

Association between attachment and suicidal risk in Colombian adolescent students

Asociación entre apego y riesgo suicida en adolescentes escolarizados de Colombia

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Received: 19-11-2018; Approved: 11-03-2019

Abstract

Attachment is considered an important element in mental health, however, the relationship between attachment dimensions and suicidal risk has been little studied. **Objective:** To establish the association between trust, communication, and alienation and suicide risk in Colombian school adolescents. **Subjects and Method:** A cross-sectional observational study with an analytical component was designed in a randomized sample of 399 school adolescents ($n = 1,901$), according to a 30% prevalence of high suicide risk, members of the official educational institutions of Santa Marta (Colombia), the commune with the highest index of unsatisfied basic needs. Participants completed the Armsden & Greenberg attachment inventory and the Plutchik suicide risk scale, both validated locally. Reliability and association tests were calculated. **Results:** Adolescents were 339 adolescents between 13 and 19 years of age ($M = 15.7$, $SD = 1.1$), 57.8% were women. 59.9% of adolescents showed low trust in the mother, 57.2% low communication with the mother, 54.9% low alienation with the mother, 46.3%, low trust in the father, 49% low communication with the father, 48.7% low alienation with the father, and 28.6% high suicide risk. There was an association (adjusted) between high suicide risk and trust in the mother ($OR = 2.00$, 95%CI 1.12-3.57), communication with the mother ($OR = 3.80$, 95%CI 2.13-6.75), trust in the father ($OR = 2.39$, 95%CI 1.41-4.03), and communication with the father ($OR = 2.01$, 95%CI 1.19-3.37). **Conclusions:** Low trust and low communication with mother and father are risk factors for high suicide risk in Colombian school adolescents. Further research on this association in other populations is needed, as well as to consider other mediating factors.

Keywords:

Suicide; attachment; adolescents; cross-sectional studies

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How to cite this article: Rev Chil Pediatr. 2019;90(4):392-398 DOI: 10.32641/rchped.v90i4.985

Introduction

Suicide is a global public health problem, especially for young people¹. In Colombia, 19,977 suicide cases were recorded between 2008 and 2017 at all ages. For example, 2,571 cases were reported in 2017; out of these, 415 cases were persons aged 15-19, representing a 5.0% increase compared to 2016². Although there are global protocols for school, community and primary care intervention, a better understanding of the factors associated with the prevention of suicidal behavior in adolescents is needed³.

Suicide in adolescents is associated with factors related to psychological, cognitive, personality, social, and family resources⁴. Suicidal risk is recognized as the set of factors that multiply the risk of committing suicide⁵. Empirical studies are limited in establishing the association between suicidal risk and the originally theorized dimensions of attachment, trust, communication, and alienation⁶⁻⁹. However, several studies explored the association between different dimensions theorized for attachment with specific mental disorders such as personality disorders, eating disorders, obsessive-compulsive disorder, post-traumatic stress disorders, and self-injurious behaviors, non-suicidal self-injuries, and suicide attempts¹⁰.

In current psychology, theories of development position attachment as an innate pattern, fundamental for the survival of human beings and for the organization of secure basic behaviors that are consolidated in the interaction with significant persons, such as parents¹¹. Children with safe behaviors can explore, learn to regulate stress levels, and adults will be more likely to establish safer relationships^{12,13}. According to this model, attachment is positively established in a secure style and negatively in insecure-ambivalent and insecure-avoidant styles¹².

Attachment bonds can predict in high proportion the positive evaluation of stress experiences, the implementation of better strategies to face stressful events, well-being, psychological adjustment, and mental health in general¹³⁻¹⁵. Empirical studies show that insecure attachment styles -ambivalent and avoidant- are associated with suicidal ideation⁵ and suicide attempts^{8,9}.

The attachment styles assessment depends on combinations in dimensions such as trust, communication, and alienation from the parent or caregiver who represents these figures and even peers¹⁶. Trust appears in the relationship of understanding and respect; communication appears related to the availability and quality of verbal communication; and alienation related to isolation, resentment, or hatred towards one of the figures and preferential inclination towards the other¹⁷.

Studies show divergent associations between trust,

communication and alienation, and suicidal behaviors in adolescents. Some authors reported a significant association between trust and communication with parents and suicidal ideation or self-injurious suicidal or non-suicidal behaviors¹⁸⁻²⁰, however, others found independence between these variables^{20,21}.

Nature is different in forms of suicidal behavior²², therefore, the study of the attachment dimensions and the suicide risk is relevant in the face of scarce empirical evidence. It is also necessary to recognize this association in the Colombian context, a non-clinical adolescent population with particular social, economic, cultural, and historical characteristics.

