

Coping Styles Scale For The Use Of Digital Technologies And Metacomplex Learning Environments

Victor del Carmen Avendaño Porras¹, Andrés Correal Cuervo², Claudia Inés Bohórquez Olaya³, Rodrigo Correal Cuervo⁴

¹Universidad de Boyacá, vcavendano@uniboyaca.edu.co

²Universidad de Boyacá, sacorreal@uniboyaca.edu.co

³Universidad de Boyacá, cibohorquez@uniboyaca.edu.co

⁴Universidad de Boyacá, rocorreal@uniboyaca.edu.co

Abstract

The study aimed to elaborate the Coping Styles Scale for Adolescents, using the Skinner and Zimmer-Gembeck (2009) model, in the contexts of family, peers and school. The instrument was validated by a panel of judges and applied to a non-probabilistic sample composed of 130 adolescents (85 females and 45 males) with an average age of 17.24 years, students of the Escuela Normal Experimental “Fray Matías Antonio de Córdova y Ordóñez” (n= 53) and the Escuela Preparatoria No.1 del Estado (n=77), both in San Cristóbal de Las Casas, located in Chiapas, Mexico. A total of 119 items were obtained, with an overall Cronbach’s alpha of 0.939.

Keywords: adolescents, coping, COVID-19, instrument, validity, validity

Introduction

The COVID-19 pandemic has been declared a public health emergency by the World Health Organization (2020), and countries are facing a situation with tragic consequences. It is an unprecedented multimodal crisis - health, labor, economic and social - with particular repercussions in developing countries. Preventive measures to avoid contracting the virus include social distancing and confinement, both of which have a terrible side due to the long-term consequences they cause.

Home confinement by COVID-19 is an unprecedented measure in our country, which can have a negative impact on the physical and psychological well-being of children and adolescents (Brazendale et al., 2017; Brooks et

al., 2020). According to early studies reflecting on the psychological impact of quarantine on children and adolescents, factors affecting mental health include loss of habits and routines and psychosocial stress (Wang et al., 2020; Zhang et al., 2020).

Some studies (Benjet et al., 2010) indicate that up to 66.7% of adolescents have experienced at least one adversity and nearly 50% have experienced more than one. The most frequently reported adversities are parental illness (24%), economic difficulties (22%), family discord (18%) and parental alcohol consumption (17%); during the pandemic period, it is very likely that these adversities will occur on a larger scale.

Adolescence

According to the World Health Organization (2021), adolescence is a period of growth in life that occurs between 10 and 19 years of age and is characterized as a stage of accelerated growth and change. Beyond the biological aspects, this growth refers to acquiring experiences and competencies that will lead the person to face the difficulties of independence and adult life. For this development, the primary social circles such as family, community and school are vital. It is considered a crucial stage in the development of every human being since emotional, cognitive, affective and growth changes occur, in addition to the consolidation of the personality, there are many definitions of the term adolescence and most agree in considering change as one of its primary characteristics (Cedo, 2016).

Coping with stress in adolescence

According to Casullo and Castro (2002), adolescence as a stage of change, together with the limited life experience of adolescents, means that the difficulty in coping with stressful situations may manifest itself in emotional or behavioral problems and affect physical health.

Casullo and Castro (2002) state that it is essential to study the different coping styles in the different stages of life, especially in the early stages, considering adolescence is essential because it has been established that over time, coping styles are modified; it is important to consider that, compared to children and the elderly, adolescents perceive that they suffer from few direct harmful consequences that represent a threat to their lives.

Gonzalez et al. (2002) mention that younger adolescents more frequently use the coping style focused on emotion, while older

adolescents focus on the problem. Knowing how to cope effectively with problems, having effective strategies, and having a good decision-making capacity are considered protective factors for adolescents. In addition, they use social support as their primary coping resource to a greater extent than older adolescents, meaning that they find the greatest support in their peers to cope with the problems that generate stress. The difficulties faced by adolescents will force them to modify their ways of thinking and acting, and the society they develop should provide them with physical and psychological support to help them cope successfully with these problems. Therefore, it would be ideal to create spaces where adolescents have the opportunity to learn about appropriate ways of coping with stress in their lives that will lead them to achieve their goals.

Coping

The term coping has been used with different meanings. Regarding the word coping, Góngora (2000, in Gutiérrez and Ángeles, 2012) analyzed what could be a correct translation into Spanish: to make attempts to overcome problems and difficulties and to connect or make an effort, especially under equal circumstances or successfully, to deal with difficulties, to act to overcome them and to find resources to overcome a problem.

Coping has been treated under different theoretical frameworks from which different definitions have been developed. According to Ewards (1988, in Otero, 2011), there are two fundamental approaches; the first proposes definitions that understand coping as a relatively stable personal style or as a habitual way of dealing with stress. Second, it is a process, i.e., a series of specific cognitions and behaviors that change over time and situations developed by individuals to manage stress.

Coping refers to how human beings react to the problems and difficulties of daily life; that is, the mechanisms used to resist stress, such as solving the problem directly, negotiating, avoiding it, etc.; therefore, the study of coping has sought to know what these mechanisms are, in order to support the generation of competent people to handle stressful situations, since it has been identified that the ability to cope adaptively with stress is an important factor in the development of good mental health (Forns et al., 2012).

