

Healthy living behaviors in youth: a comparative study in Brazil, Colombia and Mexico

Comportamentos saudáveis de vida em jovens: um estudo comparado no Brasil, na Colômbia e no México

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Abstract *The physical, mental and social well being, refers to a new concept of health, far from a conceptualisations of absence of disease. Additional challenges emerge as individuals face deep social inequities depending on their ethnicity, rural residence or low educational level, as these translate to poor access to health services and more difficulties to adhere to healthy living behaviors. The objective of this study was to assess the perception that adolescents and young adults in Latinamerica have of the importance of healthy living behaviors (HLB) in the physical, emotional and lifestyle spheres. The approach is considered quantitative and descriptive with a cross sectional design. The sampling consisted of 192 young adults in Brazil, Colombia and Mexico. The results show that participants prioritize higher emotional wellbeing. They state that the health crisis changed the perception, as now the value more the emotional side of health, and understand the status of a combination of the different aspects of wellness. The Latinamerican context poses a challenge in designing strategies with a holistic health perspective, with complexities in the economic and sociocultural domains.*

Key words *Healthy living behavior, Healthy lifestyle, Health promotion, Obesity, Holistic health, Health perception*

Resumo *O completo bem-estar físico, mental e social se refere a um novo conceito de saúde, muito além da ausência de doenças. Se os indivíduos são confrontados com profundas desigualdades sociais, em que fatores como etnia, moradia em zona rural ou baixo nível educacional se traduzem em um acesso menos adequado aos serviços de saúde, podendo ser um desafio adicional para aderir a comportamentos de vida saudável. O objetivo deste estudo foi avaliar a percepção de adolescentes e adultos jovens na América Latina sobre a importância dos comportamentos de vida saudável (CVS) nas esferas física, emocional e de estilo de vida. A abordagem é considerada quantitativa e descritiva, com desenho transversal. A estratégia de amostragem foi por conveniência. A amostra foi composta por 192 adultos jovens em três países da América Latina: Brasil, Colômbia e México. Os resultados mostram que os participantes priorizam um maior bem-estar emocional. Eles afirmam que a crise de saúde mudou a percepção, pois agora valorizam mais a saúde emocional e compreendem a importância da combinação dos diferentes aspectos do bem-estar. O contexto latino-americano desafia o desenho de estratégias com uma perspectiva holística da saúde, com complexidades nos domínios econômico e sociocultural.*

Palavras-chave *Comportamento saudável, Estilo de vida saudável, Promoção da saúde, Obesidade, Saúde holística, Percepção da saúde*

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Introduction

The current health crisis has heightened the importance and value of healthy living in preventing and treating health conditions¹. There have been many approaches to promote healthy lifestyles²; some have focused on cardiorespiratory and muscular fitness to prevent and treat cardiovascular disease³, others conceptualize it as the integration of habits that prolong the healthspan of individuals⁴. Activities such as physical activity, consuming nutritious and healthy food, not smoking or consuming recreational drugs, and maintaining an appropriate body weight are essential to this health. The current health crisis has also pushed mental health as one of the priorities since lockdown considerably increased psychological disorders in teenagers and young adults⁵. The change in habits amid the pandemic had direct repercussions on these key pillars of wellbeing.

Habits are critical for healthy living behaviors; these consist of automated responses that develop through repetition and are often performed without little or no forethought. Figure 1 depicts the four stages necessary for habit formation, starting from a decision that is sustained through time until it becomes an automatic behavior⁶. The strongness and automaticity of an established habit may pose difficulty in changing it because short-term behavioral gains may be lost in the long-term context⁷. This has to be taken into consideration when designing strategies for habit promotion or formation.

Habits are forged closely in the familiar context, but socio-cultural norms and perceptions may shape them throughout time. While habits in early childhood are influenced directly by parents, self-care gradually shifts towards self-direc-

tion⁸. Elements related to the individual, such as self-consciousness in teenagers and young adults, and interpersonal elements such as belonging to a group or peer pressure may impact the perception and formation of new habits. Habits related to health are no exception⁹.

