



Family Vulnerability in Adolescents from Copacabana, Colombia.

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ABSTRACT

Objective: to determine which vulnerability-related items from the scale *¿Cómo es tu familia?* (How is your Family?) were the most problematic ones in Copacabana (Colombia) during 2010. **Methods:** a random sample of 406 students aged 11 to 19 was taken. Frequency tables were made to determine the items whose vulnerability values were higher than 40%. Such items were thus classified as problematic (issues). Contingency tables were made with the sex and age group variables. Then, the odds ratio, OR, was found in order to compare vulnerability proportions for each case. The following statistics software was used in this study: SPSS 19.0 and Epiinfo 6.0. **Results:** there is vulnerability in the following items: communication with the father, family routines, no search for support when the adolescent has problems, poor support provided by the adolescents' families, a great deal of importance placed on having power over others, having money, and having an active sex life. **Conclusion:** given the severity of the issues in question, they may be considered public health problems.

Key words: Adolescent behavior, population studies in public health, child welfare, family relations.

INTRODUCTION

This study explored family vulnerability in adolescent students from the Copacabana municipality in the Antioquia department in 2010. To achieve this, the scale *¿Cómo es tu familia?* (How is your Family) was used [1]. The scale is made up of three subconstructs, namely: type of relationships, coping, adolescent support, values, satisfaction, and accumulation of psychological stressors; each of these has its own items.

Copacabana is a municipality located in the Aburrá Valley (Valle de Aburrá), 14 km away from Medellín, the second most important city in Colombia. According to the population census conducted by Colombia's National Department of Statistics DANE, Copacabana had 61,421 inhabitants (48.1% men and 51.9 % women) spread over 23 neighborhoods and 15 rural settlements. In Copacabana, utilities coverage reaches 95 % of the area.

Given the municipality's geographic emplacement and the fact that it is crossed by two important land routes connecting it to the rest of Colombia, diffuse brain injury amounts to 28% of the area's hospital admissions, while 50% of these are due to traffic accidents [2]. Of the ten types of events under epidemiological surveillance due to their status as public health problems, domestic violence was found to be in the second place in 2007 [3] since it was the cause of 26 % of the total cases.

The target population was spread over 12 educational institutions (either public or private) from the Copacabana municipality and was made up of middle- and high-schoolers. The sample included a total of 7,137 adolescent students from sixth to eleventh grade. The students were enrolled at their respective institution and attended classes during 2010. Their ages ranged from 11 to 19.

The relationship system of adolescents includes their family, their school, the physical environment they live in, and the context where public health and one of its areas of work, mental health, are present. An individual's issues at the psychological level and the problems with authority configure his or her psychosocial dimension. In this sense, family vulnerability may be considered a psychosocial problem that is relevant for public health because it is very common in the municipality.

Vulnerability is a relative dimension, i.e. we are all vulnerable, but each individual has his or her own degree and type of vulnerability depending on the socioeconomic circumstances and personal constraints. This means that one may be much more vulnerable to a particular type of catastrophe, while being much less vulnerable to a different one. This is due to the fact that each catastrophe affects us in a different way and challenges different aspects of our self [4].

Adolescence must be understood as a time of personal and non transferable crisis during the biopsychosocial development of each human being. This study takes into account the definition given by the World Health organization, WHO, stating that adolescence takes place between ages 10 to 19. Additionally, it has two phases: early adolescence (from 10 to 14) and late adolescence (from 15 to 19) [5].

The group of people that is closest to adolescents is their own family, regardless of its type. The Colombian Political Constitution defines family as: "The basic nucleus of society. It is formed on the basis of natural or legal ties, by the free decision of a man and woman to contract matrimony or by their responsible resolve to comply with it" [6].

From a psychosocial point of view, family is seen as one of the microenvironments where adolescents live, and its functioning is to favor a healthy lifestyle for adolescents. Therefore, a family is a psychosocial unit subject to the influence of sociocultural factors that could protect or put it at risk. The interaction of these factors causes the family to be vulnerable to crisis situations or dysfunctional patterns. Appropriate family function is considered to be a protecting factor.

