Association of depression and healthy behaviors in early adult mexicans

Asociación de la depresión y las conductas saludables en la adultez temprana de mexicanos

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SUMMARY

Introduction: *Depressive disorders are the major cause of mental care worldwide, understanding their origin is of utmost importance to establish better diagnostic and intervention strategies, for positive short- and long-term outcomes.*

Aim: *To establish the relationship between healthy behaviors and the level of depression in early adults by applying two assessment instruments: the Beck Depression Scale and the Fantastic Test to determine if there is a correlation between the two.*

Method: *96 participants between 20 and 30 years old, Mexican, being a probabilistic sample with a reliability margin of 95 % and a margin of error of 10 %, of a non-experimental, cross-sectional design, with a correlational-explanatory scope, using the Beck depression scale with a reliability level of 0.86 % and the fantasy test of healthy behaviors with a reliability level of 0.60 %.*

Results: *The results obtained showed that there is a positive correlation between both variables with a P-value of 0.723, which is statistically significant at a level <0.01, that is, the higher the level of healthy behaviors, the higher the level of depression.*

Conclusions: *The pandemic is a multidimensional stressor that affects various areas of people's lives forcing them to a greater effort of adaptation, awareness, and recognition of depression in early adults, which are key today for the development of more effective campaigns and strategies.*

Keywords: *Online intervention, healthy behaviors, depression, early adulthood, Mexico.*

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RESUMEN

Introducción: *Los trastornos depresivos son la mayor causa de atención mental a nivel mundial, entender su origen es de suma importancia para establecer mejores estrategias de diagnóstico e intervención, para resultados positivos a corto y largo plazo.*

Objetivo: *Establecer la relación entre las conductas saludables y el nivel de depresión en adultos tempranos mediante la aplicación de dos instrumentos de evaluación: La escala de depresión de Beck y la prueba fantástica para determinar si existe una correlación entre ambas.*

Método: *96 participantes de 20 a 30 años, mejicanos, siendo una muestra probabilística con un margen de confiabilidad del 95 % y con un margen de error*

del 10 %, de un diseño no experimental, trasversal, con alcance correlacional-explicativo, utilizando la escala depresión de Beck con un nivel de confiabilidad del 0,86 % y de la prueba fantástico de conductas saludables con un nivel de confiabilidad del 0,60 %.
Resultados: *Los resultados obtenidos arrojaron que existe una correlación positiva entre ambas variables con un valor de P de 0,723 que es estadísticamente significativa al nivel <0,01, es decir, a mayor nivel de conductas saludables un mayor nivel de depresión.*
Conclusiones: *La pandemia es un estresor multidimensionales que afecta diversas áreas de la vida de las personas obligándolas a un esfuerzo mayor de adaptación, la conciencia y reconocimiento de la depresión en los adultos tempranos, son claves en la actualidad para la elaboración de campañas y estrategias de mayor eficacia.*

Palabras clave: *Intervención en línea, conductas saludables, depresión, adultos tempranos, México.*

INTRODUCTION

Depression generates an annual expenditure of between 40 and 50 billion dollars, due to low productivity and use of health resources (1). Between 2001 and 2002 the National Survey of Epidemiology and Psychiatry (ENEP) shows that in Mexico the prevalence of Major Depressive Episode (MDD) in the population aged 18 to 65 years is 7.2 % in a ratio of 2 women for every man with 9.8 % and 4.4 % respectively (2). Age is one of the most variable factors in these conditions, prevailing in young adults (3). Depressive disorders are linked to inappropriate behaviors and lifestyles, such as weight loss, sleep problems, smoking, and unprotected sexual activities, due to immediate gratification as opposed to healthy lifestyles that require a longer time for gratification (4).

According to the World Health Organization (WHO) in its 2008 report, that year there were 57 million deaths worldwide, 63 % of which were related to diseases caused by inadequate lifestyles (5). In 2019, 7 out of 10 reasons for death were non-communicable diseases, these 7 causes represent 44 % of all deaths, and the set of non-communicable diseases accounted for 74 % of deaths worldwide (6). The WHO recognizes health as everyone's responsibility, so unhealthy behaviors have an impact on the overall health quality of the individual generating deficiencies in the quality of life (7). Early adults are a population at risk due to their stage of development (8). In a study conducted at the Universidad Catolica Andres Bello in Caracas, Venezuela, a relationship was found between an unhealthy lifestyle and problems with sleep, weight, and physical problems (9). In a cross-sectional study between 2013 and 2014 of nursing students, the relationship between symptoms of depression and anxiety with excessive caloric intake and little physical activity reflected in problems such as overweight and obesity is evidenced (10). Research on the effectiveness of the promotion of healthy lifestyles in people with depressive symptoms shows that the promotion of healthy behaviors within the interventions decreases the negative effect and accelerates the improvement of the state of health perceived by the individual (11).