Raising challenges in Latin America

Although all individuals are entitled to equal rights and opportunities, including the right to a healthy life, the integration of habits to prolong the health span seems to challenge underserved communities¹⁰. Latin America, a culturally diverse region with a vast territorial extension, has many challenges in promoting healthy habits. The social context is characterized by deep inequities, where factors such as ethnicity, rural residence, or low educational level translate to inadequate access to health services¹¹. The eradication of poverty and the reduction of inequality in all its dimensions was a pressing issue in the political agenda; however, the pandemic aggravated these conditions. Factors such as informal employment, limited access to education, crime, urbanization patterns, lack of economic growth, and weak health or social protection system increase the vulnerability¹².

Socioeconomic status may be one of the main contributing factors to this phenomenon. Insecurity in neighborhoods discourages children and parents from staying outdoors in parks or streets¹³. Social deprivation from the community and inequality in access to health are very real problems. The monthly mean income per family in Latin America varies between 773 USD in Panama, which is one of the highest and can be as low as 175 USD, reported in Cuba¹⁴. Other countries such as Brazil average 335 USD, Colombia 244

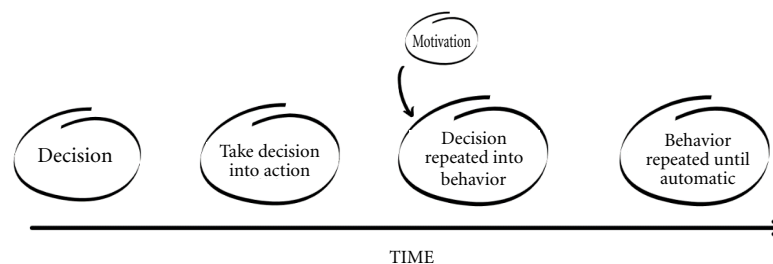


Figure 1. Stages of habit formation.

Source: Authors.

USD, and Mexico 518 USD¹⁴. This forces families where two parents are present; both have to work to provide, which sometimes increases the frequency of the consumption of prepackaged or fast food. The consumption of healthy foods may also be limited due to their higher cost.

According to the World Health Organization, the region's pressing regional challenges are obesity, depression, and anxiety¹⁵. A prominent factor of the complexities in the area is the alarming rate of undernutrition and the highest prevalence of childhood obesity¹⁶. The Latin American Federation of Obesity Societies (FLASO, for its initials in Spanish), issued a consensus statement compiling data of a prevalence above 30% in obesity, which is increasing at a faster rate than in the rest of the world¹⁷. According to Ng et al., the highest prevalence of obesity is found in El Salvador and Paraguay for women with a prevalence of 33% and 30% respectively¹⁸; and Uruguay and Chile for men with a prevalence of 23.3% and 22%, respectively. Alarming statistics from Argentina show that in children, this problem impacts 9.9% of the population. Mexico holds the second place in the world with 40% of obesity in adults¹⁸. Diets that are high in fat and sugar but low in micronutrient, and an increase in sedentary lifestyles are in part responsible for this phenomenon. Another level in which being overweight has its toll is on emotional and psychological dimensions¹⁹.

In the emotional domain, depression is a major challenge. It refers to persistent feelings of sadness and loss of interest, affecting a person's behavior and often impacting daily activities and causing physical or other emotional problems²⁰. Recent data shows an increasing mental health problem with a prevalence in teenagers and young adults around 10% in Latin America²¹. Studies have found that its prevalence is as high as 4.7% in Argentina and Bolivia, 5.8% in Brazil, 4.7% in Colombia, Chile and Uruguay are in 5%, Peru 4.8%, and Mexico and Venezuela follow closely with 4.2%²².

