Chapter

Pilot Program on CBT to Promote Resilient Potential in University Students

León Hernández Aurora, Barcelata Eguiarte Blanca, González Arratia López Fuentes Norma Ivonne and González Escobar Sergio

Abstract

In the university academic context, various programs have been developed to promote resilience. However, in Mexico, the link between resilience and the interventions in higher education has been poorly researched, although it provides an excellent opportunity to explore possibilities from a preventive intervention framework. Objectives: (a) to promote university students' resilience potential through a cognitive-behavioral intervention program and (b) to compare the pretest and posttest values of the resilience variables between an experimental group and a control group. Participants and methods: 27 university students were studied, classified with low resilience who were randomly assigned to the experimental group (n = 14) and to the control group (n = 13). The experimental group received a cognitive-behavioral intervention of four weekly sessions of 2 hours; at the end of the intervention, an evaluation was carried out with a resilience questionnaire. The experimental group showed statistically significant resilient higher scores in the global resilience evaluation and the external protective factors. Conclusions: the findings show that this preventive program can be useful in promoting resilience potential in university students.

Keywords: CBT, resilience, university students, preventive intervention, program

1. Introduction

Generally, entering university coincides with the second stage of adolescence, which is distinguished by new complexities for its growth. This transition impels students to develop a series of knowledge, abilities, skills, attitudes, and values that allow them to adapt actively to the new demands, new kinds of interactions between equals, boyfriend or girlfriend relationships, as well as opportunities for freedom out of family protection [1, 2].

Leary and Derosier [3] argue that, although the transition to the university may be an exciting moment, it can be stressful since many of them leave family and friends behind, as well as they must adapt to the new increasing academic, social and

finance demands; these authors along with Catterall et al. [4] identified, as a result of this transition, that first-year university students tend to experience higher levels of stress, anxiety, and anguish compared to students of advanced grades. However, Leary and Derosier [3] suggest that there is a series of factors related to positive responses to stress, including social support, physical and mental care of themselves, self-regulation, cognitive flexibility, and optimism; they state that these factors seem to have an accumulative effect on stress so that students who possess a higher number of protective factors are more likely to adapt positively to stress.

Resilience plays an important role in the academic context, because it is where the students measure their own strengths against different challenges and requests, not only academic but also psychosocial, dealing with complex and demanding situations in which they must confront themselves for better understanding of their potential and strengths and learn and respond effectively, preserving their mental health and trust in their potential and abilities [5]. In this sense, Rashid et al. [6] explain that among the resilience factors in university students are responding properly to life challenges and staying focused on academic and professional goals through the execution of individual and community resources.

Resilience involves dynamic processes; it is an interaction between risk and protective processes, internal and external to the individual; these can change the perception and effects of a negative situation in life [7]. González Arratia [8, 9] mentions that it is about a multidimensional construct that includes problem solving skills, the possibility to have the support of family and/or important people to the individual, and empathy, considered as protective factors. Minulescu [7] argues that cumulative protective factors contribute to maintaining the balance in future negative events; in this way, Madewell and Ponce-Garcia [10] highlight that family and partner support may improve confidence when achieving goals; also, First et al. [11] argue that problem solving skills and the connection to other resources contribute to the development of coping strategies and resilience against adversity.

Most of CBT approaches are primarily concerned with issues, vulnerabilities, and the adversity record; as stated in Beck [12], "since the 1960's, Beck and others around the world have successfully adapted CBT to a diverse set of populations with a wide range of disorders and problems" ([12], p. 3), ranging from anxiety and depressive disorders to personality disorders, chronic pain, and sleep disorders.

Nevertheless, researchers as Fava and Ruini [13], Fava and Tomba [14], and Padesky and Mooney [15] suggest that CBT can be adapted to improve the qualities and positive attributes; as well as Bannink [16] and Kuyken et al. [17] draw on CBT theoretical elements, but focused on working on strengths, since they argue that "it offers the advantages of harnessing client strength in the change process to pave the way to lasting recovery" [17, p. 3]; they also say that the strategies can be behavioral, cognitive, emotional, social, spiritual, or physical.

Preventive interventions are performed in the absence of psychological symptoms or before they can occur and changes in strengths are evaluated. The resilience preventive approach has come across with the study of positive psychology [18]; Seligman, in Prince-Embury [18] argues that main advances on prevention matter come from a systematic development perspective of abilities and strengths his approach is based on providing structured interventions designed to develop resilient attitudes that later will soften depression symptoms. To summarize, the study of resilience inspired a transformation of intervention models based on deficits to those that recognize and promote resources and protection processes in the development [19].