Chiluiza's project is a research related to the quality of life and depression in students of the faculty of education of the technical university of Ambato, as a result, it was obtained that students have 47.8 % of good quality of life, 35.5 % and a moderate level of depression with a percentage of 100 % (12). Unhealthy behaviors are related to psychological problems such as depression, stress, and anxiety. However, within this study, there is a relationship between these two factors that show a different view from previous studies, obtaining in its analysis, a correlation where the high presence of healthy behaviors is found in a population with moderate level depression showing that although this population has a good diet, and adequate weight, Although this population has a good diet, adequate weight, frequent physical activity, and adequate social activity, they currently present a depressive episode at different levels, which is an indicator that for an adequate and timely clinical diagnosis, the population should be educated to have a greater awareness of the importance of taking care of their mental health as part of their overall wellbeing.

There are few studies on the relationship between depression and healthy behaviors, therefore, the objective of the study is to determine if these factors that are evaluated for the diagnosis and classification of depression, are present in individuals and show to be effective protective factors in the early adult population.

METHOD

The research participants were 96 young adults between 20 and 30 years of age, from the community of Valle de Santiago, in Guanajuato, Mexico. It is a probabilistic sample, with a population of early adults of 24 008, with a confidence level of 95 % and a margin of error of 10 %, a non-experimental, cross-sectional, descriptive-correlational design will be used in this research to evaluate the associations of the variables (13).

Inclusion criteria

- Men and women

- Young adults who were natives of Valle de Santiago, Guanajuato

- Aged between 20 and 30 years old

- Who had a device to be able to take the tests electronically.

- Who agreed to participate voluntarily in the study

Measures

Two evaluation instruments were used for data collection, the Beck depression scale instrument, whose objective is to measure the severity of depressive symptoms, has a content validity and reliability of Cronbach's alpha 0.86 (14). The instrument has a number of items of 21 and the type of response is the Likert scale (15). The second one is the fantastic test, whose objective is to identify and measure the lifestyle of the population, which has a content validity and Cronbach's alpha reliability for the total scale of 0.60. The instrument has a number of items of 25 and the type of response is the Likert scale.

Procedure

Data collection was done by means of two online survey-type instruments. The surveys were conducted in Question Pro https: // laimportanciadelasaludmental.questionpro. com, the application route was through social networks, given the pandemic situation that was in the application time during March. Passing the generated link to each of the participants in the survey. Once the surveys were completed, we proceeded to the statistical analysis of the data to identify the significance between the study variables and thus indicate the conclusions, evaluating the feasibility of the hypotheses proposed for the collection of the data obtained in the implementation of the instruments.

Data analysis

An analysis based on Spearman correlations was used to find if there is a significant correlation between the two variables to be measured which are level of depression and presence of salable behaviors, in addition to the Mann-Whitney U test for the relationships between the variables, different subscales of each of the variables and dimensions with the sociodemographic data, the software used for statistical analysis in SPSS version 25.

Ethical considerations

This research study was based on the Helsinki code, published in 1964, (16) a document that regulates the medical community in relation to research. Considering the principles of this code, the freedom of the individual to participate freely and conscientiously in the research was respected through informed consent, where the reason for the study and its usefulness was explained, considering the well-being of the participant and the possibility of clarifying any doubts that might arise before, during or after participation. Within this research, topics that may be delicate and susceptible for the participants are touched upon, for which reason it was informed before starting the test that some questions may be sensitive and if you do not wish to answer you can leave your participation without any repercussion, as part of the considerations to the privacy of the participants in relation to the topics addressed in the test, the name of the participant was not requested, nor the e-mail address. The objective of the research was informed, and a follow-up was offered if the participant requested it after taking the test to provide guidance about their doubts or to orient them for mental health care if

they so wished, through the contact provided by the researcher in the informed consent form. In addition, ARCO rights were used for the safety of the participant.

RESULTS

Within the sociodemographic data, we found greater participation of young adults between 20 and 25 years of age, with a mean age of 23.54, with greater participation of women, in these sociodemographic results it is observed that 70 % of people have completed studies from high school to higher education. Table 1 shows that the most representative group of the study corresponds to women (52.2 %), the most representative age in this group is 20 years old (34.4). 81.3 % are single. On the other hand, 40.6 % work (Table 1).