Another increasing mental health issue is anxiety, which refers to an unpleasant emotional state characterized by feelings of tension, apprehension, and worries and by activation or arousal of the autonomic nervous system²³. Studies have found that its prevalence is around, 6.3% in Argentina, 9.3% in Brazil, 6.5% in Chile, 5.8% in Colombia, 3.6% in Mexico, 7.6% in Paraguay, 5.7% in Peru 5.7%, and 4.4% in Venezuela. The pandemic has also taken a toll on mental health and wellbeing in the young population. A rapid survey conveyed by the United Nations Inter-

national Children's Emergency Fund (UNICEF) showed that in Latin America, 27% of the population between 13 and 19 have experienced symptoms of anxiety and 15% of depression²⁴.

A change in emotional wellbeing may also promote other unhealthy activities such as alcohol, tobacco, and other recreational drug abuse which is a rising concern among the young population²⁵. According to the World Health Organization, worldwide, more than a quarter of all people aged 15-19 years which represent 155 million adolescents are current alcohol drinkers. Alcohol and drug use in children and adolescents is associated with neurocognitive alterations that can lead to behavioral, emotional, social, and academic problems in later life. Regarding tobacco use, most studies trace its start to adolescence. Globally, at least 1 in 10 adolescents uses tobacco, although there are areas where this figure may be higher²⁶. There have been many legislations that criminalize its production and distribution; however, drugs such as cannabis are still heavily used in Latin America with prevalence rates between 4% and 13%²⁷. It is also widely used in young people, estimates from 2018 are that at least 4.7% of people aged 15-16 years used it at least once during the year²⁶. Overall, the socioeconomic inequities, as well as some aspects of the cultural and educational settings make the Latin America region a very particular ecological niche with specific and rising challenges that will need to be addressed from different approaches.

Strategies to promote healthy living in child and adolescents

According to the Healthy Living for Pandemic Event Protection (HL-PIVOT) network, adhering to healthy living behaviors (HLB) has a direct impact on a person's quality of life⁸. This provides insight not only in physical, dietary aspects, sleep habits, etc. These key elements, as well as the emotional sphere, have yielded to a holistic view of health (Figure 2).

Physical sphere

Many interventions focus on this sphere. By understanding the obesity-promoting factors stakeholders can develop targeted interventions to mitigate the problem. The major contributors to the increased rate of obesity and overweight may be understood in two levels, food, and physical activity. The food environment changes regarding global, national, neighborhood, or in the school environment. Regarding physical activity, factors that impact negatively are the