To understand family function, it is necessary to analyze its structure, processes, and family philosophy. Minuchin [7] defines family structure as "an invisible set of functional demands that configure the manners in which family members interact." These guidelines or rules provide, how, when, and to whom each member of the family relates, thus regulating the behavior of its members. The central dimensions of a family's structure are the rules that guide the family, the roles and the role expectations of each member, the boundaries, the alignments, and the power hierarchy.

Family function occurs in a sequence of stages which are related to each other in terms of meaning and continuity. The first stage is when the future parents become a couple, and the last stage is when both partners die [8]. Stressful situations in a family system define how vulnerable it is to crises. Stressful situations occur as a result of poor affective bonding, poor flexibility, failure to seek support, and trusting people who do not belong to the family nucleus instead of trusting any of its members.

The literature also reports that the situations between adolescents and their families influence aspects such as presence of depressive symptoms [9, 10], risk of suicide [11], performance at school [12], and psychoactive substance use [13].

Empirical evidence on issues such as family function, family vulnerability, depressive symptoms, suicide risk, and psychoactive substance use is required to uncover underlying problems in the adolescent population. In the Copacabana municipality, no study measuring family vulnerability using the scale *¿Cómo es tu familia?* with adolescent students has been conducted. Although there is also a version for parents, this study focused only on adolescent students.

MATERIALS AND METHODS

A study was conducted using a non-experimental, quantitative, descriptive cross-sectional approach. Its aim was to explore the behavior of the items of the *¿Cómo es tu familia?* instrument in adolescent students from the Copacabana municipality. Students had to be ages 11 to 19, and be enrolled in any public or private school. The units of observation were students who were in grades 6 to 11 at the time the observation instrument was applied. Observation units were selected randomly.

The rate of adolescents with any degree of family vulnerability was considered to be relevant for the study. A simple random sample of 406 students was selected. The error rate was of 5% and the confidence interval was 95% for the entire municipality. The sample in each school was distributed in proportion to the school's size while taking into account the probability of selecting a student from one school with respect to the total of adolescent students in the municipality.

The random selection for each school was carried out using a table of random numbers. Students participated freely in the study, and researchers made sure that they complied with the characteristics of the target population. Also, they were made aware of the fact that no money would be paid for participating. Likewise, the study's objectives were explained to them, and informed consent was taken as per recommendations of the bioethics committee of the National Faculty of Public Health. This committee classified the study as research with minimal risk for students.

We used an instrument for assessing family function called *¿Cómo es tu familia?* It is the result of the participation of professionals from the University of Chile, the University of Minnesota, the St. Thomas University (Bogotá), the University of Caldas (Colombia), the University of Sao Paulo and the University of Buenos Aires. In addition to the contributions of experts from the Costa Rica, Río de Janeiro, and the West Indies Adolescent Health Program, who worked under the scientific and technical coordination of the PAHO Regional Consultants, and under the sponsorship of the WK Kellogg Foundation [1], each of its constituents is in turn composed of a number of items. The values of Cronbach's alpha coefficients, which measure the reliability or internal consistency between the various scale factors, ranged from 0.51 to 0.81, thus denoting that most of them are in the 0.60 to 0.80 range, which in turn means that the instrument's consistency is reliable.

A pilot test was run prior to data collection in order to test the designed instrument and to measure the times of the self survey. Then, 406 surveys were randomly collected from the 12 educational institutions of the Copacabana municipality. Also, 2.3% of the students refused to participate in the survey.

For the analysis of information, each item of the instrument behaved as a variable with two categories: vulnerable and not vulnerable. To obtain the vulnerability percentages for each item, each student was weighted by the inverse of his/her probability of selection. Frequency tables were made for each item. The items with a vulnerability percentage lower than 40% were considered issues. Each of the problematic items (issues) was cross-tabulated with sex, and the Odds Ratio (OR) was determined in order to compare vulnerability rates between men and women. The same procedure was carried out for the 11-14 and 15-19 age groups. The p value of the Maentel-Haenzel test was chosen. This analysis was conducted using these statistics programs: SPSS 19.0 and Epiinfo 6.0.

