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*The promotion of physical activity through infographics issued by
governments in Latin America*

*[La promoción de la activación física mediante infografías emitidas por gobiernos
latinoamericanos]*

*[A promoção da ativação física por meio de infográficos emitidos por governos na América
Latina]*

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ABSTRACT

Introduction: The lack of physical activity is a condition that affects 40% of adults worldwide. In some Latin American countries, this rate is close to 50 %.



Objective: To characterize the promotion of physical activity through infographics issued by Latin American governments with the highest rates of inactivity, in the years 2020 and 2024.

Methods: Descriptive, retrospective, non-experimental, and cross-sectional design. An instrument consisting of 72 items, previously validated by 10 judges, was used to analyze 61 infographics issued by eight Latin American countries with the lowest levels of Physical Activity (PA).

Results: The infographics have a balanced structure between images and text. They utilize visual resources that are accessible to the audience. Although the messages expressed are aimed at motivating the population and raising awareness of the benefits of PA, there is a tendency toward persecutory health in the content of the message.

Conclusions: Analyzing the communication materials issued by governments allows for the construction of more effective messages in promoting the health of various sectors within the community.

Keywords: physical activity, infographic, health communication, motivation, Latin American governments.

RESUMEN

Introducción: la falta de activación física, es un estado que prevalece en 40 % de los adultos del mundo. En el caso de algunos países de América Latina, este índice es cercano al 50 %.

Objetivo: caracterizar la promoción de la actividad física mediante infográficos que emiten los gobiernos latinoamericanos con mayor índice de inactividad, 2020 y 2024.

materiales y métodos: diseño descriptivo, retrospectivo, no experimental y transversal. Se utilizó un instrumento de 72 ítems, previamente validado por diez jueces; que permitió observar a 61 infografías emitidas por ocho países latinoamericanos con menor índice de Activación Física.



Resultados: las infografías tienen una estructura balanceada entre imagen y texto. Utilizan recursos visuales asequibles para quien los consulta. Los mensajes que se plasman, aunque se dirigen a motivar a la población y dar a conocer los beneficios de la AF, se deja ver una tendencia por la salud persecutoria en el contenido del mensaje.

Conclusiones: analizar las piezas comunicativas que los gobiernos emiten, permite construir mensajes más efectivos en la promoción de la salud de los distintos sectores que integran a la comunidad.

Palabras clave: activación física, infografía, comunicación para la salud, motivación, gobiernos latinoamericanos.

RESUMO

Introdução: a falta de ativação física é um estado que prevalece em 40% dos adultos no mundo. No caso de alguns países latino-americanos, esta taxa está próxima de 50%.

Objetivo: caracterizar a promoção da atividade física por meio de infográficos emitidos pelos governos latino-americanos com maior taxa de inatividade, 2020 e 2024.

Métodos: Desenho descritivo, retrospectivo, não experimental e transversal. Foi utilizado um instrumento de 72 itens, previamente validado por 10 juízes; o que nos permitiu observar 61 infográficos emitidos por 8 países da América Latina com menor índice de Ativação Física.

Resultados: Os infográficos possuem uma estrutura equilibrada entre imagem e texto. Utilizam recursos visuais acessíveis a quem os consulta. Nas mensagens expressas, embora visem motivar a população e dar a conhecer os benefícios da AF, verifica-se no conteúdo da mensagem uma tendência para a saúde persecutória.

Conclusões: A análise das peças de comunicação que os governos emitem permite-nos construir mensagens mais eficazes na promoção da saúde nos diferentes sectores que compõem a comunidade.



Palavras-chave: ativação física, infográficos, comunicação em saúde, motivação, governos latino-americanos.

INTRODUCTION

According to the World Health Organization (WHO) (2021), low or no Physical Activity (PA) is the fourth risk factor for mortality worldwide, accounting for 6 % of deaths at this level; this percentage exceeds other conditions such as hypertension, high blood glucose, or high tobacco consumption. It is also considered the primary cause of 1 in 4 cases of breast and colon cancers, 27 % of diabetes cases, and 3 out of 10 ischemic heart diseases. Additionally, it has a direct relationship with obesity levels in both children and adults. Its incidence is such that, by the second decade of the 21st century, the WHO had already allocated economic resources and proposed 20 regulatory measures aimed at reducing physical inactivity by 30 % by 2030 (WHO, 2019).

