

The background of the cover is a blurred photograph of business professionals in a hallway. The floor is marked with the word 'STAR' and the year '2019' in a light, glowing font. The overall color palette is dominated by warm, golden-yellow and dark grey tones, creating a sense of motion and professional atmosphere.

Stress and Anxiety

Contributions of the STAR Award Winners

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**STRESS, COPING AND RESILIENCE IN ADOLESCENTS:
GROUPS RISK COMPARISON**

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Abstract

The main purpose of this study was to examine the relationship between stressful life events and coping strategies associated with emotional risk and resilience in adolescents at school. The total sample included 473 adolescents aged 12 to 16 years from a public school in Mexico City. All participants completed the Life-Events Questionnaire and the Coping Questionnaire for Adolescents. Afterwards, 332 adolescents were classified into three stress risk groups: no risk, high distress and resilient. Results indicated that students with high distress manifested less adaptation to stressful life events and were at higher emotional risk as their main coping strategies were dysfunctional, such as obsessive thoughts and hopelessness, avoidance and self-injury. In contrast, resilient adolescents showed better adaptation to stressful life events as their main coping strategies were functional, such as seeking guidance and finding solutions. Gender differences show that girls are more at emotional risk than boys as they perceive more stressful life events in some areas and use more dysfunctional coping strategies in their problem-solving approach.

Introduction

Over the past decades, research has addressed factors that increase the risk for social, mental and health problems among adolescents. Findings from different studies stress the relationship between adversity and adaptation in youth (Bradshaw, 1990; Brennan, Le Brocque, & Hammen, 2003; Fraser, Kirby, & Smokowski, 2004; Garmezy, 1988) and its consequences in adulthood considering that human development is a continuous process with critical periods in which failure or success in adaptation has strong influence (Achenbach, 1982). In this regard, adolescence is a particular developmental stage that requires considerable adjustment. Every adolescent has to deal with biological and cognitive changes, and with a series of complex and interrelated socio-psychological tasks such as dramatic shifts in relationships with family, friends, and peers (Coleman & Haggell, 2007).

The occurrence of stressful circumstances can result in difficulties that might exceed the coping skills of this population increasing their vulnerability to maladjustment, and they can even alter adolescents's developmental trajectory (Compas, 1987; Fergusson, Beautrais, &

Horwood, 2003; Obradovic, Burt, & Masten, 2006). It has also emerged that some adolescents exposed to major stressors develop emotional/health problems whereas others don't (Garnezy, 1991; 1993; Luthar, 2006; Rew & Horner, 2003). Furthermore, studies revealed that there are several ways to cope with stress, considering that it is the appraisal of potential stressors which determines the level of distress and the coping strategy displayed by youngsters (Frydenberg, 2004; Lazarus & Folkman, 1984; Seiffge-Krenke, 2009). While it is impossible to prevent adolescents from being exposed to threats, it is possible and extremely relevant to identify their ways of coping in order to promote positive adaptation to adverse life circumstances as a powerful mental health prevention.

Coping and resilience in adolescents

With regard to adolescents' coping strategies this study focuses on the transactional model of stress and coping (Lazarus & Folkman, 1987) which states that coping includes innumerable ways of dealing with diverse person-environment transactions. Coping is conceptualized as a process rather than an individual trait, and the person's beliefs, resources, and environmental constraints strongly influence that process. Thus, personal resources are significant factors influencing patterns of development (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Frydenberg, 2009, Paulina & Petra, in press). Therefore, based on a development perspective, Seiffge-Krenke (2011) establishes two styles of coping: functional and dysfunctional coping. The former refers to the efforts made to manage the problem (in an active or internal way) and the latter to avoid it.

Focusing on strengths and adaptive processes the study of resilience offers a positive alternative to analyze developmental deficits and mental health problems in adolescents. According to Masten (2006; 2014) resilience has been defined as positive adaptation in the context of risk or adversity and encompasses a wide range of phenomena, including the capacity for doing well under adversity, the achievement of good outcomes among people at high risk for maladaptation, and the processes of coping with challenges. Rutter (2006; 2012) conceptualized resilience as a reduced vulnerability to environmental risk experiences and the relatively successful management of stress. He also pointed out that it depends on individual experiences with extreme stress.