Fierro (2005) develops that the concept of coping is explained together with the concept of stress due to its causal relationship. Regardless of the situations that a person may subjectively classify as stressful, the behaviors or responses with which the person responds to a difficult situation encompass what concerns his or her coping styles.

Likewise, Vázquez, Crespo and Ring (2003) define coping as those efforts to manage external and internal demands that are personally considered stressful. The strategies or behaviors employed are not always the same and may occur unconsciously.

The development of this type of coping, which involves directly facing the problem, includes a series of responses, such as negotiation, self-criticism, self-reliance, problem-solving, adaptation and seeking support, which is linked to the development of the competencies inherent to the school stage. It is known that at this age the most significant changes occur in the processes of cognitive and social skills (Masten et al., 2006), so that if the adolescent does not learn these types of responses, he/she will present maladaptive behavior and thus may develop clinical symptoms (Cicchetti, 2006).

Skinner and Zimmer-Gembeck Coping Model

Skinner and Zimmer-Gembeck (2009) propose a model in which coping is a multiple-individual process that occurs in contexts such as family, school and among peers, creating demands, resources, filters and reinforcers to the coping capacities being developed. The development of coping strategies is described according to the stage of life in which the person is: first as an adaptive process in the face of stressful situations, risk or adversity; later as an episodic process, where those mechanisms that worked previously are replicated in new stressful situations, resulting in the learning of skills and resources for future risk situations; and at higher levels or ages, as a process of interaction where multiple scenarios and previous responses are consciously compared, before giving a response to the stressor context faced at the time. Skinner and Zimmer-Gembeck (2005) consider the social circles (family, school and peers) in whose contexts coping skills are developed to be vital for development. Following this model, coping styles in adolescents are expected to use strategies based on personal values and long-term goals, and the role of their social circles will be to support and monitor the coping actions taken.

Taking up Skinner and Zimmer-Gembeck's (2009) model, a total of twelve dimensions are explored in which the following coping styles are measured:

- Problem-solving. The process's function is to adjust actions to be effective and includes strategy formulation, instrumental coping, planning and mastery.
- Information seeking. Its function is to find additional contingencies, including reading, observing and asking others.
- Impotence. The function is to find limits to actions and encompasses confusion, cognitive

interference, cognitive exhaustion and passivity.

- Escape. Its function in the adaptive process is to escape from non-contingent environments and the forms of coping grouped are mental withdrawal, flight, denial, avoidance behaviors and positive fantasy thinking.

- Self-sufficiency. The function of the adaptive process is to protect available social resources through emotional and behavioral regulation, regulation of expression and focus on emotion.

- Support seeking. Its function is to employ available social resources and includes contact, comfort, help, and social referral.

- Delegating. Whose function is to find limits in resources where forms of coping such as self-pity, complaining and maladaptive help-seeking are grouped.

- Social withdrawal. Withdrawal from supportive contexts, including avoidance of others, hiding, social withdrawal and “freezing.”

- Accommodation. The function is to flexibly adjust preferences to options through distraction, cognitive restructuring, minimization, and acceptance.

- Negotiation. Its function is to find new options through negotiation, persuasion and prioritization.

- Submission. Refers to the abandonment of preferences and includes rumination, rigid perseveration and intrusive thoughts.

- Opposition. The function is to remove restrictions and includes blaming others, aggression, projection and defiance.

Factors involved in coping

The coping function is adaptive because it refers to behaviors and ways of thinking that help people escape moments of distress.

Stressful events can be external, internal, or a combination of both. The following are the factors that commonly provoke stress; therefore, ways to cope with them will be

sought: 1. Intense and extraordinary life events. Objective experiences alter or threaten the individual's usual activities, causing a substantial readjustment in the individual's behavior (Sandín and Chorot, 2002; Thoits, 1995); 2. Minor events or daily stress. Lazarus et al. (1984) consider daily stressful events to produce more stress responses and adverse psychological and biological effects than extraordinary and infrequent events; 3. Type of profession, hobbies, frequency of social contacts.

Method

Considering the theoretical aspects already mentioned about the current pandemic situation and its implications regarding the security measures taken in our country, the confinement and psychosocial stress in which adolescents are currently developing are unprecedented contexts, which demand the opening of research spaces, to know the impact and the measures that could be required to help this generation in the short and long term; specifically in skills such as coping.

For the present study, a self-administered instrument was constructed with a Likert-type response format with five response options: 1=Never, 2= Almost Never, 3= Sometimes, 4= Almost Always and 5= Always. The higher the score per dimension, the higher the score, and the more frequently adolescents use this coping style. Although the twelve dimensions proposed by the Skinner and Zimmer-Gembeck (2009) model were developed due to the relevance of the circles and social context for developing coping styles, the initial scale consisted of 134 items.

Sample

The panel comprised six experts in education, teachers and researchers in higher education with experience in instrument construction.