Physical activity is understood as bodily movement resulting from the functionality of skeletal muscles, which involves energy expenditure by the individual. Although this definition encompasses a wide variety of movements, PA is characterized by being structured and repetitive; its purpose is not competition (Perea-Caballero *et al.*, 2020) but rather recreation (Luarte Rocha *et al.*, 2016; Monroy, Antón *et al.*, 2018). Thus, PA has been conceived as a practice that, when performed systematically and regularly, has significant benefits for physical (Gómez Figueroa, 2009) and mental health (Calpa-Pastas *et al.*, 2019; Peñarrubia-Lozano *et al.*, 2021) across various age groups and individuals with different abilities (Muñoz Hinrichsen and Martínez Aros, 2022) or conditions (Valdez Méndez, 2015).

Given that sedentarism is a public health problem (Ladino Marín and Prada Penagos, 2024), PA has gained relevance for national governments, which must ensure that their governed population has the necessary conditions for a better quality of life. At the same time, these entities must take concrete actions in response to the consequences of a lack



of PA, such as increasing free health services or medical campaigns addressing diseases stemming from low levels of PA (García-Tascón *et al.*, 2021).

Therefore, it is essential for governments to disseminate appropriate information so that the community understands PA and its impact on daily life and health status (Nogueira *et al.*, 2021). To achieve this, health promotion campaigns should utilize communication supports that can be accessed in public places and digital spaces. Furthermore, these resources must integrate specific data to educate those who consult them, ensuring that the messages used are comprehensible to any citizen, regardless of their literacy level (Hernández-Fernández and Morera-Vidal, 2022). One resource that meets these requirements is the infographic; being a visual tool that provides information in less than 5 seconds, it becomes very appealing to viewers. Thus, in recent years, many national governments have incorporated infographics as part of their efforts to reach their populations with information. An example of this was their extensive use during the recent pandemic (Castillo-Esparcia *et al.*, 2020).

Considering the aforementioned background, the general objective of this research was to characterize the promotion of physical activity through infographics issued by Latin American governments with the highest rates of inactivity from 2020 to 2024. The specific objectives included: a) Describing the messages issued for promoting physical activity by Latin American governments; b) Delimiting the elements included in the structure of the observed infographics that promote physical activity.

MATERIALS AND METHODS

The research was conducted using a descriptive, non-experimental, and retrospective design, considering that communicative pieces published between 2020 and 2023 were reviewed; this led to a mere characterization of these visual resources in digital format included in the sampling. It was a cross-sectional cohort study, as data were collected at



a single point in time during the month of May 2024. The variables of interest were the structure of the infographic and the message about physical activity.

A non-probabilistic snowball sampling method was implemented, as infographics were located on the official electronic sites such as websites or social media of the mentioned governments. Thus, 59 infographics published by Latin American governments with the lowest levels of physical activity, according to WHO Medical Edition, 2022, were retrieved. The concentration of observed pieces is shown in Table 1.

Table 1. - Number of infographics retrieved

Country	Frequency
Argentina	1
Brazil	2
Colombia	16
Costa Rica	2
Guatemala	17
Mexico	13
Paraguay	1
Dominican Republic	7

The content analysis was used as a quantitative technique, and the data collection was based on a previously validated observation guide by a panel of 10 experts through the Lawshe Validity Index; the items that were retained obtained a Content Validity Ratio (CVR) of .62. After this validation process, the instrument consisted of 72 items. The observation involved identifying the presence of the items corresponding to the variables and sub-variables of interest relevant to this research. The data collected during this process underwent descriptive statistical treatment using the SPSS program, in order to present the results through graphs and tables.



RESULTS AND DISCUSSION

Six out of ten observed units were located on the official Facebook pages of the countries included in the study. Mexico, Guatemala, and the Dominican Republic are the governments that use these spaces to disseminate this type of resource; and in the case of Mexico and Guatemala, they utilize other digital social networks such as Instagram and X (formerly Twitter). Meanwhile, Brazil, Colombia, and Costa Rica only publish their materials through their governmental websites. This information dissemination strategy implemented by these governments is limited, given that currently, many citizens obtain information through virtual collaborative spaces (Benaissa Pedriza, 2018; Espinoza-Portilla and Mazuelos-Cardoza, 2020). Furthermore, 95% of the infographics are published by one of the ministries or secretariats that make up the governmental structures of each country; the rest credit the national government as the author Mexico, with two units, and Argentina, with one unit.

Figure 1 clearly shows that Guatemala is the country that publishes the most pieces; it is also noteworthy that in 2023 and 2021, there was more dissemination of this type of visual content. It is important to emphasize that there is no periodicity in the publication of these communicative pieces, which is a way to strengthen the attention and follow-up of the issues of the citizens who consume this type of information resource, (Universitat Oberta de Catalunya, n.d.) (Figure 1).