The objective of this research was to establish the association between attachment dimensions and high suicidal risk among school adolescents in a city in Colombia. Trust and communication with parents were expected to be associated with low suicidal risk and alienation with high suicidal risk.

Subjects and Method

Observational cross-sectional study with analytical component²³.

The population was made up of 1901 school adolescents who attend to the official educational institutions of the Santa Marta commune, Colombia. This commune is among the three with the highest unsatisfied basic needs index. The calculated sample was 399 participants, for a 30% expected prevalence of high suicide risk, a 5% error margin, a 5% alpha error, and 80% beta error. This sample size included a 20% replacement for losses. Participants were randomly selected from the ninth, tenth, and eleventh grades of each institution. In the same way, this sample size would allow for associations and adjustments if necessary. Students who reported having a paternal or maternal figure, or someone else playing the role of caregiver were included.

The Plutchik⁵ Suicide Risk Scale adapted for Spain by Rubio, Montero, Jáuregui, Villanueva, Casado, Marín, & Santo Domingo was used²⁴. This instrument has 15 items with dichotomous questions (yes or no). The scale investigates factors related to the suicide risk such as previous self-injury attempts, intensity of the current ideation, depression, hopelessness, and others. The suicidal risk would indicate the presence of psychosocial factors that can precipitate suicidal behavior in adolescents. The scale has internal consistency between 0.75 and 0.89 in different studies²⁵. Plutchik suicide risk scale in this study presented Kuder Richardson's reliability of 0.77.

For the attachment dimensions measurement, we used the Inventory of Parents and Peers Attachment

(IPPA) by Armsden & Greenberg¹⁵ adapted for Colombia by Pardo, Pineda, Carrillo & Castro¹⁴. This instrument was designed to assess the quality of perceived attachment with father-mother-peers in 25 items for each attachment figure, with Likert-scale response options graded from one (*never or seldom*) to five (*usually or always*). Subscales for father and mother were used in this study. Each subscale is composed of three dimensions: trust, communication, and alienation. For attachment to the mother, there was internal consistency in trust between 0.80 and 0.87, communication between 0.81 and 0.84, and alienation between 0.54 and 0.60. For attachment to the father, there was internal consistency in trust between 0.91 and 0.93, communication between 0.88 and 0.99, and alienation between 0.68 and 0.79^{14, 15, 26}. In this work, Cronbach's alpha scale showed for the mother subscale trust 0.84, communication 0.77, and alienation 0.44; and for the father subscale trust 0.89, communication 0.82, and alienation 0.59.

The research project was approved by an ethics committee and qualified as a minimum risk to the health of the participants. Subsequently, authorization was requested from the Santa Marta school board (Colombia) and informed consent was sent to the parents. The adolescents who submitted the signed consent form and confirmed their willingness to participate in the assent filled out the booklet in the classrooms. The research adopted the ethical considerations set forth in the Declaration of Helsinki of the World Medical Association²⁷ and Resolution 8430 of the Ministry of Health of Colombia²⁸.

The information was collected between October and November 2016 in the classrooms of the educational institutions of Santa Marta, Colombia, by a professional in psychology and with the help of teachers. Each collection process lasted between 45 and 60 minutes.

Variables were dichotomized for descriptive analysis. Odds Ratio (OR) with 95% confidence intervals (95%CI) were then observed, and an adjustment analysis of associations was subsequently performed using a logistic regression model, as recommended by Greenland²⁹. At the final adjustment, the Hosmer-Lemeshow test was calculated in order to know the goodness of fit of the model³⁰. Adjusted OR probabilities showing 95%CI that did not include the unit were accepted as significant associations. The analysis was performed using the IBM-SPSS version 22 statistical software.

Results

Final sample of 339 adolescents, 42.2% was male and 57.8% female (M = 16.3; SD = 1.4). 15% loss was

obtained due to non-attending classes on the application day, desire for non-participation, withdrawal at any time from the study, and lack of informed consent signed by parent or guardian. Table 1 shows the descriptive analysis of sociodemographic variables, attachment dimensions, and suicidal risk.

Table 1. Sociodemographic characteristics

	Frequency	Percentage
Gender		
Female	196	57.8
Male	143	42.2
Age (years)		
13-17	314	92.9
18-19	24	7.1
Education		
Basic secondary	251	74
Mid secondary	88	26
Father's Education		
Formal	258	76.1
Technical, technological or upper	81	23.9
Mother's Education		
Formal	254	74.9
Technical, technological or upper	85	25.1
Job		
No	277	81.7
Yes	62	18.2
Victimization		
No	241	71.9
Yes	98	28.9
Trust with mother		
Low	203	59.9
High	136	40.1
Communication with mother		
Low	194	57.2
High	145	42.8
Alienation with mother		
Low	186	54.9
High	153	45.1
Trust with father		
Low	157	46.3
High	182	53.7
Communication with father		
Low	166	49
High	173	51
Alienation with father		
Low	165	48.7
High	174	51.3
Suicide risk		
Low	242	71.1
High	97	28.6

Table 2 shows suicidal risk scores for school adolescents in Santa Marta, Colombia.