The pilot test sample was non-probabilistic and consisted of 130 participants. The sample was composed of 85 females (mean age=16.3 SD=1.32) and 45 males (mean age=18.9 SD=1.48), with a mean age of 17.24 years (SD=1.83), students of the Escuela Normal Experimental “Fray Matías Antonio de Córdoba y Ordóñez” (n= 53) and the Escuela Preparatoria No. 1 del Estado (n=77), both in San Cristóbal de Las Casas, located in Chiapas, Mexico.

Procedure

The Skinner and Zimmer-Gembeck (2009) model were used to define the basic concepts and development of the instrument. A total of 134 items distributed in twelve dimensions were elaborated. Content validity was guaranteed by the judgment of a panel of six experts who evaluated: Clarity, the item measures a variable or category; Coherence, the item is apparent and does not generate confusion or contradictions; Scale, the item can be answered according to the scale presented in the instrument; and relevance, the item is relevant to meet the research objectives. They were evaluated using a Likert scale with five response options (1=Unacceptable, 2=Deficient, 3=Regular, 4=Good and 5=Excellent). On average, none of the items was evaluated below 3=Regular (in its four dimensions: clarity, coherence, scale and relevance). After review by the judges, the instrument was applied online to the established sample of students (n=130). Due to the health emergency experienced at the time of application (2020) and its preventive measures, the instrument was developed employing a digital survey using the Google Forms platform. The internal consistency was obtained by Cronbach's alpha and the method of split halves; after the confirmatory factor analysis, 15 items were eliminated due to their low dimensional

correlation, leaving an instrument of 119 items distributed in twelve dimensions.

Results

Once the factor analysis was performed, the scale was made up of 119 items distributed as follows: Problem-solving with 10 items (table 1), Search for information with 10 items (table 2), Helplessness with 10 items (table 3), Escape 10 items (table 4), Self-sufficiency 8 items (table 5), Search for support 11 items (table 6), Delegating 9 reagents (table 7), Social Isolation 11 reagents (table 8), Accommodation 10 reagents (table 9), Negotiation 10 reagents (table 10), Submission 10 reagents (table 11), and Opposition 10 reagents (table 12).

Cronbach's Alpha statistical tests were performed for the entire scale and by factors to estimate the degree of internal consistency of the test. The analysis yielded the following coefficients: Cronbach's Alpha overall 0.939 and Cronbach's Alpha by dimensions: Problem solving 0.833 (table 1), Information seeking 0.834 (table 2), Helplessness 0.820 (table 3), Escape 0.794 (table 4), Self-sufficiency 0.643 (table 5), Support seeking 0.881 (table 6), Delegating 0.855 (table 7), Social Isolation 0.900 (table 8), Accommodation 0.635 (table 9), Negotiation 0.828 (table 10), Submission 0.894 (table 11) and Opposition 0.799 (table 12). Likewise, a coefficient .854 was obtained with the method of split halves. The items P48, P51, P57 are negative to the dimensions, so it is necessary to invert the numerical values of the Likert Scale (5=1, 4=2, 3=3, 2=4 and 1=5) to make the total sum of the dimension.

Table 1 shows the items (10 items) of the Problem Solving dimension, with a Cronbach's Alpha 0.833. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the

corrected item-total correlation and Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated

below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 50.

Table 1. Problem Solving Dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|---|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| P1 When a problem is at home, I contribute ideas to solve it. | 4.6 | 4.6 | 4.3 | 4.6 | 0.550 | 0.815 |
| P3 When I cannot solve a problem among my friends, I think of other strategies. | 4.3 | 4.3 | 4 | 3.6 | 0.558 | 0.814 |
| P4 When a plan does not work for me at school, I generate another plan. | 4.3 | 4 | 4 | 4.3 | 0.496 | 0.820 |
| P6 When there is a family problem, I participate in solving it. | 4.3 | 4.3 | 4.3 | 3.6 | 0.590 | 0.810 |
| P7 When there is a problem among my friends, I look for ways to help them solve it. | 4.3 | 4.6 | 4 | 4 | 0.495 | 0.820 |
| Q8 When I have a problem with a friend, I try to fix it. | 5 | 4.6 | 4.3 | 3.6 | 0.540 | 0.816 |
| P9 When I have a problem at school I generate a plan to solve it. | 4.6 | 4.3 | 4.6 | 4 | 0.479 | 0.821 |
| P10 When a problem arises at home I seek to understand the parts of the problem. | 5 | 4.6 | 4.3 | 4.6 | 0.589 | 0.810 |
| P11 I have strategies for solving school problems. | 4 | 4 | 4 | 4 | 0.568 | 0.813 |
| P25 When there is a problem at home I prefer to intervene. | 3.6 | 4 | 3.6 | 3.6 | 0.366 | 0.833 |

Table 2 shows the items (10 items) of the Information Search dimension, with a

Cronbach's Alpha of 0.834. The table integrates the evaluation averages by experts

(Clarity, Coherence, Scale and Relevance), the corrected item-total correlation and Cronbach's Alpha of the dimension if the item

is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 50.

