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Mental health in displaced children by armed conflict - National Mental Health Survey Colombia 2015

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Introduction. The armed conflict in Colombia is considered one of the most violent in Latin America. Children as a vulnerable population are most affected, increasing their risk of developing mental problems such as anxiety disorder and post-traumatic stress disorder.

Objectives. To determine the prevalence of the most frequent mental problems in the Colombian children affected by armed conflict.

Methodology. A cross-sectional study, using data from the National Mental Health Survey 2015. With children aged 7 to 11 years, in whom the RQC, PCL and DISC-IV-P (3.0.1) were applied.

Results. We described information on 100 displaced children between 7 and 11 years old due to armed conflict, being a representative sample at national level. It was found that 98.7% of this population is at school, as well as 17.8% in poverty. Mental illnesses were asked according to their appearance in the last 12 months, these were: anxiety disorder 6.5% (CI 95% 2.7-14.7) in displaced population, compared to 1.8% (CI 95% 1.1-3.1) in non-displaced; High score for post-traumatic stress was 13.2% (CI 95% 3.9-36.4) in displaced persons and 6.6% (CI 95% 4.0-10.7) in non-displaced persons.

Conclusions. Children affected by armed conflict have greater risk of presenting some mental illnesses such as anxiety disorder and post-traumatic stress, evidencing the situation of vulnerability in which they are.

Keywords: Mental Health, Armed conflict, Health vulnerability, Displaced population, National Mental Health Survey 2015

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Salud mental en niños desplazados por conflicto armado - Encuesta Nacional de Salud Mental Colombia 2015

Introducción. El conflicto armado en Colombia es considerado uno de los más violentos de América Latina. Los niños como población vulnerable son los más afectados, aumentándoles el riesgo de desarrollar problemas mentales como trastorno de ansiedad y estrés postraumático.

Objetivos. Determinar la prevalencia de los problemas mentales más frecuentes en la población infantil colombiana afectada por el conflicto armado.

Metodología. Estudio transversal, con datos de la Encuesta Nacional de Salud Mental 2015. Con niños entre 7 y 11 años, a quienes se les aplicó RQC, PCL, DICS-IV-P (3.0.1).

Resultados. Se describió información de 100 niños desplazados ente 7 y 11 años por conflicto armado siendo una muestra representativa a nivel nacional. Se encontró que el 98,7% de esta población se encuentra escolarizada, y el 17,8% en estado de pobreza. Para enfermedades mentales en los últimos 12 meses, se obtuvo: trastorno de ansiedad 6,5% (IC 95% 2,7–14,7) en población desplazada, respecto 1,8% (IC 95% 1,1–3,1) en no desplazados; puntaje alto para estrés post traumático 13,2% (IC 95% 3,9–36,4) en desplazados y 6,6% (IC 95% 4,0–10,7) en no desplazados.

Conclusiones. La población infantil afectada por conflicto armado presenta aparentemente mayor riesgo de presentar algunas enfermedades mentales como trastorno de ansiedad y estrés postraumático, evidenciando la situación de vulnerabilidad en la que se encuentran.

Palabras clave: Salud mental, Conflicto armado, Población desplazada, Vulnerabilidad en salud, Encuesta Nacional de Salud Mental 2015

INTRODUCTION

The armed conflict in Colombia is considered one of the most violent in Latin America, with different forms of violence including forced disappearance, sexual violence, illicit recruitment, kidnapping, torture, threats, war and anti-personnel mines[1]. Between 1958 and 2002, there were 220,000 deaths[2], and according to the Single Victims Registry (RUV), 42,267 homicides occurred in children under 18 years of age due to armed conflict[3]. Likewise, forced displacement has been increasing since 1996[4]. According to the RUV, the total number of people displaced by armed conflict corresponds to 6,827,447 people up to June 2016, one third of whom are children and adolescents under 18 years of age[3].

Forced recruitment is the most reported modality by non-governmental organizations and state agencies. In 2013, between 8,000 and 13,000 children soldiers were estimated in Colombia[1]. 42% of these children belong to the Colombian Revolutionary Armed Forces (FARC) and 44% to the National Liberation Army (ELN) in 2012[5]. Also, orphan hood corresponds to a risk factor in relation to recruitment, so children belonging to these groups find a valid and viable source of protection in the armed forces[6].

With more than half a century, the war in Colombia has affected population sectors not previously considered, such as children and adolescents[7]. This age group lives the emotional traces left by war, mainly affecting their mental health[8]. Since child population is especially vulnerable to exposure to traumatic events, they can more easily develop mental illness[9]. For this reason, children may exhibit a significant disadvantage in mental health field compared to the rest of the population; Barenbaum J *et al.* (2004) describes different prevalence of post-traumatic stress disorder (PTSD) from 22% reported in Israel to 93.8% in children displaced during the Bosnian War[10]. Also, different diagnoses have been reported in this population; a prevalence of 47% of PTSD, 43% of depressive disorders and 27% of generalized anxiety disorder were reported in Vindya Attanayake *et al.* (2009) study[11]. Behavioral disorders have also been described in Afghanistan children during the post-conflict period[12].