Resilience has been studied from numerous perspectives. We consider the concept within the framework of developmental psychopathology (DP) initially defined as the study of origins and individual patterns of behavioral maladaptation (Sroufe & Rutter, 1984). Developmental psychopathology is an integrative and multidisciplinary approach to both, mental health theory and practice that emphasizes the full range of individual differences in adaptation and development over the life span (Cicchetti, 2013; Rutter, 2013; Sroufe, 2013). In order to identify resilience it is important to consider assessments on both, exposure to adversity (stressful life events) and how well a person is doing in response to the occurrence of adversity (adaptation) (Garnezy, 1991; Rutter 2006). As adaptation is the product of current circumstances, prior experiences and adjustments, maladaptation may be best understood in terms of potential and compensatory risk / protective factors (Rutter 2006; 2013) as well as vulnerability associated with emotional risk.

Although most adolescents are in good mental health some are exposed to different risk factors that might increase the chance or maintenance of harm (Fraser, Kirby, & Smokowski,

2003; Arenas, Lucio, & Forn and range from biological o Masten, 2001). Hence, stressf adolescents might be importar

Currently, cumulative i economical, educational and (Arenas in press, Medina-M Navarrete, 2011) increasing The purpose of this study is strategies linked to risk or res

Design

A cross-sectional design through a unique temporal po

Participants

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Instruments

Stressful life events were 2003), a self-report measure you do when any of these perceived normative and no School, Achievement and Questions are answered on a good, b) it happened to me This scale indicates a strong

Coping strategies. Cop Adolescents (Lucio, Duran, what adolescents do when 1 (1993) questionnaire: schoo are answered on a 5-point L less I do that, 4) I often do Cronbach's alpha values be

2003; Arenas, Lucio, & Forns, 2012). Risk factors are predictors of undesirable outcomes, and range from biological complications to environmental conditions (Forns et al., 2015; Masten, 2001). Hence, stressful environmental conditions as well as individual differences of adolescents might be important in the study of resilience.

Currently, cumulative and rapid transitions are taking place in Mexico due to economical, educational and social factors and have wreaked havoc among Mexican youths (Arenas in press, Medina-Mora, Borges-Guimaraes, Lara et al. 2005; Pelling & Manuel-Navarrete, 2011) increasing the vulnerability for behavioural and mental health problems. The purpose of this study is to identify the relation between stressful life events and coping strategies linked to risk or resilience in Mexican adolescents.

Method

Design

A cross-sectional design in this study was used. Description of population is made through a unique temporal point (Montero & Leon, 2007).

Participants

An incidental sample of 473 adolescents (49.7% boys and 50.3% girls) aged 12 to 16 years ($M = 12.97$; $SD = .77$) from a public school in Mexico City voluntarily participated in the study. After being screened a subsample of 332 students were classified into three risk groups according to the level of reported stress: no risk ($n=120$, 25.4%), high distress ($n=117$, 24.7%) and resilient ($n=95$, 20.1%). Adolescents without any stressful events were classified as no risk. High distress includes three or more stressful life events and dysfunctional coping strategies, resilient adolescents indicated three or more stressful life events and functional coping strategies. The rest of the sample ($n=141$, 29.8%) could not be classified and were eliminated.

Instruments

Stressful life events were measured by the Life-Events Questionnaire (Lucio & Duran, 2003), a self-report measure composed of 129 items and one open-ended question: "What did you do when any of these bad situations happened to you?". This instrument evaluates perceived normative and non-normative events in seven areas of adolescent's life: Family, School, Achievement and Failure, Social, Personal, Behavior Problems, and Health. Questions are answered on a 4-point Likert scale ranging from a) it happened to me and was good, b) it happened to me and was bad, and c) it happened to me and was not important. This scale indicates a strong reliability of KR-20 .89.