Table 1

Sociodemographic data of the participants

Data		n	%	Sd
Age mean		23.54		
Age range		n	%	Sd
	20	33	34.4	3.32
	25	16	16.7	3.32
Sex				
	Woman	53	55.2	0.5
	Man	43	44.8	
Occupation				
	Study	39	40.6	
	Job	35	36.5	0.92
Level of education				
	High School or Technical	34	35.4	
	Degree	38	40.6	0.80
Marital status				
	Married	8	8.3	0.5
	Single	78	81.3	

The results obtained were analyzed using Spearman's non-parametric correlation test, showing that there is a highly significant relationship between these two variables, where the greater the presence of healthy behaviors, the higher the level of depression in the subject. The results show that there is a highly significant correlation between the two variables measured, determining that 35.9 % of the population has high levels of healthy behaviors, however, this does not have an impact on reducing the levels of depression that individuals present, since 49.3 % of the population has some level of depression between moderate to severe, i.e. about half of the population. Based on the result, it is affirmed that healthy behaviors are significantly related to the level of depression, in a positive way, that is, the higher the presence of healthy behaviors, the higher the level of depression in the population.

Table 2

Spearman correlations between healthy behaviors and level of depression

| | Depression level | |
	Pearson	P
Healthy Behavior	0.723	0.0001***

*** $p<0.001$

The Mann-Whitney U test was also used to compare the sociodemographic data with both variables to determine if there was a difference between the groups, obtaining from the analysis that these sociodemographic data considered in the research do not have a significance to determine groups with important differences that show risk or protective factors such as a higher level of education or a prevalence by sex or age range. It can be observed that the level of depression and healthy behaviors in both variables are identical in relation to sex (Table 3).

Tabla 3

Mann-Whitney U of Sex with the level of depression and healthy behaviors

	Depression		Healthy Behavior	
	Mann-Whitney U test	P	Mann-Whitney U test	P
Sex	821.500	0.041*	1 061.00	0.021*

* p <0.05

DISCUSSION

According to the analysis of the results, the initial hypothesis, as well as the objectives of the research were fulfilled, rejecting the initial hypothesis presented in the research where the higher the level of healthy behaviors present in the individual, the lower the level of depression, if present. The results generated in the research show that the early adult population has a high index of healthy behaviors with a higher tendency in behaviors related to associativity at 6.02 %, nutrition, addictions at 7.55 %, and sexual behaviors at 5.92 %.

In Mexico, the National Survey of Psychiatric Epidemiology (ENEP) estimated that 8.4 % of the population has suffered, according to the DSM-IV, an episode of major depression at some time with a median onset of 24 years. This is verified in this research, with 49.3 % of the population with the presence of depression, with a median of 23.54 % years (2).

From May 2013 to November 2014 in a random sample of 450 nursing and nutrition students, applying a structured questionnaire on physical activity and presumptive symptoms of anxiety and depression; the results highlighted that the prevalence of overweight/obesity estimated according to BMI was 32.4 % and symptoms of anxiety and depression are evidenced in students of the health area, associated with excessive intake and mild physical activity with a predisposition to overweight and obesity, in this study shows that there is the presence of symptoms of depression in subjects who have excessive intake and little physical activity (6), in contrast in the current study shows that behaviors related to nutrition care are presented in a 5.57 % of the subjects present a high level of healthy behaviors, which is 35.9 % of the studied population. Therefore, it can be inferred that although a depressive episode is present in the individual, he/she has a high percentage of self-care related to physical activity and good nutrition, which is reflected in his/her behaviors of balanced nutrition, adequate weight, and regular physical activity.

Results in research in countries such as Chile between 2015 and 2016 (17) show that early adults have a clear awareness about the care of their health and healthy habits however they have deficiencies in the care of these and justify their lack of care, throughout the stages of development of the human being there are stages of greater risk for the acquisition of risk behaviors such as youth, A longitudinal study in a university in Lima between 2012 and 2014 shows through the application of the Fantastic test in the 30-item version (18), that there is an improvement in areas such as food, weight and

cigarette consumption that is attributed to the promotion and prevention within society.

The two studies previously described show that there is a knowledge of self-care and healthy behaviors, if we compare the results with those obtained in this study, it is shown that there is a higher prevalence of healthy behaviors in the population, with high levels obtained in the dimensions of fantastic test that measure additions with 7.55 % and 5.57 % of 35.9 % of the population, being these dimensions of the group with the highest percentages. In previously described studies on the effectiveness of the promotion of healthy behaviors in patients with depression problems and their effectiveness in improving symptoms and the subject's perception of their state of health, it is in contrast to the results obtained which show that the presence of high healthy behaviors does not have a positive impact that can be observed as an effective protective factor that decreases the level of severity of the episode because according to the results analyzed most of the subjects have a level of depression between moderate to severe with the need for psychological intervention. These results are consistent with those obtained by González-González et al., 2021 (19) with undergraduate students from Universidad de la Salle, Mexico, obtaining similar results in relation to the prevalence of high levels of depression in the participants.