The bivariate analysis between the dimensions of attachment to the mother and suicidal risk indicated that in adolescents with high suicidal risk is often low trust, low communication with mother, as well as high alienation with mother. These associations were maintained in a significant range by adjusting for gender and victimization. Regarding the dimensions of attachment to the father, it was recorded in the bivariate analysis that adolescents with high suicidal risk presented low trust, communication, and alienation with the father. Table 3 shows that when adjusting for gender and victimization, only the association with trust and communication remained significant.

Discussion

In this study with school adolescents in Santa Marta, Colombia, it is observed that low trust and communication with the mother and father, adjusted for

Table 2. Suicidal Risk Score in School Adolescents

Plutchik Suicidal Risk Score	Frequency	Percentage
0	41	12.1
1	44	13.0
2	38	11.2
3	47	13.9
4	38	11.2
5	34	10.0
6	17	5.0
7	25	7.4
8	21	6.2
9	10	2.9
10	12	3.5
11	10	2.9
12	1	0.3
14	1	0.3
Total	339	100.0

Table 3. Crude and adjusted association between attachment to mother and father and suicidal risk in Colombian adolescents

	Suicide Risk		OR	95%CI	OR ^a	95%CI
	Bajo	Alto				
Trust with mother						
Low	38.3%	21.5%	2.61	1.54-4.42	2.00	1.14-3.57 ^b
High	33%	7.1%				
Communication with mother						
Low	34.5%	22.7%	4.11	2.34-7.14	3.80	2.13-6.75 ^c
High	36.9%	5.9%				
Alienation with mother						
Low	34.8%	10.3%	1.68	1.03-2.73	1.48	0.90-2.45 ^d
High	36.6%	18.3%				
Trust with father						
Low	33.3%	20.4%	2.81	1.69-4.65	2.39	1.41-4.03 ^e
High	38.1%	8.3%				
Communication with father						
Low	31.9%	19.2%	2.51	1.53-4.13	2.01	1.19-3.37 ^f
High	39.5%	9.4%				
Alienation with father						
Low	43.7%	31.8%	1.42	0.93-2.15	1.38	0.88-2.14 ^g
High	12.1%	12.5%				

^aAdjusted. ^bAdjusted for victimization and gender ($\chi^2 = 0.807$; gl = 5; p = 0.977). ^cAdjusted for victimization and gender ($\chi^2 = 0.670$; gl = 6; p = 0.995). ^dAdjusted for victimization ($\chi^2 = 0.014$; gl = 2; p = 0.993). ^eAdjusted for victimization ($\chi^2 = 0.027$; gl = 2; p = 0.987). ^fAdjusted for gender and victimization ($\chi^2 = 1.484$; gl = 5; p = 0.915). ^gAdjusted for gender and victimization ($\chi^2 = 2.049$; gl = 5; p = 0.842).

gender and victimization experiences, are associated with high suicidal risk.

In this investigation, a statistically significant association was observed between trust and communication with parents and high suicidal risk. These findings are consistent with previous research. In Mexico, Pérez-Amezcuca et al¹⁸, in adolescents aged 14 to 19 years, found a significant relationship between poor trust/communication with parents and suicidal ideation (OR = 1.30, 95%CI 1.13-1.50) and suicide attempts (OR = 1.54, 95%CI 1.19-1.99). In another study in Belgium, Gandhi et al¹⁹, in school adolescents between 11 and 19 years of age, showed that trust in the mother is associated with minor self-injuries mediated by identity synthesis ($\beta = -0.22$; 95%CI 0.42-0.08), and identity confusion ($\beta = -0.17$; 95%CI 0.34-0.03). Likewise, maternal alienation was associated with self-injuries mediated by identity synthesis ($\beta = 0.28$; 95%CI 0.10-0.55) and identity confusion ($\beta = 0.33$; 95%CI 0.08-0.63).