Coping strategies. Coping strategies were evaluated using the Coping Scale for Adolescents (Lucio, Duran, Heredia, & Villarruel, 2014). It consists of 45 items assessing what adolescents do when facing problems in eight domains according to Seiffge-Krenke's (1993) questionnaire: school, parents, peers, leisure, partner, self, job and future. Questions are answered on a 5-point Likert scale: 1) I never do that, 2) Sometimes I do that, 3) More or less I do that, 4) I often do that, 5) I always do that. It has internal consistency reporting Cronbach's alpha values between .59 and .89 (Lucio, Duran, Barcelata & Romero, 2016).

Procedure

The school principal provided support to conduct this study and agreed on written consents to be sent to families via students. Parental agreement was obtained and students themselves were asked to provide informed consent before starting the study. Seven clinical psychologists and three psychology students administered the instruments to students in groups consisting of 30 to 35 students during class time.

Analysis

In a comparative study the relation between stressful life events and coping strategies was analyzed by examining the differences between groups with different levels of risk. A Chi-square test was conducted to test the differences between the risk groups regarding stressful life events. Finally, an Analysis of Variance (ANOVA) was carried out to test differences regarding stressful life events and coping strategies between the risk groups; Bonferroni Post Hoc test values are reported.

Results

The number of stressful life events reported by adolescents is presented in Table 1; to check the difference in stressful life events and gender a *t*-test was conducted. With regard to reported stressful life domains, boys and girls differed only with respect to social events, whereby girls perceived these as more stressful (boys $M=50.47$, $SD=9.01$; girls $M=53.00$, $SD=10.70$; $t=2.49$; $p=0.04$)

Table 1: Stressful life events in the risk group

Stressful Areas	Mean	SD
Family	56.6	16.2
Social	52.4	12.2
Achievement and failure	51.9	10.8
Health	51.0	12.7
Personal	52.8	12.7
Behavior problems	51.8	13.5
School	50.9	10.0

With respect to gender differences and coping strategies a *t*-test was conducted (Table 2).

Girls were more likely to seek help from their circle of friends, while boys were more likely to seek comfort in religion.

Table 2: Significant differences

Distraction and seeking support from friends
Religion
* $p < .05$

According to the risk group in each group.

Table 3: Distribution by level

Risk Level	N
No Risk	72
High Distress	47
Resilient	41
Total	160

*Note ($\chi^2=11.39$; $df=2$; $p=.003$)

ANOVA shows differences between the risk groups presented in Table 3.

Table 4: Coping strategies

Coping strategies
Positive Thinking and Finding Solutions
Physiological Responses
Obsessive thoughts & Hopelessness
Withdrawal
Seeking support in the family
Distraction & seeking support from friends
Helplessness and self-injurious behaviour
Religion

Note: *** $p \leq .001$; * $p \leq .05$

Table 2: Significant differences in coping strategies for boys and girls

	Boys		Girls		<i>t</i>
	Mean	SD	Mean	SD	
Distraction and seeking support from friends	45.64	11.20	48.51	9.99	-2.46*
Religion	53.67	12.12	50.43	10.57	2.94*

**p* < .05

According to the risk groups classification Table 3 shows the distribution of the sample in each group.

Table 3: Distribution by levels of risk for sex (n=332)

Risk Level	Male		Female	
	N	Valid Percent	N	Valid Percent
No Risk	72	45	48	27.9
High Distress	47	29	70	40.6
Resilient	41	26	54	31.3
Total	160	100	172	100

*Note ($\chi^2=11.39$; *df*=2; *p*=.010)

ANOVA shows differences regarding stressful life events and coping strategies between the risk groups presented in Table 4 followed by its significant statistical difference in Table 5.