On the other hand, traumatic events in childhood can produce alterations in cognitive processes[13], generating attention deficit disorder and hyperactivity in childhood[14,15]. In Colombia, the prevalence of PTSD described in children who lived in a municipality victim of recent armed conflict is 23.2% and 16.8% in children with chronic exposure to war[16]. Moreover, different factors related to mental health status in children victims of violence have been described: type of violence, time and intensity of exposure, age at the time of the event, sex, family dynamics and socio-cultural context, which determine the presence and severity of developed psychiatric disorders[12]. Likewise, a relationship has been reported regarding PTSD in parents victims of armed conflict and the development of behavioral and mood disorders in their children, stating that children react more strongly to their parents' emotional states than to danger[17]. Similarly, Feldman and Vengrober (2011) study found an association of PTSD development in Israeli children living near the Gaza Strip with maternal depression and anxiety[18]. It should be noted that a traumatic event directly influences the development of the individual, and can produce acute stress states that require emergency management[19].

In relation to Law 1448 of 2011 of the Colombian Constitution directed to 'Victims of Armed Conflict', and taking into account the health requirements in children, it is necessary to evaluate problems and mental disorders in this population that allow a timely intervention in them[20]. Since there is no information about the impact of armed conflict on Colombian children in mental health field, the objective of this study is to describe the most prevalent mental disorders exhibited in this population.

METHODS

This is an observational cross-sectional study based on a subsample of the Master Sample collected from the National Mental Health Survey. The subjects of the study were individuals between 7 and 11 years old, chosen among this range of age following government policies of the Ministry of Health and Social Protection of the Republic of Colombia, that wanted to evaluate mental health in children (over 6 years) and differentiating them from adolescents (between 12 and 18 years). The sample was of probabilistic type, grouped by sex, schooling, and by the five regions of the country (Atlantic, Eastern, Central, Pacific and Bogota), differentiating the residents in homes of urban and rural areas of the country. We analyzed the data of people who reported that have been ever victims of armed conflict in life. Exclusion criteria were: subjects with some auditory, visual or language limitation that prevented responding to the survey, not speaking Spanish and institutionalized persons.

In addition to general home and individual data, the Multidimensional Poverty Index (IMP) was evaluated, an indicator that reflects the deprivation of homes in five dimensions related to: 1) educational conditions of the household, 2) conditions of childhood and youth, 3) work, 4)

health, and 5) access to public home and housing services, but not including monetary poverty[20,21].

To evaluate the mental commitment in children, the caregivers of the selected child (usually mother or father) were interviewed to perform the computer-assisted DISC-IV-P interview (3.0.1). Mental disorders were measured in a general way using the Child Report Questionnaire (RQC) used in Colombia which is positive when there is at least one present symptom for major depressive disorder, dysthymia, separation anxiety, generalized anxiety disorder, oppositional defiant disorders, behavioral disorder and attention deficit hyperactivity disorder[21]; We also inquired about PTSD using the Posttraumatic Stress Disorder Checklist, version C (PCL-C) using the same items translated into Spanish and modified for children and adolescents, in addition guilt ideas and games were asked and the presence of symptoms were evaluated in last 12 months[24].

STATISTICAL ANALYSIS

Percentages and intervals were estimated with a 95% confidence level for each of the variables under study using the Taylor series linearization method for the estimation of variance in complex surveys using STATA 14[25,26]. For this report, we present the coefficients of variation (CV) lower than 33.3%, which indicates that they are statistically reliable estimates and those higher than 33.3% are marked with an asterisk and are considered imprecise. The results were reported as a measure of the effect of the Indirect Relative Risk in percentages with their respective 95% confidence intervals.

RESULTS

13,200 homes were interviewed to obtain the entire study sample. In these homes, 2.727 caregivers of children between 7 and 11 years old were interviewed, with 16.3% of the sample in the Central region, 24.5% in the Atlantic, 15.3% in Bogotá, 26.5% in the Oriental and 17.4% to the Pacific. The characteristics of the population are described in table 1.