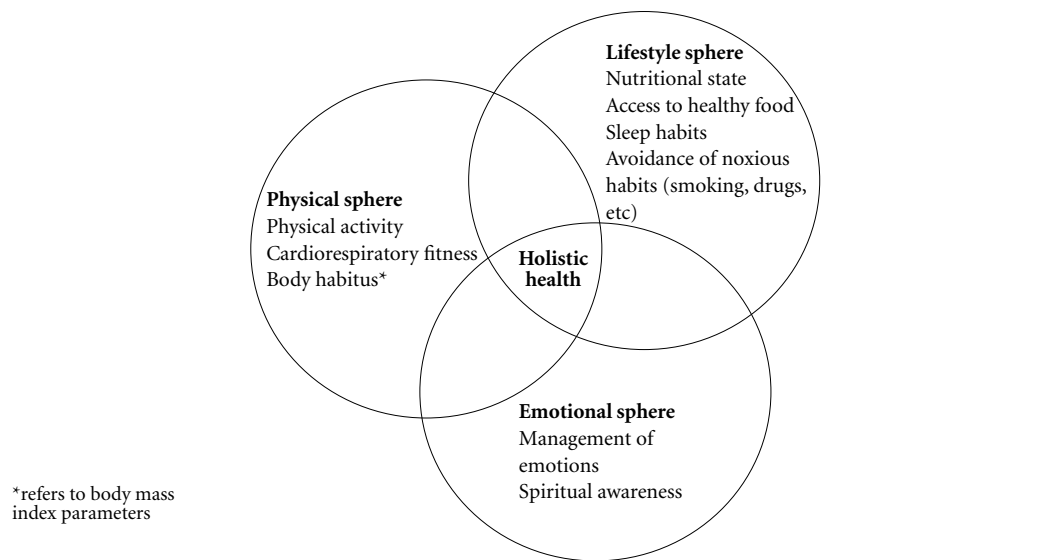


Figure 2. Three spheres of healthy living behaviors (HLB).

Source: Authors.

reduction of walking as a transportation mode, the increase in access to motorized vehicles, and the increase in sedentary leisure activities²⁸. Habits that predispose to overweight and obesity rely on the establishment throughout development and growth which makes it difficult to overcome them with cross-sectional interventions.

Several programs have successfully implemented programs on prevention and reducing obesity prevalence in the region. The Plan of Action for the Prevention of Child and Adolescent Obesity (PAHO) was signed in Latin America to promote an active lifestyle, encouraging the use of bike paths or physical activity programs at school^{29,30}. This initiative pushed the implementation of fiscal policies on foods with a high energy content and low in nutrients. In Mexico, it resulted in taxation of sweetened soft drinks and high-calorie food³¹. In 2016, Chile promoted labeling the front of the packages with a black-and-white warning sign if it exceeds defined limits of calories, saturated fat, sugar, and sodium³². This measure was adopted by Mexico in 2020 and is also being promoted by the Colombian government to promote healthier food choices³³.

In 2013, the Mexican health ministry designed and implemented the campaign called: *Chécate, Mídete, Muévete* to inform people about food and nutrition through public awareness. Positive and motivating messages and informa-

tion were transmitted on television or radio to raise awareness about the importance of prevention through commercial spots. These messages also motivated people to attend preventive medical check-ups, as well as for receiving guidance in health promotion³⁴. However, when the effectiveness of this campaign was analyzed the program was far from effectively decreasing the prevalence of overweight, obesity, and diabetes mellitus. Some of the limitations included poor outreach to rural communities and the transmission of an average of 13,000 advertisements of junk food products and 42 different brands transmitted in parallel³⁵. These factors might explain why the program did not reach the originally planned impact and its cancellation afterward.

In 2011, Brazil launched the Academia da Saúde Program³⁶ as a healthcare promotion strategy that works with the implementation of public spaces known as hubs where physical activity practices are offered to the population. These centers are part of the Primary Health Care network and have specialized exercise equipment and qualified professionals to advise the users. As a point of attention in the territory, they complement comprehensive care and strengthen health promotion actions in conjunction with other health programs and actions such as the Family Health Strategy, the Extended Family Health Centers, and Health Surveillance.

Lifestyle sphere

Lifestyle habit changes and promotion may be the most difficult areas to address in Latin America. On one hand, the family context does not foster healthy habits, which could be related to the economic struggles of the population, on the other hand, insecurity and crime throughout the regions add another level of complexity. Interventions focused on these spheres may probably be the most effective in developing healthy lifestyle habits in the long term, hence promoting a healthier status of our population.

Mexico has second place in child obesity, many interventions have been made to prevent childhood and adolescent obesity. Unfortunately, there have been no results that indicate the effectiveness of these strategies. One focuses on adding an 8% tax on food with an energy content exceeding 275 Kcal per 100 grams and 0.05 USD per liter on sugar-sweetened beverages³⁷. Another strategy focuses on food labeling. These labels indicate the food's caloric input, the excess of saturated fats, sugars, and sodium to raise awareness and provide guidance to the consumer. The Mexican strategy involved banning radio or television advertisements during hours in which children may be a significant part of the audience.