Preventive programs can be applied to clinic samples and non-clinic samples; Barrett et al. [20] and National Research Council [21] classify these preventive programs in: (a) universal, focused on the entire population, not considering the risk situation; they are proactive and positive; (b) selective, addressed to individuals or a subgroup of the population with the risk of developing mental, emotional, or behavioral disorders significantly higher than the average; (c) indicated, these are preventive interventions targeting high-risk people or groups with early symptoms or problem behaviors that predict a high-risk level; the aim is to avoid mental, emotional, or behavioral disorders and/or to reduce the probability of coexistent disorders.

Prevention programs can be applied at any development stage and in any of the systems the individual interacts. Wright et al. [22] suggest that these interventions can be implemented during a transition or at a breaking point, since there is a possibility to activate developmental cascades that improve multiple domains of function. Those programs that promote resilience provide the resources needed to overcome adversity, make resources available, and ensure young people know these resources exist and that they have access to them whenever they need them [23]; they can be of different levels (personal, family, and social) that potentially help to respond and adjust to everyday situations positively [24]. They focus on the development of coping skills, mindfulness, recognition and emotion management, empathic relationships, self-efficacy, and social support; secondary results often report a reduction of anxiety symptoms, depression, and better academic results [25].

In the academic context, a series of universal preventive programs that promote resilience have been designed and applied. Recent studies have evaluated the efficacy of interventions in higher education students; for instance, Steinhardt and Dolbier [26] conducted a pilot study for university students that included psychoeducation, cognitive behavioral therapy, and rational emotive therapy: it was found that in contrast to a control group, students who completed the intervention presented an increase in protective and coping factors. Brewer et al. [27] analyzed different interventions to promote resilience in university students; they identified that most of the programs included thought and emotion management and interpersonal and contextual relationships. Other analyses [28, 29] show that universal programs provided by teachers are also effective in improving social and emotional skills.

In Mexico, the connection between resilience and interventions in higher education has been poorly researched, although it provides an excellent opportunity to explore possibilities from a preventive universal intervention framework in the academic context. This study focuses on both prevention as well as intervention, so the objectives of this study are to (a) promote resilience in university students through a cognitive behavioral intervention program; (b) compare pretest and posttest scores of resilience variables between an experimental and a control group. Thereby, the hypotheses are: (1) a cognitive behavioral intervention program has an effect on resilience in university students and (2) there are statistically significant differences in university students' resilience level after a cognitive behavioral intervention program.

2. Method

The independent variable was manipulated to detect the effects of the dependent variable; it is about a pretest–posttest design with a control group [30]; this is why the study was divided into two stages.

2.1 Participants

A 155-student sample was considered; however, as it is observed in **Figure 1**, only students that fulfilled the inclusion requirements were accepted. For the experimental group, only the students who wanted to participate, signed an informed consent release, attended to more than the 80% of the sessions, and completed the resilience questionnaire at the end of the intervention were considered. Regarding the control group, only the students who completed the initial evaluation, signed an informed consent release knowing that they would not participate in the intervention program, and filled out the final evaluation, were included. Hence, the sample consisted of 27 university students, 13 men (48.1%) and 14 women (51.9%); ages ranged from 18 to 23 years old (M = 20.78, SD = 1.05) from different degree programs (Business administration, Law, Psychology, and Computer Engineering); they were studying fourth, six, and eighth semesters. The groups were assigned through a random selection using an automated random number table. The experimental group was integrated by 6 men and 8 women between 18 and 23 years old, and the control group included 7 men and 6 women between 20 and 22 years old.

2.2 Procedure

Campus authorities were contacted, and their permission was requested to conduct the research. The methodology, purposes, limitations, and benefits of the intervention were explained to the participants; they were informed that the experimental group and the control group would be integrated randomly. The informed consent was given, so the participants could learn about the nature of the research, willing to participate freely as stated in the Regulations of the General Health Law of Mexico [31]; likewise, the confidentiality of their information was guaranteed. After