The total population studied was 96 early adults, with a mean age of 23.54 % years, with a majority of the single population with 81.3 %, 40.6 % only studying, and 55.2 % of female participants, which leaves us with little representation of ages closer to 30 years and with significant sociodemographic data such as marital status, active in a labored way, with which the study could have been broader and more homogeneous to be able to give results that could be compared highlighting these data. This work is very interesting because it shows an interesting discrepancy with previous data in different studies that were contemplated in the theoretical framework of this research, where it is shown that healthy behaviors act as protective factors and are used in programs to decrease the levels of depression, stress or anxiety in patients of different age groups with efficacy and positive results for the therapeutic process. However, in

this research the correlation shows an increase in both variables, which may be related to the public health situation we are going through, which is the COVID-19 pandemic and its variants, demonstrating that external factors such as pandemics or earthquakes affect the mental and physical health of individuals, generating the need for intervention programs that take these aspects into account (20). Health psychology has a biopsychosocial approach to the mind and body influenced by society and the development of technologies (21). This concept makes us think about the different lines of research that can be followed based on these results and the concept and importance of health psychology in the current situation.

Pandemics are multidimensional stressors that affect various areas of people's lives, forcing them to make a greater effort to adapt. Anxious depressive symptomatology and stress have been described in previous pandemics (22) and current research has shown that the population has been affected not only physically but also in their mental health with problems such as anxiety (23) as well as problems related to increasing occupational stress (24). The behaviors and subjectivity of individuals, groups, and populations can contribute to avoiding contagion and spread of disease, and the promotion of healthy behaviors and prevention can be strategies to confront the disease (25); therefore, it is important to take into account the relationship of all these factors in the concept and perception of the health of the population. Awareness and recognition of depression in early adults are currently keys to the development of national campaigns to motivate the initiation of individual therapy as a tool for self-knowledge and management of tools for management of anxiety due to confinement and work stress.

Finally, we consider that it is important to emphasize the importance of programs of integration and follow-up of the therapy, many times the work of the therapy is left when the program drawn up in the therapy is finished or the times designated by the institutions that must be carried out according to the national programs that intend to standardize the clinical work, leaving a space to consider the study on the follow-up of the patients who have come for a crisis or as a consultation derived from their primary care.

Depression is a recurrent disease, frequently chronic and requiring long-term treatment, its prevalence in the general population is between 8 and 12 %, it is estimated that by the year 2030 it will occupy the first place in the measurement of burden of disease according to disability-adjusted life years (26). According to Nora Blum, high-functioning depression is characterized by not having the typical symptoms of depression, so it was diagnosed as atypical or within the description of dysthymia, the complexity of proper diagnosis of depression, as well as the individual's own recognition of needing help in relation to their mental health becomes complex due to these atypical cases where it is not recognized that there is a depression because the subject's general functionality is maintained, as well as the recognition of the individual himself about needing help in relation to his mental health becomes complex due to these atypical cases where it is not recognized that there is a depression because the general functionality of the subject is maintained, however there are changes in the way of feeling, thinking, experiencing, acting and behaving (27), these atypical forms of the presence of depressive disorders give the reflexive guideline to develop innovations in the clinical way of approaching these diagnoses (28), using different approaches of psychology with the purpose of favoring the efficacy in the process of diagnosis, intervention, follow-up and promotion of mental health (29). The concepts and approaches of psychology make it possible to carry out programs that cover the different points that are often left out of current interventions (30).

Therapeutic support should have a multifactorial approach and should be known by all health personnel who care for the population, especially at the first level of care, physicians, nurses, and psychologists who are in the first line of care should be constantly updated about the correct diagnosis of depressive disorders (31).

Two of the therapies with the greatest efficacy demonstrated so far are cognitive behavioral therapy and behavioral activation, therapies that have currently demonstrated the greatest efficacy in the treatment of depressive disorders (32). Intervention programs such as "Always Forward" in Peru are strategies that can monitor the efficacy and prevalence of these types of therapy approaches (32). Therefore,

we consider that the population participating in this research can be considered for a controlled study with workshops with these approaches to evaluate through a pre-test and post-test process the efficacy and prevalence of the results of the interventions in the participants.

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