RESULTS

Approximately one out of two students does not communicate frequently with his or her father, this may be because the father does not live with his children, has never lived with them, or neglects his relationship with them. Moreover, four out of five adolescents do not seek any support at all upon encountering some problem in their lives. Also, approximately one out of two adolescents redefines the problem upon encountering an adverse situation, perhaps this is one of the reasons for not seeking support. Three out of five adolescents believe that their families do not provide enough support to help them overcome their difficulties. Likewise, three out of five adolescents place importance in having power over others, money, and an active sex life. Similarly, three out of five students perceive that other people around them have a happier life. One out of two students believes his or her classmates to be better students (Table 1).

Table 1. Percentual distribution of the *¿Cómo es tu familia?* scale's most problematic items in adolescent students in Copacabana, Colombia, 2010.

Item	Vulnerability (%) n=406	
	Yes	No
Communication with the father	44.5	55.5
Family Routines	81.8	17.2
Search for social support	87.8	12.2
Search for religious support	84.0	16.0
Search for professional support	91.0	9.0
Problem redefinition	43.3	56.7
Adolescent support	66.2	33.8
Power, money, and sex	61.9	38.1
Feeling of happiness	56.8	43.2
Academic performance	48.0	52.0

There is statistical difference between men and women regarding the probability of developing vulnerability in the following items: importance given to having power over others, having a lot of money, and having an active sex life. This is more frequent in women. Therefore, it seems that women place a great deal of importance on having a good economic position, having the ability to influence others, and having an active sex life (Table 2).

Table 2. Odds Ratio (OR) between men and women in the most problematic items of family vulnerability in adolescent students in Copacabana, Antioquia, 2010.

Item	OR	Confidence Interval 95%	P value
Communication with the father	0.80	0.53-1.22	0.27
Family Routines	1.61	0.92-2.82	0.076
Search for social support	0.57	0.32-1.02	0.044
Search for religious support	0.75	0.42-1.34	0.299
Search for professional support	0.57	0.27-1.20	0.107
Problem redefinition	1.08	0.71-1.64	0.712
Adolescent support	1.20	0.77-1.88	0.393
Power, money, and sex	0.58	0.38-0.87	0.0061
Feeling of happiness	0.82	0.54-1.23	0.3135
Academic performance	1.15	0.66-2.01	0.5912

It was observed that adolescents aged 15 to 19 (i.e. those in late adolescence) are more vulnerable than those in early adolescence; hence it seems that adolescents become more reluctant to seek help within their families as they age, thus creating a vicious circle to face their problems since they redefine such problems, which could lead to depression, suicide risk, or other mental health problems (Table 3).

Table 3. Odds Ratio (OR) between the early adolescence age group and the late adolescence age group in the most problematic items of family vulnerability in adolescent students in Copacabana, Antioquia, 2010.

Item	OR	Confidence Interval 95%	P value
Communication with the father	0.73	0.48-1.11	0.1178
Family Routines	0.67	0.38-1.17	0.1360
Search for social support	0.47	0.25-0.88	0.0116
Search for religious support	0.83	0.46-1.49	0.5003
Search for professional support	0.56	0.25-1.24	0.1259
Problem redefinition	1.30	0.85-1.99	0.1979
Adolescent support	0.90	0.57-1.41	0.6230
Power, money, and sex	1.18	0.78-1.79	0.4013
Feeling of happiness	0.84	0.56-1.27	0.3948
Academic performance	1.00	0.57-1.75	0.9947

DISCUSSION

The study showed the existence of problems between adolescent students and their families in the following items:

Communication with the father

Nearly one out of two adolescents has poor communication with his or her father. This lack of communication might be present because the father does not live with his children, or because he has never existed in his children's lives, since he never lived with his wife or children. Another reason could be that the patriarchal culture emphasizes the model of the providing father who does not interact with his family.