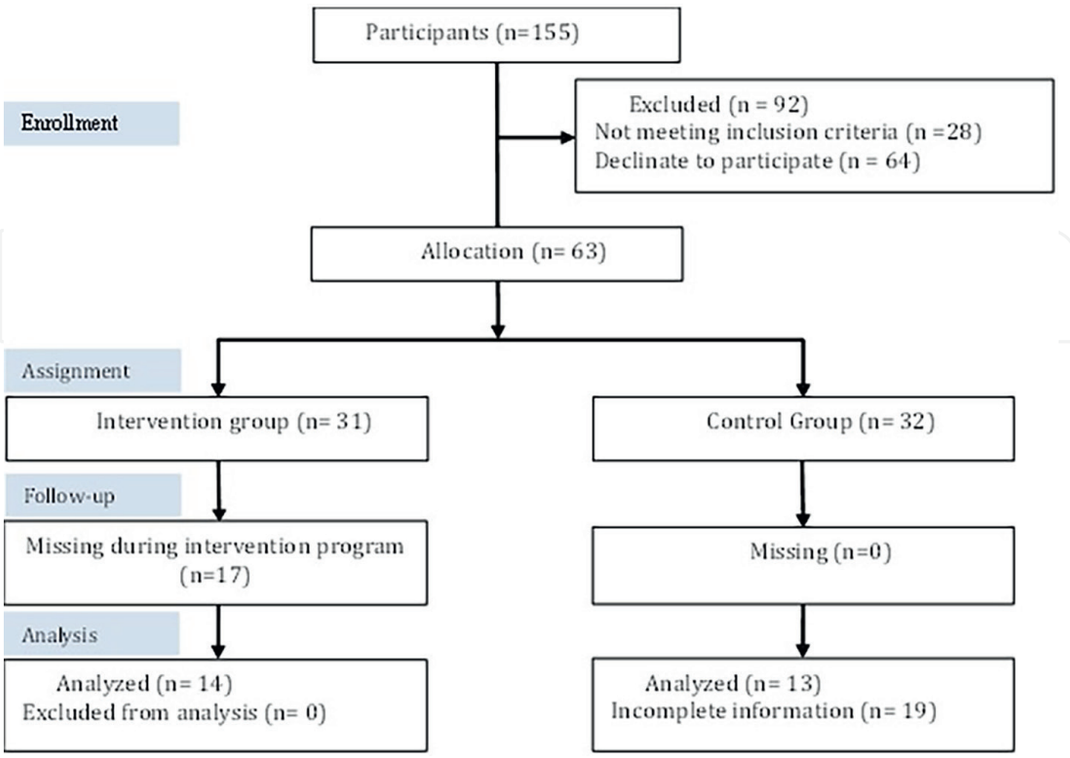

Figure 1.
Study participants flow chart.

DOI: http://dx.doi.org/10.5772/intechopen.113779

the explanation, the participants who decided to participate gave their informed consent. The intervention was carried out in person at the university facilities.

The intervention program named "*Acércate, promueve tu potencial resiliente*" was fundamentally based on a cognitive behavioral approach. It consisted of four two-hour, in-person weekly sessions. The design and the development of the content, as well as its implementation were carried out by the author with the supervision of the co-authors. The content of the intervention is summarized in **Table 1**. The data were analyzed using SPSS program.

2.3 Instrument

According to Gonzalez Arratia [32], the Resilience Questionnaire was structured from the ecological understanding of resilience [33]. Furthermore, it's based on the Henderson-Grotberg proposal; he argues that resilience factors are limited to both internal and external supports, which are: I have (external support), I am (inner strength), and I can (interpersonal skills and conflict resolution) [34].

In this sense, the Resilience Questionnaire is integrated by 32 items grouped into three dimensions: (a) Internal protective factors, related to problem solving skills

Session	Content	Tasks
1. Introduction to the cognitive behavioral model	• Sequence of the sessions • Agreements • Psychoeducation • Cognitive restructuring techniques • Tasks assignment	• Complete the cognitive behavioral model for recent situations. • Identify and register ineffective thinking styles. • Challenge ineffective thinking styles
2. Promoting decision making as internal protective factor.	• Tasks revision and analysis. • Psychoeducation: before making decisions, I breathe. • Relaxation techniques (diaphragmatic breathing) • Problem solving techniques • Tasks assignments	• Diaphragmatic breathing • Problem solving techniques
3. External protective factor: establish healthy and positive relationships.	• Tasks revision and analysis. • Psychoeducation: Support group, building healthy and positive relationships. • Successive approximation techniques • Tasks assignments	• Successive approximation techniques • Behavioral activation: I enjoy spending time with my family • Notes of gratitude
4. Cultivating empathy	• Tasks revision and analysis • Psychoeducation: Emotional empathy, cognitive empathy • Behavioral activation: Experience empathy • Tasks assignments	• Behavioral Activation: Experience empathy • Behavioral activation: connect with your community

Table 1.
General structure of the cognitive behavioral intervention program.