Table 2. Information search dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|--|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| P12 When I am not satisfied with a grade, I ask the teacher for an explanation. | 4.3 | 4 | 4 | 4 | 0.494 | 0.822 |
| Q13 When I have a misunderstanding with my friends, I ask them questions to understand what happened. | 4.6 | 4.3 | 4.3 | 3.6 | 0.573 | 0.814 |
| P14 When I don't understand what is going on with my friends, I ask one of my friends about the situation. | 4.6 | 4.6 | 4.3 | 4.6 | 0.567 | 0.815 |
| Q15 When I seek to solve a problem within the family, I ask what they think about the problem. | 4.3 | 4 | 4.3 | 4.6 | 0.642 | 0.807 |
| P16 When I don't understand something in class I ask the teacher. | 4.6 | 3.6 | 4.3 | 4.6 | 0.400 | 0.830 |
| P17 When there is an argument in my family, I observe their reactions. | 5 | 4.3 | 4.3 | 4.6 | 0.482 | 0.823 |
| Q18 When I feel a friend is distant, I ask him/her what is going on. | 4 | 4.3 | 4 | 3.6 | 0.520 | 0.820 |
| P19 When there is a problem at home, I look for information that can help me solve it. | 3.3 | 3.3 | 3.6 | 3.6 | 0.536 | 0.818 |
| P20 When I don't understand a topic in class, I look for readings or videos that explain it. | 3.6 | 3.6 | 3.3 | 3.3 | 0.473 | 0.824 |

| | | | | | | |
|--|---|-----|-----|---|--------------|--------------|
| P22 When a friend has a problem, I look for strategies that might help him or her. | 4 | 3.6 | 3.6 | 3 | 0.567 | 0.815 |
|--|---|-----|-----|---|--------------|--------------|

Table 3 shows the items (10 items) of the dimension Impotence, with a Cronbach's Alpha 0.820. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the

corrected item-total correlation and Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 50.

Table 3. Powerlessness Dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|--|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| Q26 When I have a problem with a subject, it interferes with my other classes. | 4.3 | 4.3 | 4 | 4.3 | 0.416 | 0.812 |
| Q27 When there is a problem in my family I don't know how to react. | 3.3 | 3.6 | 3.3 | 3.3 | 0.525 | 0.802 |
| P28 When I have a problem with my friends, I feel overwhelmed. | 5 | 4.6 | 4.6 | 4.3 | 0.537 | 0.800 |
| Q29 When I struggle to understand a subject in one subject, I stop understanding the rest. | 4.6 | 4.6 | 4.6 | 4.6 | 0.607 | 0.793 |
| Q30 When I have a problem with my friends, I prefer to solve it on my own. | 4 | 4 | 4.3 | 3.6 | 0.336 | 0.820 |
| P31 When my friends have a problem, I prefer to let them solve it. | 4 | 4.3 | 4 | 4 | 0.128 | 0.837 |
| P32 When I have difficulty with a subject it makes me feel incapable. | 3.6 | 4.3 | 4 | 3.6 | 0.610 | 0.792 |
| Q33 When I have a family problem I feel tired. | 4.6 | 4.3 | 4.3 | 4 | 0.605 | 0.792 |

| | | | | | | |
|---|-----|-----|-----|-----|--------------|--------------|
| P34 When I have a family problem I feel unable to solve it. | 4 | 4.3 | 4 | 4 | 0.680 | 0.785 |
| Q35 When I fight with my friends, I feel that everything in my life is wrong. | 4.6 | 4 | 4.3 | 3.6 | 0.554 | 0.798 |

Table 4 shows the items (10 items) of the Escape dimension, with a Cronbach's Alpha 0.794. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the corrected item-total

correlation and Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 50.

Table 4. Escape Dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|--|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| Q36 When there is a problem in my family I prefer to be absent. | 5 | 4.6 | 4.3 | 4 | 0.592 | 0.759 |
| Q37 When I have a problem with my family, I prefer not to talk to them. | 4 | 4 | 4 | 3.6 | 0.581 | 0.761 |
| Q38 When there is a problem with my friends, I avoid thinking about it. | 4.3 | 4.3 | 4 | 4 | 0.325 | 0.791 |
| P39 When I have difficulty with a subject, I prefer to distract myself during class. | 4.3 | 4.3 | 4.3 | 4.3 | 0.534 | 0.767 |
| P40 When I am doing poorly in a subject I prefer to stop attending classes. | 4.6 | 4.6 | 4.3 | 4 | 0.552 | 0.767 |
| Q41 When there is a problem with my friends, I think about it all the time. | 5 | 4.6 | 4.6 | 4.6 | 0.266 | 0.800 |
| P42 When there is a family problem, I prefer to think about other things. | 4.3 | 4.3 | 4 | 4 | 0.371 | 0.787 |

| | | | | | | |
|---|-----|-----|---|-----|--------------|--------------|
| Q43 When I have problems with a subject I ignore the problem. | 4 | 4 | 4 | 3.6 | 0.489 | 0.773 |
| P44 When I have a problem at home, I avoid thinking about it. | 4.3 | 4.3 | 4 | 3.6 | 0.449 | 0.778 |
| P45 I am absent from school when I miss homework. | 3.6 | 4 | 4 | 3.6 | 0.509 | 0.772 |

Table 5 shows the items (8 items) of the Self-sufficiency dimension, with a Cronbach's Alpha 0.643. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the corrected item-total correlation and

Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 40, the items P48, P51, P56, P57 and P58 are inverted prior to the sum of values.