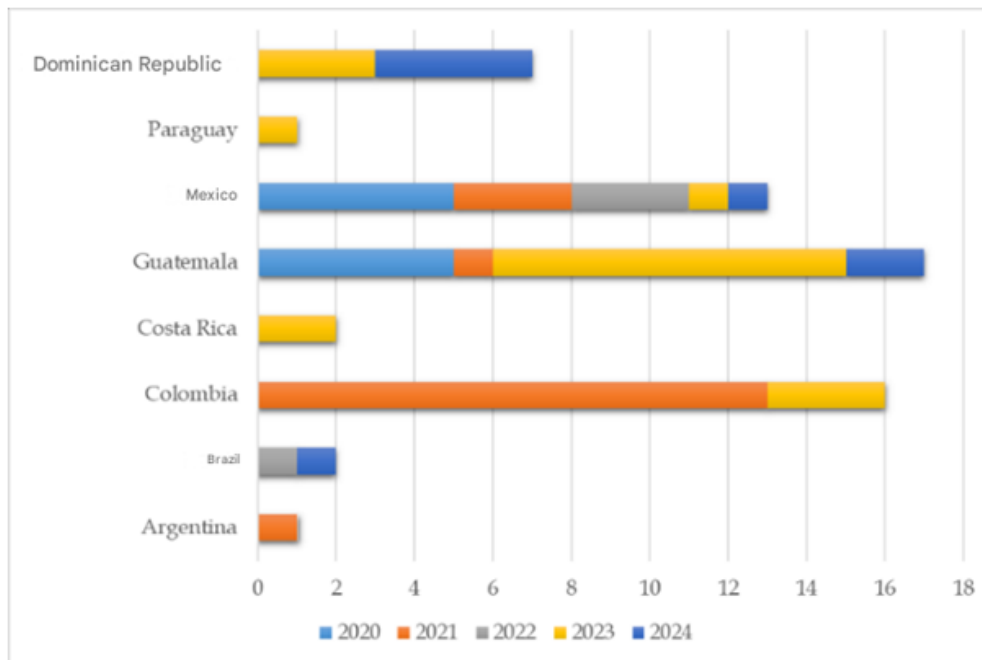


Fig. 1. - Infographic Publication Concentration by Year and Country

As part of the study's objectives, the structure of the infographics included was observed. Figure 2 summarizes the characteristics identified in the infographics. All pieces include a title; 92% are organized by specific information units to address a topic, and 85% include illustrations. The use of hyperlinks or subtitles is less common around 28%. Additionally, to contextualize the infographic, 48% of the visual pieces include topic-related tags. The most used tags also known as hashtags are #ActivacionFisica, #culturaGUATE, #CadaMinutoCuenta, #CadaPasoCuenta, and #JuevesdeNutricion. Mexico and Guatemala are the countries that use the most tags. In this regard, it is necessary for information managers to integrate more digital elements that allow those who consult these types of visual resources to delve deeper into the topics presented, increasing the possibility of raising awareness about PA and avoiding infodemics (WHO, 2020) (Figure 2).