(α = 0.80); (b) External protective factors, referring to the possibility of relying on family support or important people to the individual (α = 0.73); and (c) the Empathy factor, which refers to altruistic behavior and prosocial (α = 0.78). It is evaluated with a five-point Likert scale. (1 = never, 2 = hardly ever, 3 = sometimes, 4 = generally, and 5 = always). When responding to the questionnaire, the participant is asked to have in mind a situation that they consider to be a crisis or in which they have had a problem, considering how they felt or how they behaved in that situation. It explains the 37.82% of the total variance and reaches 0.91 Cronbach's alpha reliability coefficient [8].

Originally, the Resilience Questionnaire was designed to evaluate Mexican children and teenagers [35–38]; however, because of its relevance in this context, it has been applied to groups of young people [39–41] and adults [42–44], demonstrating to be a reliable measure of the construct.

2.4 Data analysis

Differences between pretests and posttests of the experimental group and the control group were calculated with the Wilcoxon nonparametric statistic. To measure the differences in independent samples and identify the effect of the size, the Mann Whitney test was applied.

3. Results

Due to the nature of the data, nonparametric statistical analyses were carried out with the Wilcoxon rank sum test to compare the control group at its two moments. Although in the second measurement, an increase in the means global score of resilience and internal protective factors was observed, the analysis does not show significant statistical differences between the pretest and posttest of the studied variable (resilience) and its factors (internal protective factors, external protective factors, and empathy) (see **Table 2**).

For the experimental group, a comparison of the obtained data before and after the intervention with the Wilcoxon rank sum test was carried out; the results demonstrated a statistically significant increase in the global resilience score (p = 0.001), external protective factors (p = 0.012), and internal protective factors (p = 0.002); although an increase was observed in the empathy factor, the values did not reach significance (see **Table 3**).

To make comparisons between the experimental group and the control group before the intervention, the nonparametric statistic for independent samples,

Variable/factor	Pretest		Posttest		Z	P
	M	SD	M	SD		
Global resilience	127.77	9.16	129.36	10.12	−0.785	0.432
Internal protective factors	54.69	5.54	57.46	5.65	−1.45	0.146
External protective factors	45.92	3.94	45.08	4.40	−0.868	0.385
Empathy	27.15	2.47	26.92	2.56	−0.178	0.858

Table 2.
Wilcoxon test to evaluate changes in the resilience variable and its factors in the control group (n = 13).

Variable/factor	Pretest		Posttest		Z	P
	M	SD	M	SD		
Global resilience	127.93	4.66	135.07	5.29	−3.18	0.001
Internal protective factors	56.79	4.85	60.00	5.06	−2.52	0.012
External protective factors	45.64	3.79	49.07	2.70	−3.04	0.002
Empathy	25.14	5.47	26.36	5.89	−1.66	0.097

Table 3.
Wilcoxon test to evaluate changes in the resilience variable and its factors in the experimental group (n = 14).

Variable/factor	Groups	Average range	Mann–Whitney	Z	P
Global resilience	Experimental (n = 14)	13.75	87.50	−0.170	0.867
	Control (n = 13)	14.27			
Internal protective factors	Experimental (n = 14)	15.46	70.50	−1.00	0.325
	Control (n = 13)	12.42			
External protective factors	Experimental (n = 14)	13.89	89.50	−0.073	0.943
	Control (n = 13)	14.12			
Empathy	Experimental (n = 14)	13.25	80.50	−0.515	0.616
	Control (n = 13)	14.81			

Table 4.
Statistical differences of the resilience variable and its factors between the experimental group and the control group before the intervention.

Variable/factor	Groups	Average range	Mann–Whitney	Z	P	d
Global resilience	Experimental (n = 14)	16.93	50.00	−1.99	0.048	0.7
	Control (n = 13)	10.85				
Internal protective factors	Experimental (n = 14)	15.14	75.00	−0.782	0.458	0.4
	Control (n = 13)	12.77				
External protective factors	Experimental (n = 14)	17.86	37.00	−2.63	0.008	1.0
	Control (n = 13)	9.85				
Empathy	Experimental (n = 14)	14.43	85.00	−0.293	0.793	0.1
	Control (n = 13)	13.54				

Table 5.
Statistical differences and size effect of the resilience variable and its factors between the experimental group and control group after the intervention.