Table 5. Self-sufficiency dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|--|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| Q48 When I have a bad day at school, I get upset with my family. | 4.3 | 4 | 4.3 | 4 | 0.314 | 0.618 |
| P50 When I feel sad I tell my friends about my emotions. | 4.3 | 4.6 | 4.6 | 4 | 0.561 | 0.574 |
| P51 When I am upset I break things. | 4.3 | 4.3 | 4.3 | 4.3 | 0.099 | 0.664 |
| P53 When I feel happy I express it with my friends. | 4.6 | 4.6 | 4.3 | 4 | 0.351 | 0.608 |
| Q56 My friends know when I am having a bad day without telling them. | 4.6 | 4.6 | 4.3 | 4.6 | 0.468 | 0.573 |
| Q57 My peers say that I am explosive. | 4.3 | 4.3 | 4.6 | 4 | 0.272 | 0.627 |
| Q58 My family knows when I am having a bad day without telling them. | 4 | 4 | 3.6 | 3.6 | 0.22 | 0.650 |
| P59 When I have a problem I seek support from my friends. | 4 | 4.3 | 4.3 | 4 | 0.523 | 0.562 |

Table 6 shows the items (11 items) of the Seeking Support dimension, with a Cronbach's Alpha 0.881. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the

corrected item-total correlation and the Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 55.

Table 6. Dimension Search for support.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|---|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| P60 When I don't understand something at school, I seek support from my teachers. | 4.6 | 4.6 | 5 | 5 | 0.568 | 0.873 |
| P61 When I have a problem I look to my friends to make me feel better. | 3.3 | 4 | 4.3 | 4.3 | 0.609 | 0.870 |
| Q62 When I have a problem I look to my family for support. | 4.6 | 4.3 | 4.6 | 4 | 0.727 | 0.861 |
| P63 When I have difficulty with a subject at school, I ask my teachers how they would solve it. | 4.6 | 4.3 | 4.6 | 4.6 | 0.624 | 0.870 |
| P64 When I have a problem I look to my family to make me feel better. | 4 | 4.3 | 3.3 | 4.3 | 0.699 | 0.864 |
| Q65 When I have a problem I ask my friends what they would do in my place. | 4 | 4.3 | 4 | 4.3 | 0.652 | 0.868 |
| Q66 When I have a problem I ask my family how they would solve it. | 4.3 | 4.3 | 4 | 4 | 0.761 | 0.859 |
| P67 When I have a problem I seek support from my teachers. | 4.3 | 4.3 | 4 | 3.6 | 0.431 | 0.880 |
| P68 When I fight with my family I talk about it with my friends. | 4 | 4 | 3.6 | 3.3 | 0.356 | 0.887 |

| | | | | | | |
|---|-----|-----|-----|-----|--------------|--------------|
| P69 When I have a problem with my teachers, I ask my family for help. | 4.3 | 4 | 4 | 3.6 | 0.642 | 0.868 |
| P70 When I have a problem with my family, I look to my friends for comfort. | 4.6 | 4.3 | 4.6 | 4.6 | 0.474 | 0.878 |

Table 7 shows the items (9 items) of the Delegating dimension, with a Cronbach's Alpha 0.855. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the

corrected item-total correlation and Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 45.

Table 7. Delegating Dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|--|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| Q72 When I have a problem at school I look to my family to solve it. | 4.6 | 4.6 | 4.3 | 4 | 0.571 | 0.840 |
| P73 When I get upset with my family, what I do is complain. | 4 | 4 | 4 | 3.6 | 0.594 | 0.838 |
| P74 When I argue with a friend, I try to get people to agree with me. | 4 | 4 | 3.6 | 3.3 | 0.612 | 0.836 |
| P75 When I have difficulty with a topic in class, what I do is complain. | 4 | 4 | 3.6 | 3.3 | 0.580 | 0.839 |
| Q76 My friends are responsible for the things that happen to me. | 4.6 | 4.6 | 4.6 | 4.6 | 0.734 | 0.827 |
| Q77 My family is responsible for the things that happen to me. | 4.3 | 4.3 | 4.3 | 4 | 0.590 | 0.838 |
| P78 My family is responsible for solving my problems. | 4 | 3.6 | 3.6 | 3.3 | 0.643 | 0.833 |
| P79 My achievements are due to my friends. | 4.6 | 4.6 | 5 | 5 | 0.465 | 0.850 |

| | | | | | | |
|--|-----|-----|-----|-----|--------------|--------------|
| Q80 The school is responsible for my low grades. | 4.6 | 4.3 | 4.3 | 4.3 | 0.423 | 0.853 |
|--|-----|-----|-----|-----|--------------|--------------|

Table 8 shows the items (11 items) of the Social Isolation dimension, with a Cronbach's alpha 0.900. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the

corrected item-total correlation and Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 55.