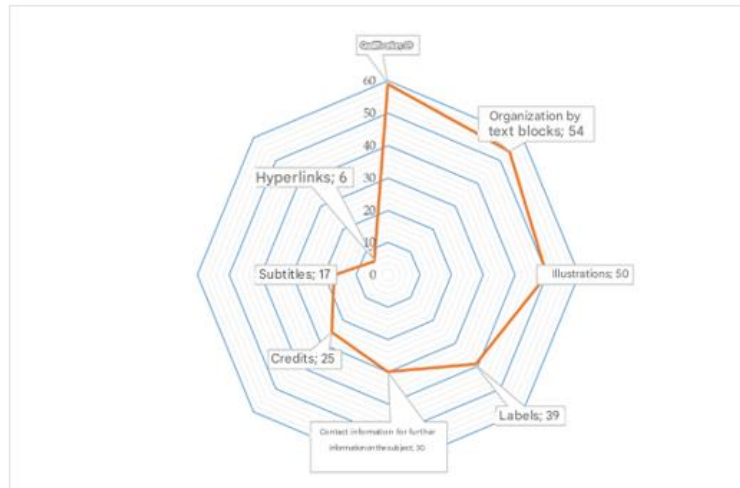


Fig. 2. - Elements Identified in the Infographic Structure

Regarding the type of message conveyed by the infographics, 73 % were informative; the rest were persuasive. Additionally, regarding message content, there is a tendency to promote PA as a means of health preservation and disease prevention 8 out of 10 observed pieces. This informative approach seems appropriate, considering that, the analyzed countries have high levels of sedentary behavior, and lack of PA can constitute a public health problem (Ladino Marín and Prada Penagos, 2024). Therefore, the messages about PA that are communicated should really make the individual aware of the seriousness that a passive lifestyle has for his or her life in the short, medium and long term. In contrast, countries like Paraguay and Argentina use infographics to showcase physical spaces for regular PA one infographic per country showing the bike lanes, cycling routes, and park modifications and creations that governments have implemented for public use (de la Peña-de León *et al.*, 2017; Castillo-Retamal *et al.*, 2020). Moreno-Manzo and Navarro-Chávez (2020) point out that these types of messages are relevant for positioning the governmental administration that publishes them, as they highlight work done for their electorate. However, they will only benefit PA levels if citizens understand that the message aims to inform them about spaces they can use for physical activity; otherwise, it might be seen merely as state-sponsored positioning.



Concerning the content of the infographics regarding recommendations for PA, 7 out of 10 pieces mention general recommendations on the frequency, intensity, and duration of exercise, according to international organizations. In contrast, only one piece emphasizes the need to consult a professional to diagnose the health status of someone interested in starting vigorous exercise these results are shown in Table 2. This is noteworthy, as the WHO (2019, 2021) itself not only mentions PA as an option for physical activity but considers it a more integral process where nutrition and medical assistance are crucial for optimizing the benefits of PA. Therefore, a series of infographics should be developed that inform about all the important aspects to consider for achieving correct PA.

Table 2. - Physical Activity (PA) Execution

Item	F r.	%
Provides general recommendations regarding frequency, intensity and duration of exercise according to a credible organization.	3 1	0.5 3
AF is needed as an element that helps maintain the balance and overall health of the individual.	2 9	0.4 9
Emphasizes the importance of establishing a specific routine for physical activity.	2 1	0.3 6
Suggests gradually increasing AF, considering WHO parameters.	1 6	0.2 7
He mentions more complex bodily expressions, such as dance, as a form of physical activation.	1 1	0.1 9
It highlights how important it is to have an objective or goal in AF.	9	0.1 5
Remind recipients that any exercise start requires a prior warm-up.	6	0.1 0
It talks about the importance of an accurate diagnosis to identify the current situation or risk factors of the individual, prior to AF.	3	0.0 5
Mentions that a doctor should be consulted before starting vigorous PA.	1	0.0 2

Another important element to consider regarding PA practice is the extrinsic motivation individuals receive to perform this action. Table 3. shows that 88 % of the analyzed communication pieces send messages targeted at specific age groups to engage in PA, as proposed by Perea-Caballero *et al.* (2020). Furthermore, there is a tendency to encourage those who consult the infographics to approach PA around 82 %. However,



the wording of the content in these visual supports does not consider inclusive language at all, despite some pieces targeting the general audience (Cala and Navarro, 2011); this currently represents an area for improvement. Similarly, governmental entities need to send messages that counteract the emotional barriers some members of society have regarding PA (Tavarnier Morga *et al.*, 2021; World Health Organization, 2022; Quintana Escurra, 2023) (Table 3).

Table 3. - *Motivation towards Physical Activity (PA)*

Item	Fr eq.	%
The proposed AF is consistent with the age group to which the message is directed.	52	0.88
The message conveyed is intended to motivate the receiver to perform PA.	48	0.81
Persuade users who do not engage in regular physical activity.	41	0.69
It is aimed at a particular age group.	27	0.46
It is about empowering the individual to perform PA.	27	0.46
It focuses on contrasting sedentary lifestyle with physical activity.	18	0.31
It motivates users who do AF (light or moderate) to increase the intensity and time of their activity and achieve greater health benefits, according to the WHO.	15	0.25
It encourages people who are physically active to continue doing PA until they reach their WHO recommended level.	7	0.12
Proposes to carry out physical activation in work spaces.	6	0.10
It focuses on the empowerment of the community as users of spaces and policies.	6	0.10
Try to contrast obstacles to AF that arise to prevent this activity from being carried out.	3	0.05
It tries to contrast the emotional barriers and beliefs that people have regarding AF.	1	0.02
He addresses the population, using inclusive language.	0	0.00

Table 4 shows that 78% of the infographics included in this study highlight how PA contributes to healthy lifestyles with 53 % of the pieces specifically addressing this (Calpa-Pastas *et al.*, 2019; Peñarrubia-Lozano *et al.*, 2021). However, a notable deficiency is the lack of promotion regarding the impact of PA on people with disabilities, as



suggested by Muñoz Hinrichsen and Martínez Aros (2022), or on individuals seeking to reduce harmful substance use, as noted by Valdez Méndez (2015) (Table 4).