Mann Whitney U test, was used, in which no significant statistical differences were observed in the studied variable and its factors (see **Table 4**).

In addition, the experimental group and the control group were evaluated with the Mann Whitney U test after the intervention, and statistically significant differences were observed in the resilience global score ($p = 0.048$) and external protective factors ($p = 0.008$); no differences were observed in internal protective factors and empathy. The effect size for the resilience global score was medium ($d = 0,7$), and for the external protective factors, it was large ($d = 1.0$); even though there were no significant differences, internal protective factors had a small effect size (0.4) (see **Table 5**).

4. Discussion and conclusions

A program was designed to promote the resilient potential of university students based on cognitive behavioral therapy and preventive universal interventions. The conducted analysis in related samples reveals that for the control group, in the second measurement, an increment of the means in the global score of resilience and internal protective factors was observed without revealing statistically significant differences; on the contrary, in the external protective factors and the empathy factor, the means was lower.

In addition, it was observed that the experimental group revealed significant differences in global resilience scores and external and internal protective factors.

Statistically significant differences and the effect size for independent samples indicate that the global score in resilience and external protective factors are attributed to the intervention program; besides, even though there were not significant differences in the internal protective factors, a small effect was observed. Therefore, the program "*Acércate, promueve tu potencial resiliente*" proved to be effectively applicable for university students.

The observed increment in the effect size for external protective factors is an indication that building healthy positive relationships with relatives and friends enable an individual's resilience [45]. González Arratia [8] points out that a person who enjoys affective proximity acquires and uses skills and strategies to face difficult situations; Masten [46] also argues that young people who have healthy bonds with their family and their community are competent, adaptable, and successful.

Although a small effect was observed in internal protective factors, it can be said that resources like self-regulation through diaphragmatic breathing and problem-solving strategies contribute to resilience increment; in fact, research in different contexts suggests that diaphragmatic breathing helps in properly managing difficult situations [47–49].

For this intervention program, the empathy factor becomes an area of opportunity because the effect size is minimal; González Arratia [9] refers that altruistic and prosocial behaviors are resilience factors; according to Lemos y Richaud [50], cooperating, helping others, sharing, being altruistic, and showing empathy and compassion are resources that should be part of any program to encourage harmonious and comprehensive development of people at any stage of development.

The advantage of universal preventive programs that are taught in schools is that they have the possibility to reach most of the students. Through this type of programs, student support services can be improved and contribute to the development of resilience resources, which help them to cope with academic and everyday situations

in a healthy way. In this sense, Padesky and Mooney [15] indicate that promoting resilience helps people to face and manage positive and negative situations in life; they point out that its promotion provides a cushion to protect an individual from health and psychological consequences during hard times.

The present findings on universal preventive interventions are a guide to higher education institutions since they can reach more students for the promotion of resources and skills; according to Bradshaw et al. [51], implementing universal preventive interventions based on evidence that simultaneously teach prosocial behavior and academic skills can help schools to promote healthy academic and social development among students.

For further research, it is suggested to improve the scientific rigor and restructure the session that promotes empathy. Deeper research is required to determine the efficacy of this universal preventive program in other higher education institutions and eventually design an online program as an alternative strategy.

Acknowledgements

The authors wish to thank the administrators of the university campus for access to facilities and for the support provided in carrying out the present study, also the students who participated in this study and the National Council on Science and Technology.

Author details

León Hernández Aurora[1*], Barcelata Eguiarte Blanca[2],
González Arratia López Fuentes Norma Ivonne[3] and González Escobar Sergio[4]

1 Faculty of Medicine, Autonomous University of the State of Mexico, Toluca, Mexico

2 Faculty of Advanced Studies Zaragoza, National Autonomous University of Mexico, Mexico, Mexico

3 Faculty of Behavioral Sciences, Autonomous University of the State of Mexico, Toluca, Mexico

4 Atlacomulco University Center, Autonomous University of the State of Mexico, Atlacomulco, Mexico

*Address all correspondence to: aleonh@uaemex.mx

References

[1] Gutierrez IA, Park CL. Emerging adulthood, evolving worldviews. Emerging Adulthood. 2015;**3**(2):85-97