Although different approaches were implemented, habits have not significantly modified the prevalence of overweight and obesity. Mexico still has one of the highest rates of child obesity worldwide³⁷. In order to mitigate it, a three-month-long educational intervention was designed called *Healthy Recess* aimed to promote healthy eating and physical activity in children. This strategy also allowed the identification of the perceptions of the target population and the implementation of health-promoting interventions. Among the activities was a traffic light system where students had to associate cards with images of food or physical activities. Green, yellow and red colors allowed students to classify food or activities according to their healthiness. Regardless, results show students choose their food based on flavor regardless of their caloric intake or nutritional value. This may be due to the lack of parental guidance and school environments not offering enough healthy alternatives, or the lack of healthy alternative in lunch boxes³⁸.

San Pedro de Pinta is a program created in 2011 in San Pedro municipality in Mexico with the purpose of recovering the public space to promote sustainable mobility, social and family interaction, and overall a healthier lifestyle³⁹. This program takes place every Sunday starting

at 7:00 a.m. until 1:00 p.m; families can walk with their pets and ride bikes in this avenue, where vehicular circulation remains closed and becomes 5 km-long-park. The initiative has been well received with approximately 12,000 people attending every Sunday. It teaches new generations a different city model; but more importantly, it has also created spaces that enable the establishment of healthy habits that lead to a healthier lifestyle in the long term.

Unorthodox interventions have explored technology as the basis for reaching young adults⁴⁰. This aspect could be beneficial because of the increasing number of internet users in the young sector of Latin America. The Exergames in Brazil implemented a strategy with two groups, one of them promoted physical activity-promoting interventions plus virtual games that promote healthy habits, and the second group did solely physical interventions. No difference between the two groups⁴¹.

Emotional sphere

Perceptions of health habits tend to be associated with the nutritional state or BMI parameters, but the multidimensional concept of health is often overlooked. Particularly in adolescents, the focus has been mainly on physical appearance and average weight, but participation in school activities to exercise a sense of belonging with friends and the school community is important as well⁴². The current health crisis has brought significant changes in this sphere as well. Social distancing and the lack of socialization in school contributed to this. A study by Genta et al. evaluated the sleep habits and quality of Brazilian adolescents and concluded the pandemic negatively affected their sleep quality⁴³. A web-based survey conducted during the first peak of the pandemic in Brazil showed the negative impact on mental health, with a high prevalence of psychiatric symptoms in young adults in Brazil. This study also showed that the young population was more susceptible to depression, anxiety, and stress during the health crisis⁴⁴. With almost all our efforts focused on mitigating contagions and infection, emotional wellness has been overlooked. But a direct impact in the emotional sphere of wellness has been demonstrated. Among the consequences, an increase in depression (50%), anxiety (44.6%), and insomnia (34%) in heavily affected countries like China and Italy. Frontline health workers are also at risk of developing post-traumatic stress disorder (PTSD) as a consequence of the coronavirus out-

break⁴⁵. Schools have dealt with closure mainly focusing their efforts in continuing the curricular delivery, but children and young adults have also been victims of the psychological consequences of the pandemic. Some institutions have implemented programs to mitigate the consequences of social distancing in their students.

Therefore, the objective of this study was to assess the perception that adolescents and young adults in Latinamerica have of the importance of healthy living behaviors (HLB) in the physical, emotional, and lifestyle spheres.

Methodology

The approach considered for this study was quantitative and descriptive with a cross-sectional design. This process allows us to identify relevant variables and data to understand a complex phenomenon. The sampling strategy was a convenience sample that consisted of 192 young adults in three countries of Latin America: Brasil, Colombia, and Mexico.

