs of different population groups. Thus, the lower concern observed in men and young people suggests the need for more targeted awareness campaigns for these groups, using communication channels that are more accessible and relevant to them. Furthermore, the identification of significant differences in concern about mpox between countries underlines the importance of considering the local context when designing public health interventions.

Launch targeted digital campaigns aimed at young people, emphasizing detailed information on transmission and prevention on the platforms they frequent; likewise, urgently train health workers in early detection and non-stigmatizing counseling, particularly in primary care services. It is necessary to implement risk perception monitoring in high-incidence countries, using rapid surveys that allow for real-time adjustments to communication strategies. It is crucial to emphasize that the variations in levels of concern observed between countries are presented as exploratory findings or as generating hypotheses. These comparisons should not be taken as definitive conclusions about national differences, given the limited statistical power of these analyses, but rather as a basis for future research with larger, more balanced samples across countries.

Author contributions

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Ethical approval

Implied consent was obtained by completing the questionnaire for the current study, as data were collected online. The study received authorization from the Institutional Research Ethics Committee of Universidad Peruana Unión (official number: 2022-CEUPeU-014).

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Data availability

The datasets of the current research are available from the corresponding author on reasonable request.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Generative AI and AI-assisted technologies in the writing process

Grammarly was used solely for language refinement, grammar correction, and improvement of manuscript clarity. No AI tools were used for data generation, scientific analysis, interpretation of results, or figure preparation.

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