Cia and Barham (2009) [17] and Fuentes, Motrico, and Morán (2003) [16] stress on the importance of communication between the father and his children. They found that fathers who are affectionate toward their children, communicate well with them, and do not criticize them when establishing rules and enforcing them have fewer conflicts with their adolescent children. Parra (2007) [14] found that both mothers and adolescents viewed family

communication positively. Moreover, adolescents state that they talk more often with their mothers than with their fathers. This finding is similar to the ones in this study, where communication with the mother was not an issue. Parra and Oliva (2002) [15] found that women communicated more often with their fathers. This result is not consistent with ours, since we found more vulnerability in women than in men in terms of communication with the father despite the fact that there is no statistical difference between sexes.

Family Routines

Four out of five adolescents showed vulnerability in family routines. This is indicative of problems in family organization, cohesion, and stability; likewise, families do not foster a feeling of security, and fail to favor adolescent growth. It seems that there are few situations for sharing with one's family. This drives adolescents to seek affection and support in people outside the family group.

Search for support

Adolescents from the Copacabana municipality do not usually seek for social, professional, or religious support when they encounter a problem. Even when there are programs or services for mental health issues, adolescents do not use them. This vulnerability is present in four out of five adolescents and becomes a risk since it may be the cause of the failure of many interventions focusing on the population in educational institutions.

Problem redefinition

Approximately one out of two adolescents redefines the problems encountered, hence searching for support is not a common practice. This is a problem because the student's strategy might not be the appropriate approach to solving the problem. For instance, in the event of death or illness of a relative or friend, or the loss of employment of a family's financial provider, the adolescent may exhibit depressive symptoms that, without proper treatment, can trigger a more serious problem which could include suicidal ideation.

Adolescent support

Three out of five adolescents believe they do not receive enough support from their families when they face difficulties. Traditionally, parents and other family members have not considered adolescents as subjects of rights. They have instead been regarded as passive members who are subject to the norms and waiting for their needs to be satisfied. The urbanization process of our cities together with globalization has led our adolescents to become interconnected individuals who interact with the world and exist in social dimensions that are very different from those of their parents. Poor communication between parents and adolescents could become a risk factor for the latter, as they show no interest in seeking help even when educational institutions offer mental health programs.

The importance of power, money, and sex

Women are more vulnerable to power, money, and having an active sex life, which seems to be a product of the culture and their upbringing. We could say that this is a consequence of the presence of drug trafficking in this society, where a syncretism between the existing values of rural culture, religion, and consumerism occurred.

Feeling of happiness

Approximately three out of five adolescents show vulnerability regarding the feeling of happiness compared to other people in their social environment.

Academic performance

One out of two students thinks that his or her academic performance is inferior in comparison with his or her classmates.

In the context of the Copacabana municipality, domestic violence has become a public health problem, as demonstrated by this study in which approximately three out of five students are involved in this kind of issue.

Results show that the families of these adolescents do not function well; this makes adolescents vulnerable to everyday stressful situations. Similarly, schools are unable to address this issue, which in turn means that there are already two social institutions in crisis that no longer act as referents in the lives of the students.

Our study was not the only one to consider the aforementioned items as issues. Studies like the one conducted in the northeastern area of Medellín [18] and the one conducted in the Ebéjico municipality [19] had similar findings.

This study's strength lies in the fact that its results can be inferred to the entire population of adolescent students. One of this study's limitations is that the parents' opinion is not included in it. Another one is the communication with the father item, as it only shows the frequency of that communication, and not its quality. Yet another limitation is that no results were obtained that can explain why adolescents do not seek support through the qualitative method.

CONCLUSIONS

The study showed the existence of problems between adolescents and their families in the following items: communication with the father, family routines, failure to seek support when the adolescent has some sort of problem, poor support of the families toward adolescents, and the great deal of importance that adolescents place on having power over others, money, and an active sexual life.

The issues identified in this study equally affect adolescents of both sexes and both age groups. There are, however, two exceptions to this. The first one is that the item involving the great deal of importance placed on having power over others, money, and an active sex life is more affected in women; the second exception is that the search for social support item is more affected in the 15 to 19 age group.