Table 4. - *Benefits and Impact of Physical Activity (PA)*

Item	Frec.	%
Promotes the idea that AF improves individual quality of life.	46	0.78
Emphasizes the benefits of AF for health prevention.	31	0.53
AF is needed as an element that helps maintain the balance and overall health of the individual.	29	0.49
Highlights the benefits that AF has on mental health.	13	0.22
Expresses the relationship it has with life expectancy.	13	0.22
The benefits of AF from an early age are mentioned.	10	0.17
It points out the relationship between physical activity and the diseases that its absence causes.	9	0.15
The long-term effects that may arise are mentioned.	8	0.14
People's participation is promoted in the implementation of AF with a view to benefiting their community.	7	0.12
Promotes the idea that AF improves the quality of life of the community.	7	0.12
Mentions the benefits in quality of life, specifically the improvement in hygiene and dietary habits.	6	0.10
It indicates the impact on the decrease in the levels of consumption of toxic substances or alcohol.	1	0.02
Mention the benefits of AF for people with disabilities.	1	0.02

Regarding the government and the community as promoters of PA, in the design of the messages, the persecutory health tone predominates in two out of ten pieces, in which the individual is pointed out as the main responsible for his or her inactivity (Meinardi, 2021). This is combined with the use of imperative phrases to incentivize citizens to engage in PA. Conversely, only one infographic shows the sender (government) addressing the social and economic conditions that limit opportunities for PA see Table 5 for details. Therefore, the content of communication pieces should be oriented towards a more responsible approach with citizens (De La Guardia Gutiérrez and Ruvalcaba Ledezma, 2020), as the state has an obligation to provide the necessary safety conditions for individual well-being (Rodríguez-Blanco, 2021). This includes health and recreation infrastructure, as well as engaging other entities in promoting PA, such as businesses (Gómez-Chacón *et al.*, 2018) and educational institutions.



Table 5. - Government and Community in Physical Activity (PA)

Item	Freq.	%
It proposes the receiver as the main person responsible for his health condition relative to physical inactivation (persecutory health).	20	0.34
Use imperative phrases to encourage actions (move, take care of yourself, exercise, among others).	17	0.29
It focuses on highlighting the recreational nature of AF.	11	0.19
Public spaces that can be used for AF are mentioned.	10	0.17
It refers to informing about the spaces needed by practitioners and amateurs in the community to practice AF.	9	0.15
The message focuses on promoting fear or aversion to a sedentary lifestyle.	7	0.12
It addresses the citizens' need for information on the actions of their government related to AF	6	0.10
Describe what public management is doing in terms of AF	5	0.08
AF is mentioned as part of the universal right to health.	3	0.05
It tries to contrast the social and economic conditions that exist in the AF.	1	0.02

CONCLUSIONS

This paper analyzed the messages issued for the promotion of PA by national entities. Infographics were found to provide recommendations on how to be active, reduce disease risk, and improve quality of life. Although an informative tone is used to motivate citizens towards activity, a tendency towards a persecutory health approach was identified, based on the type of sentences and verbs used in the infographic text. This overlooks health as a universal right and the state's responsibility to provide the resources needed to meet community health needs. Thus, the objective of this work has been addressed.

Regarding objective "b", infographics were found to be an accessible source of information on PA, although not widely used by the governments studied. Titles, images, and organized data blocks enhance comprehension. However, some elements



for improved infographic dissemination were identified, specifically the inclusion of hyperlinks to information from reputable organizations addressing PA, enabling safer and more informed citizen engagement.

This research was limited to observing digital resources published by Latin American governments and still available online. Future research should conduct a longitudinal cohort study of infographics and other communicative products digital and print used in health campaigns related to PA, for a more accurate assessment of measures implemented to counteract sedentary lifestyles.

Several areas for improvement were identified. First, infographics on PA should be disseminated in the various native languages of Latin American countries to broaden the impact of health promotion. Second, PA promotion should target minority groups, considering their specific characteristics and needs, developing functional PA adoption strategies for these sectors.

Finally, further research is needed to observe how states promote PA, aiming to provide increasingly relevant health information affecting large populations. It is also important to consider that such visual resources infographics not only inform but also help prevent harmful practices that, if unaddressed, could lead to serious health problems for the community at large.

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