Table 4: Coping strategies differences between risk levels

Coping strategies	No Risk		Risk Groups High Distress		Resilient		F
	M	SD	M	SD	M	SD	
Positive Thinking and Finding Solutions	48.39	10.84	44.54	10.29	47.09	10.41	3.11*
Physiological Responses	49.34	10.09	55.44	12.06	51.08	9.20	7.21**
Obsessive thoughts & Hopelessness	48.32	11.49	55.17	11.26	50.76	8.91	8.75**
Withdrawal	52.81	12.94	55.70	11.28	52.17	11.24	2.26
Seeking support in the family	51.26	9.76	46.27	8.95	49.53	9.85	8.60**
Distraction & seeking support from friends	47.11	11.39	45.90	10.32	48.65	10.05	1.23
Helplessness and self-injurious behaviour	54.02	16.04	58.54	15.09	51.40	11.71	5.54**
Religion	52.85	11.97	51.00	10.54	52.13	11.85	2.43

Note: ****p* < .001; **p* < .05

Functional coping strategies were more often shown in the 'no-risk'-group, whereas dysfunctional strategies were found in the 'high-risk'-group. The group of resilient adolescents mostly occupied a middle position.

Table 5: Multiple comparisons between groups with significant statistical difference (Bonferroni)

Dependent Variable	Comparison groups		Difference of means	Confidence Interval (25%)	
				Low	Up
Positive Thinking and Finding Solutions	High Distress	No Risk	-3.84*	-7.34	-.37
		Resilient	-2.55	-6.25	1.15
Physiological Responses	High Distress	No Risk	6.10*	2.54	9.67
		Resilient	4.35*	.57	8.14
Obsessive thoughts & hopelessness	High Distress	No Risk	6.85*	3.27	10.44
		Resilient	4.41*	.60	8.23
Seeking support in the family	High Distress	No Risk	-4.99*	-8.21	-1.77
		Resilient	-3.26	-6.68	.15
Helplessness and self-injurious behaviour	High Distress	No Risk	4.52	-.23	9.28
		Resilient	7.14*	2.09	12.19

Note: * $p \leq .05$

Discussion

The aim of this study was to examine stressful life events and coping strategies among adolescents aged 12 to 16 years in order to analyze their emotional risk and resilience. Our results indicate that the main stressful areas among the risk group were family, personal and social events. Gender differences were reported only for the social area suggesting that girls perceives more distress than boys. According to gender differences in groups at risk it appeared that girls experienced a higher levels of stress, especially regarding interpersonal stress. These results are in line with previous findings showing increased response to interpersonal stressful events in girls (Spirito, Stark Grace et al. 1991; Rudolph, 2002). It also turned out that boys and girls copes in different ways with stressful events: girls tends to use distraction and seeking support from friends whereas boys used more strategies related to religiosity.

According to the coping strategies used within the risk groups there are differences between the high distress and the no risk groups with respect to functional coping strategies such as positive thinking, finding solutions, and seeking support in the family. In contrast to the resilient group the highly stressed groups used more dysfunctional coping strategies such as helplessness and self-injury behaviours. All three groups showed differences in strategies such as physiological responses, obsessive thoughts and hopelessness. Neither distraction nor family support seeking differed among high risk and resilient adolescents. This might be due

to the specific personal areas where it is normal to spend a lot of time that adolescents spend many hours working in the far away city or high levels as well as their coping strategies in risk populations (Forns, Kirkegaard, 2012).

The perception of stress and emotional distress in adolescents (Tellegen, 2012; Masten 2001) competences is a worthwhile goal from mal-adjustment but enhanced resilience.

With respect to the clinical implications (2013) about the need of professional help the differences in coping strategies and injurious behaviour in all the intervention strategies to prevent self-harm is particularly important because (Surrence, Miranda, Marroqui, 2012) were particularly important in clinical but social and community settings among adolescents but also for prevention should learn different ways of coping (Barr & Metzger, 2006). The variable-focused methods in clinical means working with their parents. This can help not only to extend the community (Pérez-Ramos, 2012) responses depends on the nature of the problem.