As an instrument, an eight closed-ended question survey was designed following the HL-PIVOT framework of healthy living. An additional open-ended question was included to represent the psychological wellbeing of the students, which has become a priority amid the pandemic. The first question considered that participants ordered, according to their perception of importance, the eight elements of the spheres in the Healthy Living Behaviors model: physical activity, nutritional state, access to healthy food, body habitus, sleep habits, avoidance of noxious habits, emotional wellness, and spiritual wellness. The rest of the questions focus on participants' self-assessment in each of these behaviors. These items consider a 1-100 scale for participants to intuitively assess their current state. To analyze the trends in the items and the different spheres, descriptive statistics were considered.

The survey also included an open-ended question that asked participants to describe how their perception of wellness evolved as a result of the pandemic. This question added some depth to understanding the perception of the students and context. As part of the analysis, we considered a content analysis, identifying themes, categories and codes to describe similarities and differences in the participants' perceptions.

As part of the ethical considerations of the study, it is important to highlight that the participants were informed about the purpose and

granted written informed consent. The study followed all the applicable regulations and recommendations of the Comité de ética en investigación de la Escuela de Medicina del Instituto Tecnológico y de Estudios Superiores de Monterrey ethical committee that grants approval of the research protocols. The study was conducted following the Declaration of Helsinki.

Results

Participants' ages ranged from 15 to 25 years old; however, 67% of them were in the 18-21 years range. Regarding healthy living behaviors, in general, participants prioritized the eight elements of the spheres in the Healthy Living Behaviors model. The elements that participants prioritized higher were: emotional wellness (5.9), nutritional state (5.6), and physical activity (5.2). These results are presented in Table 1.

If the data is contrasted by country, 60% of Brazilian participants identified physical activity as the first choice, which was prioritized as the first choice only by 8.86% of Colombians, and 8.25% of Mexican participants. The results of Colombian and Mexican participants prioritized emotional wellness as the first choice, with 36.25% and 40.21% respectively.

According to the results, participants self-assess higher on their nutritional status with a weighted mean of 77.94. The lowest self-assessment was found on avoidance of noxious habits with a mean of 29.09. These results are presented in Table 2.

The results of the open-ended question included in the survey were interesting as well. Participants reflected on how their perception or priorities in healthy behaviors had changed due to the pandemic. Five categories emerged from thematic analysis: 1) awareness of needing emotional wellness, 2) transitioning to a self-care approach, 3) increase in the importance of physical activity, 4) gaining a holistic health and wellness perspective, and 5) perception that their wellbeing has been worsening during the pandemic.

The highest number of participants, 28.9% stated that their awareness of needing emotional wellness increased amid the pandemic. Some extracts of their reflections are the following:

My priorities changed and I focused more on my mental health (participant 4, Mexico).

I value my psychological wellness because it is important for remaining focused in school (participant 12, Colombia).

Table 1. Participants priorities on healthy living behaviors.

	Mean			Weighted mean
	Brazil	Colombia	Mexico	
Emotional wellness	4.00	5.63	6.24	5.85
Nutritional state	5.18	5.30	5.92	5.61
Physical activity	6.60	4.89	5.38	5.24
Access to healthy food	4.10	4.97	5.05	4.96
Sleep habits	5.18	4.51	4.24	4.41
Body habitus	3.55	3.69	3.58	3.62
Spiritual wellness	3.60	3.46	2.89	3.17
Avoidance of noxious habits	4.00	3.45	2.71	3.10

Source: Authors.

Table 2. Contrasting self-assessment on healthy living behaviors.

Healthy living behaviors	Brazil	Colombia	Mexico	Weighted mean
Nutritional state	45	80	80	77.94
Sleep habits	40	59	66	61.51
Avoidance of noxious habits	2	17	42	29.09
Emotional wellness	57	70	66	67.16
Spiritual wellness	59	71	63	66.14

Source: Authors.

Emotional wellness has an impact on all aspects of your life. When you are not mentally healthy, you can't perform in your life as usual (participant 48, Mexico).

According to participants, communities are now prioritizing self-care higher.

I make myself a priority in my life, I consider this important to achieve my goals in life (participant 65, Colombia).