Table 8. Social isolation dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|--|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| P82 When I have a bad day at school, I walk away from people. | 4.3 | 4 | 4 | 3.6 | 0.513 | 0.899 |
| P83 When I have problems with a subject I prefer to avoid the teacher. | 5 | 4.3 | 4 | 3.6 | 0.675 | 0.889 |
| P84 If I get upset with a friend, I walk away from him/her. | 3.6 | 3.6 | 3.3 | 3 | 0.664 | 0.890 |
| P85 When I wake up in a bad mood I prefer not to see anyone. | 4.3 | 4.3 | 4 | 3.3 | 0.684 | 0.889 |
| P86 When I fight with a friend, I prefer to lose his or her friendship. | 4.3 | 4 | 4.3 | 4 | 0.658 | 0.890 |
| P87 If I do poorly in a subject and the teacher wants to talk about it, I prefer to avoid him/her. | 4.3 | 4 | 4 | 4 | 0.620 | 0.892 |
| P88 When there is a problem in my family I prefer to be away from home. | 4 | 4.3 | 4.6 | 3.3 | 0.654 | 0.890 |
| P89 When I have problems with my friends, I avoid them for a while. | 4 | 4 | 4 | 3.3 | 0.746 | 0.886 |

| | | | | | | |
|--|-----|---|-----|-----|--------------|--------------|
| P90 When there is a problem at school I feel like I stand still. | 4 | 3 | 3.6 | 3.3 | 0.587 | 0.894 |
| P91 When I have problems with a friend, I hide from him/her for a while. | 4.3 | 4 | 3.6 | 3.3 | 0.640 | 0.891 |
| P92 When there is an argument in my family I feel like I freeze. | 4.3 | 4 | 4.3 | 3.3 | 0.590 | 0.894 |

Table 9 shows the items (10 items) of the Accommodation dimension, with a Cronbach's Alpha 0.635. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the

corrected item-total correlation and Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 50.

Table 9. Accommodation Dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|---|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| Q93 I find it normal to fight with my friends. | 4.3 | 4 | 4 | 3.6 | 0.517 | 0.563 |
| P94 When I argue with my friends, I know they will get over it. | 4.6 | 4.6 | 4.3 | 4 | 0.401 | 0.581 |
| P95 It seems normal to me to fail a subject. | 5 | 5 | 4.6 | 4.3 | 0.286 | 0.608 |
| P96 When there is a problem in my family I prefer to leave home. | 4.6 | 4.6 | 4.3 | 3.6 | 0.240 | 0.619 |
| P97 I accept that I will not always do as well as I want in school. | 4.6 | 4.6 | 4.3 | 4 | 0.180 | 0.630 |
| Q98 Arguments (shouting, swearing) in my family are normal. | 4.6 | 4.6 | 4.3 | 4.3 | 0.394 | 0.583 |
| P99 When I argue with my friends, I distract myself by doing things with my family. | 4.6 | 4.3 | 4.3 | 4 | 0.329 | 0.599 |
| P100 I look for the positive side of family discussions. | 4.6 | 4.6 | 4.3 | 4 | 0.208 | 0.626 |

| | | | | | | |
|---|-----|-----|-----|-----|--------------|--------------|
| P101 When I struggle with a subject in school, I know it will be temporary. | 4.6 | 4.6 | 4.3 | 4 | 0.192 | 0.628 |
| P102 I minimize family problems. | 4.3 | 4.3 | 4 | 3.6 | 0.260 | 0.314 |

Table 10 shows the items (10 items) of the Negotiation dimension, with a Cronbach's Alpha 0.828. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the

corrected item-total correlation and Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 50.

Table 10. Negotiation Dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|--|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| P103 For my family to give me permission I look for something I can do in return. | 4 | 4 | 3.6 | 4 | 0.565 | 0.807 |
| P104 When I do not turn in an activity, I ask the teacher for an extension. | 4.3 | 4.3 | 4 | 3.3 | 0.491 | 0.815 |
| P105 When I get a low grade I tried to convince my teacher to raise points. | 4.3 | 4.3 | 4.3 | 4 | 0.504 | 0.814 |
| P107 For my family to give me permission, I tell them the things I have done well. | 4.6 | 4.6 | 4 | 4.3 | 0.640 | 0.799 |
| P108 When I go out with my friends, I tell them the advantages of the places I want to go. | 4.3 | 4.3 | 4 | 4.3 | 0.588 | 0.805 |
| P109 When I make plans with my friends I am sure that I will get them to do what I want. | 4.6 | 4.6 | 4.6 | 4.6 | 0.525 | 0.812 |
| P110 In team work, I organize the activities. | 4.6 | 4.3 | 4.3 | 4 | 0.485 | 0.816 |

| | | | | | | |
|--|-----|-----|-----|-----|-------|-------|
| P111 When I argue with my family I try to convince them that I am right. | 4.6 | 4.3 | 4.3 | 4.6 | 0.564 | 0.808 |
| P112 When I go out with my friends, we take turns choosing the plan. | 4.3 | 4.3 | 4 | 3.6 | 0.430 | 0.821 |
| P113 negotiation is the best form of organization in school teams. | 4.3 | 4.3 | 4 | 4 | 0.369 | 0.827 |

Table 11 shows the items (10 items) of the Submission dimension, with a Cronbach's Alpha 0.894. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the

corrected item-total correlation and Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 50.