Other studies have shown the same issues of family vulnerability in adolescents.

Given the magnitude of the issue in question, we may consider this a public health problem that municipal authorities should take into account.

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References

Fundación Kellogs, "Familia y adolescencia: indicadores de salud", Washington, 1996.

Municipio de Copacabana, "Información General Copacabana Fundadora de pueblos", website Copacabana, <http://www.copacabana.gov.co/?aid=11>.

República de Colombia. Departamento de Antioquia, "Plan territorial de salud 2008/2011 El tiempo de la salud" website plan de salud, <http://www.copacabana.gov.co/uploads/files/PLAN%20DE%20SALUD%20PUBLICA%20COPACABANA.pdf>

K. Pérez, "vulnerabilidad", <http://www.dicc.hegoa.ehu.es/listar/mostrar/228>.

FORENSIS, "Datos para la vida. Instituto Nacional de Medicina Legal y Ciencias forenses", Bogotá, pp. 5, 16, 17, 2004.

Colombia, "Constitución política 1991. Familia: Art42", Bogotá, 1991.

S. Minuchin, "Familias y terapia Familiar", *Barcelona: Granica Editor*, pp. 86, 92, 347, 1977.

J. Retamales, V. Behn, J. Merino, "Funcionamiento familiar de trabajadores-jefes de hogar en sistema de turnos de una empresa de talcahuano, chile, año 2003", *Cienc. Enferm*, no. 1, pp. 23-30, 2004.

R. Leyva, A. Hernández, G. Nava, V. López, "Depresión en adolescentes y funcionamiento familiar", *Rev Med Inst Mex Seguro Soc.*, vol. 45, no. 3, pp. 225-232, 2007.

J. Galindo, L. Osso, W. Mormontoy, L. Rodríguez, "Vulnerabilidad familiar al consumo de drogas en familias adolescentes", *Rev. psiquiatr. salud ment.*, vol. 5, no. 1, pp. 3-25, 2004.

M. Larraguibel, P. González, V. Martínez, R. Valenzuela, "Factores de riesgo de la conducta suicida en niños y adolescentes", *Rev. chil. Pediatr.*, vol. 71, no. 3, pp. 183-191, 2000.

P. Gutierrez, N. Camacho, M. Martínez, "Autoestima, funcionalidad familiar y rendimiento escolar en adolescentes," *Atención Primaria*, vol. 39, no. 11, pp. 597-603, 2007.

F. García, M. Segura, "estilos educativos y consumo de drogas en adolescentes", *salud y drogas*, vol. 5, no. 1, pp. 35-56, 2005.

A. Parra A, "un análisis longitudinal de la comunicación entre madres y adolescentes", *Apuntes de psicología*, vol. 25, no. 3, pp. 267-284, 2007.

A. Parra, A. Oliva, "Comunicación y conflicto familiar durante la adolescencia", *Anales de psicología*, vol. 18, no. 2, pp. 215-232, 2002.

M. Fuentes, E. Motrico, R. Morán, "Estrategias de socialización de los padres y conflictos entre padres e hijos en la adolescencia", *Anuario de psicología*, vol. 34, no. 3, pp. 385-400, 2003.

P. Gutierrez, N. Camacho, M. Martínez, "Autoestima, funcionalidad familiar y rendimiento escolar en adolescentes," *Atención Primaria*, vol. 39, no. 11, pp. 597-603, 2007.

L. Villegas, "¿Cómo funcionan nuestras familias? Factores de protección y de riesgo familiar, según riesgo de suicidio, en los adolescentes escolarizados en la zona nororiental de Medellín, año 2006", [Trabajo de grado para optar el título de Trabajadora Social]. Medellín: Universidad de Antioquia, 2008.

D. Herrera, "vulnerabilidad familiar asociada al consumo de sustancias psicoactivas, sintomatología depresiva y riesgo de suicidio en los adolescentes escolarizados en el municipio de Ebéjico, año 2010", [Trabajo de grado para optar el título de Profesional en Gerencia de Sistemas de información en Salud]. Medellín: Universidad de Antioquia, 2011.