I prioritize the things that make me feel happy and make me feel good (participant 1, Brasil).

Close to 14.91% of them stated that it was the current health crisis which brought the opportunity to focus on the importance of this element:

I now have me-time and value my self-care (participant 22, Colombia).

I have spent a lot of time with myself and have learned the importance of taking care of myself (participant 75, Mexico).

The importance of physical activity increased as participants spent more time in their homes. Close to 14.42%, the majority emerging from participants in Brazil, commented on this theme:

I have made my physical wellness a priority in my life (participant 3, Brasil).

Being sedentary kills... you have to exercise yourself (participant 1, Brasil).

I have made physical activity and healthy eating a priority in my daily routine (participant 27, Mexico).

Several participants took into consideration more than one of the spheres of healthy behaviors, addressing the importance of gaining holistic health wellness (11.89%). For example, some overspilled the physical and mental spheres:

The pandemic made me prioritize controlling my emotions, stress, anxiety and opened my eyes to the importance of having daily physical activity, socializing, and having recreational activities to be emotionally well (participant 20, Mexico).

I knew before the pandemic, but now I have seen a stronger correlation between every aspect of my health. You can't have good mental health without physical activity, a healthy diet, or relaxing activities (you can't have one without the others). I also learned to prioritize activities that make me feel good and step aside from the things that emotionally drain me (participant 10, Brasil).

Others described the importance of balancing them and revisiting to analyze the needs in that specific moment of time:

I give more importance to socializing, my mental health, and psychological wellness (participant 18, Mexico).

It came to my attention that wellness components are not static, they change every day and the needs of each one also change on a daily basis. One component does not compensate for another (participant 6, Brasil).

On the other hand, several students reported a perception of their wellbeing had being worsening during the pandemic (6.79%)

My personal wellness has worsened amidst the pandemic (participant 21, Colombia).

It is tough to be ok [in a wellness state] since the pandemic started (participant 4, Brasil).

Some describe the causes that have impacted, for example the motivation:

I don't feel motivated to exercise (participant 2, Brasil).

The pandemic has affected me physically and psychologically (participant 1, Colombia).

Discussion

In this study, mental health was the highest-ranked item in participants' priorities, followed by an excellent nutritional state and physical activity. Concerns and assumptions of the psychological consequences of this pandemic have been highlighted in editorials in different countries. Now an emergence of the first reports of the toll that quarantines and social distancing measures had are being published. These range from anxiety, stress, an increase in substance abuse and can be as severe as depression, some others report an increase in suicidal ideation and suicide⁴⁶. Undoubtedly, the current health crisis has affected the change of this perception, which was also supported by the high frequency of answers related to emotional health in the themes of the comments received.

Physical activity has been one of the most traditional concepts associated with healthy living, but it is interesting to observe that emotional wellbeing was higher in the scale of importance. The results on the thematic analysis reflect the awareness of the importance of this sphere. However, the challenges in the region such as the increase of crime and the unsafety in open public spaces, might have impacted the opportunity of participants to practice exercise¹³. There is also the fact that quarantine led to social distancing and the consequent decrease of spaces available for exercising.

Participants self-assessed low in some of the HLB, for example in the consumption of drugs and the integration of noxious substances as part

of their habits, the study depicted a consequence of the pandemic. Substance abuse poses another interesting and raising challenge among youngsters worldwide. The complex economical and social context of Latin America and the increasing rate of substance abuse bring into focus the need for assessing and educating the population.

With increasing rates of alcohol consumption²⁷, and an increase in the stressors amid lockdown and the pandemic it remains to be seen if this has an impact on this parameter when pandemic is over. Probably interventions in the near future will be needed regarding these behaviors.

A surprisingly high assessment of the participants in their nutritional state might be the result of the taxation policies that the different countries have implemented. This is quite important as energy-dense and nutrient-poor diets are factors that studies have linked with overweight and obesity. Still, the promotion of healthy food has still to overcome the economic and financial challenges of the Latin American context.