Table 11. Submission Dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|--|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| P114 When there is a conflict at home, it is difficult for me to stop thinking about it. | 4.6 | 4.6 | 4.6 | 4.3 | 0.561 | 0.880 |
| P115 When I argue with my family I replay the situation constantly in my head. | 4 | 4 | 4 | 4.3 | 0.641 | 0.883 |
| P116 When the teacher corrects me on something, I feel useless. | 4.3 | 4.3 | 4.3 | 4.3 | 0.694 | 0.880 |
| P117 When I argue with my friends, I repeat my point of view until they accept it. | 3.3 | 4 | 3.6 | 3.3 | 0.494 | 0.892 |
| P118 When the teacher asks me to participate, I think everyone will make fun of me. | 4.3 | 4.3 | 4 | 3.3 | 0.625 | 0.885 |
| P119 When I have problems with my friends I can't stop thinking about it. | 4.6 | 4.6 | 4.3 | 4 | 0.724 | 0.878 |

| | | | | | | |
|--|-----|-----|-----|-----|--------------|--------------|
| P120 When I argue with my family, I repeat my point of view until they accept it. | 4.6 | 4.6 | 4.3 | 4.6 | 0.520 | 0.891 |
| P121 When the teacher corrects me, I think my classmates will make fun of me. | 4 | 4 | 3.6 | 3.3 | 0.685 | 0.880 |
| P122 When I argue with a friend, I replay the fight in my head. | 3.6 | 4 | 4 | 3.3 | 0.763 | 0.874 |
| P123 After discussing with my family I think about what I could have said differently. | 4.3 | 4 | 4 | 3.6 | 0.652 | 0.883 |

Table 12 shows the items (10 items) of the Opposition dimension, with a Cronbach's Alpha 0.799. The table integrates the evaluation averages by experts (Clarity, Coherence, Scale and Relevance), the

corrected item-total correlation and Cronbach's Alpha of the dimension if the item is eliminated. None of the items was evaluated below 3 (Fair) in its four dimensions. Score per dimension minimum 5 and maximum 50.

Table 12. Opposition dimension.

| Ask | Clarity | Consistency | Scale | Relevance | Correlation element - corrected total | Alpha if the element is removed |
|--|---------|-------------|-------|-----------|---------------------------------------|---------------------------------|
| P124 When I have difficulty with a subject in class, it is the teacher's fault. | 4.6 | 4.3 | 4.3 | 3.6 | 0.433 | 0.786 |
| P125 When I have an argument with my family, they are the ones with the problem. | 3.6 | 3.6 | 3.6 | 3.6 | 0.339 | 0.798 |
| P126 The teacher is to blame for my poor grades. | 4 | 4.3 | 4 | 3.6 | 0.660 | 0.762 |
| P127 Arguments with my friends have come to blows. | 4.3 | 4.3 | 4 | 4 | 0.587 | 0.770 |
| P128 My friends agree with me if I insult them. | 4.3 | 4.3 | 4.3 | 4.3 | 0.490 | 0.780 |

| | | | | | | |
|--|-----|-----|-----|-----|--------------|--------------|
| P129 Arguments in my family have come to blows. | 4.6 | 4.6 | 4 | 3.6 | 0.491 | 0.779 |
| P130 I bully my classmates at school to help me with my homework. | 4.6 | 4.3 | 4.3 | 4.6 | 0.639 | 0.771 |
| P131 When I argue with my friends I impose what I think. | 3.3 | 3.6 | 3.6 | 3.3 | 0.365 | 0.797 |
| P133 When I am denied permission, I still do what I want. | 4 | 4 | 3.3 | 3.3 | 0.478 | 0.781 |
| P134 When there is a conflict between my friends, they are to blame. | 4.3 | 4.3 | 4 | 3.6 | 0.418 | 0.789 |

Discussion and conclusion

The objective of constructing a new scale on Coping Styles in young students was reliable and valid, based on the psychometric properties obtained in the results. Validity was achieved through a panel of experts and reliability was analyzed through the overall Cronbach's Alpha coefficient (0.939) and the method of split halves (0.854); the data report that the Coping Styles scale is valid and reliable. These results support that the questionnaire can be used for research purposes in a population of young high school and university students.

Regarding the theoretical bases, the scale included the twelve dimensions proposed by the Skinner and Zimmer-Gembeck (2009) model, where coping is a multiple individual processes that occurs in family, school and peer contexts, as these create demands, resources, filters and reinforcers to the coping capacities that are being developed. The items included the three contexts in each of the dimensions and general situations in which the adolescent can associate and evaluate situations in which he/she has acted. The model used considers the social context and its

functions as vital in developing coping strategies, which is relevant to this scale considering that it is aimed at adolescents.

A questionnaire of 119 items distributed in 12 dimensions was obtained, with a satisfactory level of reliability in all its variables. The instrument is self-administered and the response form consists of a Likert scale with 5 response options, which makes its application and interpretation simple and quick.