However, Nrugham et al²⁰, in Norwegian school adolescents with several depressive symptoms reported that trust with mother (OR = 0.99, 95%CI 0.95-1.04), communication with mother (OR = 1.00, 95%CI 0.90-1.05), trust with father (OR = 1.01, 95%CI 0.90-1.06), and communication with father (OR = 0.98, 95%CI 0.94-1.03) were not associated with suicidal behavior. On the other hand, Turner et al²¹ in a sample of university students between 17 and 54 years of Caucasian and Asian origin, showed a lack of association between self-injurious behaviors and trust with parents (OR=0.99; 95%CI 0.92-1.06), communication with parents (OR = 1.00, 95%CI 0.94-1.07) in Asians, and trust with parents (OR = 0.10, 95%CI 0.99-0.92), communication with parents (OR = 0.88, 95%CI 1.04-0.96) in Caucasians. The study did not discriminate the association for attachment to mother and father dimensions.

In this study, the alienation dimension in both parents was independent of suicidal risk. This observation is similar to that reported by Nrugham et al²⁰ who documented that alienation with mother (OR = 0.98, 95%CI 0.92-1.06) and father (OR = 1.00, 95%CI 0.90-1.07) were not related to suicidal behaviors. In the same direction, in Canada, Turner et al²¹ showed that alienation with parents (OR = 1.07; 95%CI 0.98-1.16) was not associated with self-injuries in Asians or Caucasians (OR = 1.07; 95%CI 0.98-1.17).

As noted, some attachment dimensions are associated with suicidal behavior, therefore, this factor is relevant in the study of suicide risk in adolescents. The complex configuration of factors predicting suicidal behavior requires consideration of mediating variables in the absence of association⁴. In the same way, it is important to recognize the cultural characteristics in

the attachment formation, due to the different parenting patterns that modify trust, communication, and alienation between parents and children²¹.

The empirical evidence is clear in pointing out the importance of attachment in the different suicidal behaviors^{6-9,16}. However, studies are limited from the dimensional perspective of attachment and association with high suicidal risk. To date, studies have focused on self-injurious thoughts and behaviors rather than on suicide risk assessment^{31, 32}. It may be considered that the needs of emotional attachment should be addressed for suicide risk prevention, given that attachment builds cognitive schemes based on repeated experiences. Life history with caregivers relates to future interpersonal relationships, identification of one's needs, seeking support, and representation about oneself and others³³.

The attachment clinical implications show the relevance of dimensionality in suicide risk. Insecure attachment is a vulnerability factor for manifestations such as somatization, obsessions, interpersonal sensitivity, depression, anxiety, hostility, phobias, referential ideation, and psychoticism¹⁶. These symptoms are present in some mental disorders and are known to be an important risk factor for suicidal behaviour⁴.

In this way, if adolescents go through situations that generate a lack of trust and communication with the mother or father, the risk of suicide could be increased due to distance responses, lack of recognition of needs, inability to seek help, negative self-understanding, negative perception of others, and experience of intense and intolerable negative emotions³⁴.

This study allowed identifying the attachment dimensions associated with suicidal risk, which may suggest with greater precision promotion and prevention actions in families and adolescents. Attachment theory is positioned as a fundamental model in the health field and represents a protective or risk factor in a public health problem such as suicide⁶⁻⁹. The approach to suicidal risk from an attachment dimensional perspective responds in part to challenges in the public mental health field related to the need to integrate social-cultural theoretical perspectives, and professional perspectives in health among physicians, psychiatrists, psychologists, and nurses to understand and implement actions that save lives^{34, 35}.

Although the study presents limitations such as the number of scales used to measure each variable and does not consider other covariates that may intervene in the model such as depression, it allows us to approximate which aspect of attachment intervenes in the high suicidal risk in school adolescents in Colombia. The evidence is still limited to strictly compare the results between the dimensions of attachment and suicidal risk in Colombia. This gap gives relevance to

these results by generating knowledge about the contribution of the attachment dimensions with mother and father in suicidal risk, especially in a non-clinical population belonging to households with unsatisfied basic needs.

In future research, it is recommended to consider variables with clinical population, attachment with peers, and other mediating mental health variables, and also analyze the psychometric behavior of the alienation dimension in Colombian adolescents.

In conclusion, low trust and low communication with mother and father are risk factors for high suicidal risk in school adolescents in Santa Marta, Colombia, with unsatisfied basic needs. It is necessary to broaden the research of this association in other populations, as well as to consider other mediating factors.

Ethical Responsibilities

Human Beings and animals protection: Disclosure the authors state that the procedures were followed according to the Declaration of Helsinki and the World Medical Association regarding human experimentation developed for the medical community.

Data confidentiality: The authors state that they have followed the protocols of their Center and Local regulations on the publication of patient data.

Rights to privacy and informed consent: The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the correspondence author.

Financial Disclosure

Authors state that no economic support has been associated with the present study.

Conflicts of Interest

Authors declare no conflict of interest regarding the present study.

Aknowledgments

To Colciencias and the Magdalena Government for funding - Call 672/ Magdalena Royalties

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