[2] Nieves Achón ZI, Satchimo Namalyongo A, González Nieves Y, Jiménez JM. Algunas consideraciones acerca del estrés académico en los estudiantes universitarios. Psicoespacios: Revista virtual de Ciencias Sociales y Humanas [Internet]. 2013 [cited August 31, 2022];**7**(11):91-116. Available from: https://revistas.iue.edu.co/index.php/Psicoespacios/article/view/215

[3] Leary KA, Derosier ME. Factors promoting positive adaptation and resilience during the transition to college. Scientific Research Publishing [Internet]. 2012;**3**(12):1215-1222. Available from: http://www.scirp.org/journal/psych

[4] Catterall J, Davis J, Yang DF. Facilitating the learning journey from vocational education and training to higher education. Higher Education Research & Development. 2014;**33**(2):242-255

[5] Álvarez YL, Cáceres L. Resiliencia, rendimiento académico y variables sociodemográficas en estudiantes universitarios de Bucaramanga (Colombia). Psicologia Iberoamericana [Internet]. 2010;**18**(2):37-46. Available from: http://www.redalyc.org/articulo.oa?id=133915921005

[6] Rashid T, Louden R, Wright L, Chu R, Maharaj A, Hakim I, et al. Flourish: A strengths-based approach to building student resilience. In: Proctor C, editor. Positive Psychology Interventions in Practice [Internet]. Cham: Springer International Publishing; 2017. pp. 29-44. Available from: http://link.springer.com/10.1007/978-3-319-51787-2

[7] Minulescu M. Is university capable to build resilience in students? Procedia - Social and Behavioral Sciences. 2015;**2015**(**180**):1628-1631. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1877042815016638

[8] González Arratia NI. ¿Qué es la resiliencia? In: Resiliencia y personalidad en niños y adolescentes Cómo desarrollarse en tiempos de crisis. 2da ed. México: Universidad Autónoma del Estado de México; 2016. pp. 23-32. Available from: http://148.215.126.225/siestudiosa/FrmEditorial/2011/L_422_208_1.pdf

[9] González Arratia NI. Autoestima, Optimismo y Resiliencia en Niños en Situación de Pobreza. Revista Internacional de Psicologia[Internet]. 2018;**16**(01):1-119. Available from: https://www.revistapsicologia.org/index.php/revista/article/view/261

[10] Madewell AN, Ponce-Garcia E. Assessing resilience in emerging adulthood: The resilience scale (RS), Connor-Davidson resilience scale (CD-RISC), and scale of protective factors (SPF). Personality and Individual Differences [Internet]. 2016;**97**:249-255. DOI: 10.1016/j.paid.2016.03.036

[11] First J, First NL, Houston JB. Resilience and coping intervention (RCI): A group intervention to Foster College student resilience. Social Work Groups. 2017[cited April 3, 2022];**41**(3):198-210. Available from: https://www.tandfonline.com/doi/abs/10.1080/01609513.2016.1272032

[12] Beck JS. Cognitive Behavior Terapy. Basics and Beyond. 3rd ed. New York: The Guilford Press; 2021

[13] Fava GA, Ruini C. Development and characteristics of a well-being enhancing psychotherapeutic strategy: Well-being therapy. Journal of Behavior Therapy and Experimental Psychiatry. 2003;**34**(1):45-63

[14] Fava GA, Tomba E. Increasing psychological well-being and resilience by psychotherapeutic methods. Journal of Personality. 2009;**77**(6):1903-1934

[15] Padesky CA, Mooney KA. Strengths-based cognitive-behavioural therapy: A four-step model to build resilience. Clinical Psychology & Psychotherapy. 2012;**19**(4):283-290

[16] Bannink F. Positive CBT: From reducing distress to building success. Journal of Contemporary Psychotherapy. 2014;**44**(1):1-8

[17] Kuyken W, Padesky CA, Dudley R. The science and practice of case conceptualization. Behavioural and Cognitive Psychotherapy [Internet]. 2008;**36**(06):757-768. Available from: http://www.journals.cambridge.org/abstract_S1352465808004815

[18] Prince-Embury S. Review of resilience conceptual and assessment issues. In: Prince-Embury S, Saklofske DH, editors. Resilience Interventions for Youth in Diverse Populations [Internet]. New York, NY: Springer New York; 2014. pp. 13-23. Available from: http://link.springer.com/10.1007/978-1-4939-0542-3_2