Among the limitations of the study are that it is not a representative sample of the population, and the data cannot be generalized since the sample was composed of young high school and higher education students residing in Chiapas, Mexico.

References

1. Benjet C., G. Borges, ME Medina-Mora (2010) Adversidad infantil crónica y aparición de psicopatología durante tres etapas de la vida: Infancia, adolescencia y adultez. *J Psychiatr Res.*, 44, págs. 732 - 740

2. Brazendale, K., Beets, M. W., Weaver, R. G., Pate, R. R., Turner-McGrievy, G. M., Kaczynski, A. T., Chandler, J. L., Bohner, A. y von Hippel, P. T. (2017). Understanding differences between summer vs. school obesogenic behaviors of children: The structured days hypothesis. *International Journal of Behavioral Nutrition and Physical Activity*, 14(1). <https://doi.org/s12966-017-0555-2>
3. Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N. y Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*, 395(10227), 912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
4. Casullo, M. & Castro, A. (2002). Patrones de personalidad, síndromes clínicos y bienestar psicológico en adolescentes. *Revista de Psicopatología y Psicología Clínica*, 7 (2). Revisado el 11 de marzo de 2016. Recuperado en: [http://aepcp.net/arc/05.2002\(2\).Casullo-Castro.pdf](http://aepcp.net/arc/05.2002(2).Casullo-Castro.pdf)
5. Cicchetti, D. (2006). Development and Psychopathology. En D. Cicchetti (Ed.), *Developmental Psychopathology (2nd ed.): Theory and Method (Vol. 1)* (pp. 1-23). New York: Wiley.
6. Cedo, A. (2016) Adolescencia y control de estrés a través de estilos de afrontamiento positivo, una propuesta de intervención. Facultad de Psicología, UNAM.
7. Duan, G. Zhu (2020) Psychological interventions for people affected by the COVID-19 epidemic. *Lancet Psychiatry* 7.
8. Forns, M., Abad, J. y Kirchner, T. (2012). Internalizing and externalizing problems. En R. Levesque (Ed.), *Encyclopedia of Adolescence* (p. 1464-1469). Springer US. http://dx.doi.org/10.1007/978-1-4419-1695-2_261
9. González, R., Montoya, I., Casullo, M. M. & Bernabéu, J. (2002). Relación entre estilos y estrategias de afrontamiento y bienestar psicológico en adolescentes. *Psicothema*. 14 (2). Revisado el 11 de marzo de 2016. Recuperado en: <http://www.scielo.org.co/pdf/rllcs/v11n1/v11n1a05.pdf>.
10. Gutiérrez, M. & Ángeles, M. (2012). *Estrés organizacional*. México: Trillas.
11. Lazarus, R.S. & Folkman, S. (1984). *Stress, appraisal, and coping*. Nueva York: Springer. (Traducción, Barcelona, Martínez Roca, 1986).
12. Masten, A. S., Burt, K. y Coatsworth, J. D. (2006). Competence and Psychopathology. En D. Cicchetti y D. Cohen (Eds.), *Developmental Psychopathology, Vol 3: Risk, Disorder and Psychopathology (2nd ed., pp. 696-738)*. New York: Wiley.
13. Organización Mundial de la Salud. Pandemia de enfermedad por coronavirus (COVID-19). Ginebra: OMS; 2020. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

- [//www.who.int/emergencias/diseases/novel-coronavirus-2019](http://www.who.int/emergencias/diseases/novel-coronavirus-2019).
14. Otero, L. (2011). Estrés laboral y Burnout en profesores de enseñanza secundaria. Madrid: Díaz de Santos.
 15. Sandín, B. & Chorot, P. (2002). Cuestionario de afrontamiento del estrés (cae): desarrollo y validación preliminar. Universidad Nacional de Educación a Distancia. Revista de Psicopatología Clínica Vol. 8. Revisado el 9 de marzo de 2016.
 16. Sprang, G. y Silman, M. (2013). Posttraumatic stress disorder in parents and youth after health-related disasters. *Disaster Medicine and Public Health Preparedness*, 7(1), 105-110.
<https://doi.org/10.1017/dmp.2013.22>.
 17. Vázquez, C., Crespo, M. y Ring, J. (2003). Clínica en Psiquiatría y Psicología, capítulo 31: Estrategias de afrontamiento. Barcelona: Elsevier-Masson.
http://www.psicosocial.net/historico/index.php?option=com_docman&view=download&alias=94-estrategias-de-afrontamiento&category_slug=trauma-duelo-y-culpa&Itemid=100225.
 18. Wang, G., Zhang, Y., Zhao, J., Zhang, J. y Jiang, F. (2020). Mitigate the effects of home confinement on children during the COVID-19 outbreak. *The Lancet*, 395(10228), 945-947.
[https://doi.org/10.1016/S0140-6736\(20\)30547-X](https://doi.org/10.1016/S0140-6736(20)30547-X).
 19. Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S. y Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health*, 17(5), 1729.
<https://doi.org/10.3390/ijerph17051729>.