Finally, the Life-Event Scale provides information about how adolescents perceive the validity (Tovar, 2007) and in the developmental psychology of adolescents the instrument used to assess how they are in trouble. However, coping is not static. Instead, they change their resources at hand. As other coping strategies highly variable in adolescents (Avison, 2010). This is a list of coping strategies they are not sensible to these

-risk'-group, whereas
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statistical difference

Confidence Interval
(25%)

Low	Up
-7.34	-.37
-6.25	1.15
2.54	9.67
.57	8.14
3.27	10.44
.60	8.23
-8.21	-1.77
-6.68	.15
-.23	9.28
2.09	12.19

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to the specific personal conditions in our sample. Most adolescents stem from urban areas where it is normal to spend less time with the family. Urban live conditions in Mexico imply that adolescents spend many hours alone without parental supervision because parents are at work in the far away city or on agricultural work. Thus, in city adolescents stress and risk levels as well as their coping strategies can complement to what other studies have found in risk populations (Forns, Kirchner et al., 2015).

The perception of stressful life events over the last year can be used as an indicator of emotional distress in adolescents and is similar to results from other studies (Masten & Tellegen, 2012; Masten 2014). These results stresses that the promotion of help seeking competences is a worthwhile intervention for adolescents at risk as it might not protect them from mal-adjustment but enhance their personal resources.

With respect to the clinical implications of these results and in accordance with Rutter (2013) about the need of prevention and intervention considering culture and social context, the differences in coping with obsessive thoughts, helplessness, helplessness, and self-injurious behaviour in all three groups underlines the importance to develop and implement intervention strategies to prevent behaviour and health problems among this population. This is particularly important because we know that cognitive vulnerabilities like rumination (Surrence, Miranda, Marroquin et al., 2009) and cognitive inflexibility (Miranda, Gallagher, Bauchner et al., 2012) were found to predict suicidal ideation in later years. Hence, not only clinical but social and community interventions strategies are of evident concern not only among adolescents but also for their context. Parents, teachers and other community members should learn different ways to approach and interact with youngsters (Smetana, Campione-Barr & Metzger, 2006). This also emphasizes the relevance of considering person-and variable-focused methods in the study of stress and resilience. For children and adolescents it means working with their parents and family members as well as with school authorities. This can help not only to explain risk circumstances, but also to promote competence of the community (Pérez-Ramos, 2017). As Compas (1998) pointed out the efficacy of coping responses depends on the nature of the response and the context in which it is used.

Finally, the Life-Events Questionnaire (Lucio & Duran, 2003) provides useful information about how adolescents cope with their stressful live events. It has concurrent validity (Tovar, 2007) and is also useful for screening risk and no risk groups, according to the developmental psychopathology approach. With regard to coping assessment in adolescents the instrument was helpful to identify the main strategies adolescents use when they are in trouble. However, it should be underlined that adolescents' coping strategies are not static. Instead, they change according to the environmental situation and the personal resources at hand. As other studies have already reported resilient adolescents use coping strategies highly variable in order to constantly adapt to their current live time situation (Avison, 2010). This is a limitation that must be considered in the use of the instruments, as they are not sensible to these changes.

Conclusions

The current study provided evidence for functional and dysfunctional coping patterns in Mexican adolescents. Results emphasize the need of implementing primary preventive programs in accordance to personal factors such as coping strategies and gender in order to improve adolescents' general well-being and mental health potential.

Findings of this study are limited to the sample and the cross-sectional self-report data. Therefore, no causal direction can be inferred. Furthermore, another comparison variable must be considered for future studies, as suicidal risk or violence in the family/community context.

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This book celebrates the 40th anniversary of the STAR Society – the enduring legacy of our esteemed colleagues Charles Spielberger, Henk Van Der Ploeg, and Ralf Schwarzer who conceptualised the idea for a society focused on the measure of stress. Since that time, the focus has moved on from measurement alone, to include stress, coping and resilience: theory, research, and practice.

Exactly 20 years after its inception, we initiated the annual STAR Lifetime Career Award to members with a long and distinguished history of scientific contributions in the field of stress, anxiety and coping. Around the same time, the STAR Early Career Award was established to honour researchers achievements in the science of stress research within the first five years post their doctorate. Last, but not least STAR society gives a STAR Student Development Award to a student for the best paper on stress, anxiety and coping in theory, practice or research in the previous year.

We invited all past award winners to contribute to this book which has yielded an exciting overview of the work of the individual researchers and their current research focus. We thank those who have found the time to contribute to this book.

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