[19] Yates TM, Tyrell FA, Masten AS. Resilience theory and the practice of positive psychology from individuals to societies. In: Joseph S, editor. Positive Psychology in Practice: Promoting Human Flourishing in Work, Health, Education, and Everyday Life. 2nd ed. New Jersey: Wiley; 2015. pp. 773-788

[20] Barrett PM, Cooper M, Gallegos J. Using the FRIENDS programs to promote resilience in cross-cultural populations. In: Prince-Embury S, Saklofske DH, editors. Resilience Interventions for Youth in Diverse Populations. New York, NY: Springer; 2014. pp. 85-108

[21] National Research Council. In: O'Connell ME, Boat T, Warner KE, editors. Preventing Mental, Emotional, and Behavioral Disorders among Young People [Internet]. Washington: National Academies Press; 2009 [cited April 1, 2022]. pp. 1-562. Available from: https://www.ncbi.nlm.nih.gov/books/NBK32775/

[22] Wright MO, Masten AS, Narayan AJ. Resilience processes in development: Four waves of research on positive adaptation in the context of adversity Margaret. In: Goldstein S, Brooks RB, editors. Handbook of Resilience in Children [Internet]. 2nd ed. New York: Springer Science+Business Media; 2013. pp. 15-38. Available from: http://link.springer.com/10.1007/b107978

[23] Ungar M. What Works? A Manual for Designing Programs That Build Resilience [Internet]. Canada: Resilience Research Centre; 2017. pp. [cited June 26, 2023]. pp. 9-92. Available from: https://resilienceresearch.org/files/WhatWorks-Ungar-WebVersion.pdf

[24] Barcelata BE, Rodríguez R. Desarrollo y validación de la Escala de Recursos Potenciales para la Resiliencia para Adolescentes. Revista Latinoamericana de Medicina Conductual. Canada: Resilience Research Centre. 2016;**6**(2):75-87

[25] Fenwick-Smith A, Dahlberg EE, Thompson SC. Systematic review of resilience-enhancing, universal, primary school-based mental health promotion programs. BMC Psychology. 2018;**6**(1):1-17

[26] Steinhardt M, Dolbier C. Evaluation of a resilience intervention to enhance coping strategies and protective factors and decrease symptomatology. Journal of American College Health. 2008;**56**(4):445-453. Available from: http://www.tandfonline.com/doi/abs/10.3200/JACH.56.44.445-454

[27] Brewer Margo L, van Kessel G, Sanderson B, Naumann F, Lane M, Reubenson A, et al. Resilience in higher education students: A scoping review. Higher Education Research & Development. 2019;**38**(6):1105-1120

[28] Conley CS, Durlak JA, Shapiro JB, Kirsch AC, Zahniser E. A meta-analysis of the impact of universal and indicated preventive technology-delivered interventions for higher education students. Prevention Science. 2016;**17**(6):659-678. Available from:. DOI: 10.1007/s11121-016-0662-3

[29] Durlak JA, Weissberg RP, Dymnicki AB, Taylor RD, Schellinger KB. The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. Child Development. 2011;**82**(1):405-432

[30] Campbell DT, Stanley JC. Experimental and Quasi-Experimental Desings for Research. 1st ed. Boston: Houghton Mifflin Company; 1963

[31] DOF. Diario Oficial de la Federación. Reglamento de la ley general de salud en materia de investigación para la salud. México; 2014. pp. 1-31. Available from: http://www.diputados.gob.mx/LeyesBiblio/regley/Reg_LGS_MIS.pdf

[32] González-Arratia-López-Fuentes NI, Domínguez-Espinosa A d C, Torres Muñoz MA. Evaluación psicométrica de la Escala de Resiliencia para niños mexicanos (GA-RE14). Revista Evaluar. 2019;**19**(3):1-19. Available from: https://revistas.unc.edu.ar/index.php/revaluar/article/view/26772

[33] Ungar M. Social ecologies and their contribution to resilience. In: Ungar M, editor. The Social Ecology of Resilience [Internet]. New York, NY: Springer New York; 2012. pp. 13-31. Available from: https://link.springer.com/10.1007/978-1-4614-0586-3_2

[34] Henderson-Grotberg E. ¿Qué entendemos por resiliencia? ¿Cómo promoverla? ¿Cómo utilizarla? In: La resiliencia en el mundo de hoy. Argentina: Gedisa; 2003

[35] González Arratia NI. Resiliencia y personalidad en niños y adolescentes. Cómo desarrollarse en tiempos de crisis. 2nd ed. Méxco: Eón; 2016. pp. 12-150