The social interaction restrictions and quarantine measures, resulted in indoor physical activities during the pandemic in young people, even of those who were active before isolation, diminished considerably. The results of this study are similar to the results of Brito *et al.*⁴⁷, as the authors demonstrated that the majority of adolescents were unable to maintain daily physical activities, despite claiming to be motivated. Some of the root causes might be lack of physical space or a safe setting to exercise.

There was a clear shift in the participant's perception regarding the importance of some aspects of wellbeing amid the pandemic. The awareness of participants of the need to prioritize aspects of health such as emotional wellness. These shifts may be due to quarantine but also influenced by all the interventions that promote a healthy lifestyle that have been implemented throughout the last years.

Physical aspects, which have been reported as priority, had the second importance for our participants. As an encouraging first step, life-long-learning habits depend on self-directed commitment⁴². The socioeconomic background in Latin America may contribute to a sedentary lifestyle and the growing rates of obesity. Still, the habit developmental process needs to be promoted, and the economic or social limits are yet to be addressed.

Interestingly, a more holistic conception of health arose among our participants. Many of them stressed the importance of health being

composed of more than one aspect of HLB, such as emotional wellness, socialization, physical activity, and nutrition. New strategies should focus on providing wellness programs with these intersections. School space might be an ideal environment to foster healthy habits that can permeate the family and the community, especially in younger individuals⁶. Strategies become more effective when they include awareness that comes from the parents so that they serve as models of healthy lifestyles. Such strategies should include in the design, the specific needs of the context and target population but also the promotion of the habits in the long term and the familiar context.

Traditional healthcare has relied on the reductionist approach, nevertheless there has been a shift in this tendency and now healthcare revolves around numerous extrinsic or intrinsic aspects that influence the network of health also known as an holistic approach². This was clearly perceived by some of the participants that established a correlation between each aspect of the HLB and acknowledged the interdependence between them in the reflections on the comment section. Perhaps this might be due to all the interventions of HLB promotion this population has been immersed in throughout their formative years.

Main limitations of our study may reside in the cross-sectional approach that we used. The student's perception was assessed during one specific period of time and this might not be a reflection of their overall wellness. A longitudinal approach might be needed to better understand it. Also, this study took place during the pan-

demical which per se could constitute a bias in the awareness on the importance of mental health. Perhaps during a less stressful time, the students' perception of the priority of mental wellness aspect could change or be scored lower in the importance scale. This is not a qualitative study but offers a glimpse into the students point of view.

Conclusion

Even though geographically different, the Latin American context shares a common pattern. The adoption of healthier behaviors face innumerable barriers, including the lack of social support, cost of adopting healthy behaviors, difficulty in daily routines, especially in time management, cultural preferences, and environmental restrictions. With social distancing amid the pandemic, a major shift in the perception of holistic wellness has emerged. Taking into focus the emotional sphere of a person's life and promoting the inclusion of different aspects of the healthy living behaviors to have an integrated perspective of health and its components.

Many factors may hinder the implementation and promotion of the HLB. These need to be addressed from different approaches. First, considering the background and the ecological niche in which the population resides, it may be the main obstacle that needs to be overcome. Second, taking into focus the problem around which strategies will be implemented. Third, taking into account the importance of promoting health as a whole, and lastly the long-term requirement to habit forging, otherwise, they will not be effective.

Collaborations

AR Garcia, M Lopez and A Mendez contributed to the design and implementation of the research. MM Diaz-Lopez, AR Garcia, A Mendez and DB Dibai contributed to the collection of the data. AR Garcia and A Mendez analyzed the data. MM Diaz-Lopez, AR Garcia, A Mendez, M Lopez and DB Dibai did the writing of the manuscript. M Lopez and A Mendez proofread and edited the final version of the manuscript. All authors provided critical feedback and helped shape the research.

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