[36] González Arratia NI, Valdez JL, Oudhof H, González S. Resiliencia y salud en niños y adolescentes. CIENCIA ergo-sum [Internet]. 2009;**16**(3):247-253. Available from: http://cienciaergosum.uaemex.mx/index.php/ergosum/article/view/1335

[37] González Arratia NI, Valdez Medina JL, Oudhof H, González ES. Resiliencia y factores protectores en menores infractores y en situación de calle. Psicología y Salud [Internet]. 2012;**22**(1):49-62. Available from: http://www.uv.mx/psicysalud/psicysalud-22-1/22-1/Norma.Ivonne González-Arratia López Fuentes.pdf

[38] Bravo-Andrade HR, González-Betanzos F, Ruvalcaba-Romero NA, López-Peñaloza J, Orozco-Solís MG. Propiedades psicométricas del Cuestionario de Resiliencia para Niños y Adolescentes en estudiantes mexicanos de bachillerato. Acta Colombiana de Psicología. 2019;**22**(2):292-305

[39] González Arratia NI, Valdez Medina JL. Optimismo-pesimismo y resiliencia en adolescentes de una universidad pública. Ciencia Ergo Sum [Internet]. 2012;**19**(3):207-214. Available from: https://www.redalyc.org/articulo.oa?id=10423895002

[40] González-Arratia NI, Valdez Medina JL. Resiliencia: Diferencias por Edad en Hombres y Mujeres Mexicanos. Acta de investigación psicológica. 2013;**3**(1):941-955

[41] Piña K. Bienestar psicológico y resiliencia en jóvenes universitarios [Tesis de maestría]. México: Universidad Autónoma del Estado de México; 2017 [cited April 14, 2022]. Available from: http://hdl.handle.net/20.500.11799/68666

[42] González Arratia NI, Valdez Medina JL. Resiliencia y personalidad en adultos. Psicologia Iztacala [Internet]. 2011;**14**(4):295-316. Available from: http://www.medigraphic.com/pdfs/epsicologia/epi-2011/epi114p.pdf

[43] Ramírez Jiménez MG, González-Arratia NI, Ruíz Martínez AO, Van Barneveld HO, Barcelata Eguiarte BE. Afrontamiento religioso y espiritualidad como mediadores entre estrés percibido y resiliencia en adultos con diabetes mellitus tipo 2. LIBERABIT Revista Peruana de Psicología. 2022;**28**(2):1-17

[44] Vargas, Sánchez KM, González Arratia NI, Valdez Medina JL, González Escobar S, Zanatta CE. Resiliencia en adolescentes y adultos en internamiento por diversos delitos. Revista Mexicana de Sociología. 2020;**27**(1):1-12

[45] Boon HJ, Cottrell A, King D, Stevenson RB, Millar J. Bronfenbrenner's bioecological theory for modelling community resilience to natural disasters. Natural Hazards. 2012;**60**(2):381-408

[46] Masten AS. Ordinary Magic. New York: The Guilford Press; 2014

[47] Cheshire A, Peters D, Ridge D, Hughes J, Lewith G, Panagioti M, et al. GPs' perceptions of resilience training: A qualitative study. British Journal of General Practice. 2017;**67**(663):e709-e715. Available from: https://bjgp.org/content/67/663/e709

[48] Dow DE, Mmbaga BT, Turner EL, Gallis JA, Tabb ZJ, Cunningham CK, et al. Building resilience: A mental health intervention for Tanzanian youth living with HIV. AIDS Care. 2019;**30**(Suppl. 4):12-20

[49] Mayor L. Resilience Gym: Entrenamiento virtual en el desarrollo del afrontamiento emocional de situaciones clínicas [Internet]. Madrid; 2019:1-10 [cited April 5, 2022]. Available from: https://eprints.ucm.es/id/eprint/61197/

[50] Lemos VN, Richaud de Minzi MC. Childhood prosocial behavior in the school environment. In: Castro-Solano A, editor. Positive Psychology in Latin America [Internet]. New York: Springer US; 2014. pp. 179-193. Available from: http://link.springer.com/10.1007/978-94-017-9035-2

[51] Bradshaw CP, Zmuda JH, Kellam SG, Ialongo NS. Longitudinal impact of two universal preventive interventions in First grade on educational outcomes in high school. Journal of Education & Psychology [Internet]. 2009;**101**(4):926