Of the population that reports changes of residence to be threatened by violence, in 3.6%, the life of the child was threatened. 98.7% of children are at school. The region, in

Table 1 Demographic description. Description of the population that reported displacement *vs.* not displacement because of threats by violence

	Percentage	IC 95%		
Changes in residence occurred because the child's life was threatened by violence (over all children) **(n=100)**	3.6	2.8 - 4.7		
	DISPLACED		NOT DISPLACED	
	Percentage	IC 95%	Percentage	IC 95%
Age (average)	8.8	8.4 - 9.2	9	8.9 - 9.1
Sex				
Man	52.2	39 - 64	49.4	46.6 - 52.2
Women	47.8	35 - 61	50.6	47.8 - 53.4
Schooling	98.7	96 - 99.6	97.7	96.9 - 98.4
Zone				
Urban	75.4	63.2 - 84.6	73	70.5 - 75.3
Rural	24.6	15.5 - 36.8	27	24.7 - 29.5
Poverty				
No	82.2	71.2 - 89.6	80.1	77.9 - 82.3
Yes	17.8	10.4 - 28.8	19.9	17.8 - 22.2

some cases receiving, which has a higher prevalence of population displaced by violence is the Central with 32.4% (CI 95%: 20.6-47.0), followed by the Eastern region with a 29.4% (CI 95%: 18.9-42.7), Pacific region with 22.4% (CI 95%: 13.4-35.1), Atlantic region with 9.1% (CI 95%: 4.6-17.1), and finally Bogotá, which presents 6.7% (CI 95%: 3.3-13.1). The majority live in Urban Zone and 17.8% of homes are in extreme poverty according to the Multidimensional Poverty Index (Table 1).

Of the total population that has not been displaced as a result of armed conflict, 97.7% of children are at school. When we discriminated by region, the region with the highest prevalence of this subgroup corresponds to the Atlantic region with 25% (CI 95%: 22.8-27.4), followed by the Central region with 23.4% (CI 95%: 21.0-26.1), the Eastern one with 20.6% (CI 95%: 18.6-22.8), Pacific with 16.6% (CI 95%: 14.8-18.5) and lastly Bogota showing 14.3% (CI 95%: 12.2-16.7). The majority live in urban areas and 19.9% of homes are classified in extreme poverty according to the Multidimensional Poverty Index (Table 1).

Assessing the mental health disorders of displaced and non-displaced children in the last 12 months, the results regarding affection disorders in displaced children were low, and the data presented in non-displaced children were imprecise given the variability coefficient higher than 33%, thus, we conclude that there is no significant difference in this type of disorders between the two subgroups. However, regard to anxiety disorder, it is evident that displaced children present 4.7% more anxiety disorders than non-displaced children, a result that is expected due to the vulnerability situation in which they are found. In respect of any other disorder, no significant differences between these two subgroups are suggested (Table 2).

In matter of RQC, when we observed the group of displaced and non-displaced children, we observed a prevalence of at least one problem in 24.4% of the population of children between 7 and 11 years of age in the displaced group, whereas that 27.7% were reported in non-displaced children subgroup. The prevalence of 2 or more problems was 31.2% in displaced children compared to 16.6% in non-displaced children and 44.4% in displaced children has no problems, data that represents 55.8% in non-displaced children (Table 2). These data suggest that displaced children present more problems than non-displaced children. Likewise, it should be noted that more than half of children displaced by armed conflict present problems possibly secondary to this condition.

Tabla 2 | Description of problems and mental disorders. Description of the population that has reported displacement *vs.* not displacement because of threats by violence

	DISPLACED		NOT DISPLACED		p value
	Percentage	IC 95%	Percentage	IC 95%	
Affective disorder in the last 12 months.	0	-	0.1 *	0.0 - 0.3	0.6784
Anxiety disorder in the last 12 months (*)	6.5	2.7 - 14.7	1.8	1.1 - 3.1	0.0080
Any disorder in the last 12 months (*)	7.9	3.5 - 16.6	4.6	3.5 - 6.1	0.2019
Problems in Children (RQC)					
No problem	44.4	31.7 - 57.9	55.8	53.0 - 58.5	0.0153
Has a problem	24.4	15.7 – 36.0	27.7	25.3 - 30.3	
Has 2 or more problems	31.2	19.9 – 45.2	16.6	14.6 – 18.8	
PCL - Posttraumatic Stress					
Has suffered at least one traumatic event	33	21.6 - 46.8	10	8.5 - 11.7	0.0000
Posttraumatic Stress (*, ¥)	13.2	3.9 - 36.4	6.6	4.0 - 10.7	0.2598
Posttraumatic Stress (relative to the total population) (*)	4.3	1.4 - 12.9	0.7	0.4 - 1.1	0.0006

*: Estimates with CV (coefficient of variation) greater than 33.3%, therefore, are imprecise.
¥: Percentage in relation to the total number of people who have suffered at least one traumatic event.

When we analyzed the data from the PCL, 33% of displaced children have suffered at least one traumatic event and of these, 13.2% scored high for post-traumatic stress. In the group of non-displaced children, 10% had suffered at least one traumatic event and of these, 6.6% scored high for post-traumatic stress. In relation to the total population studied, 4.3% of displaced children scored high for posttraumatic stress, which corresponds to 0.7% in the group of non-displaced children (Table 2). These figures suggest that having suffered at least one post-traumatic stress event correlates with the high risk of post-traumatic stress disorder in the future. In addition, the data show that children displaced by violence in Colombia are 3.6% more likely to suffer from posttraumatic stress disorder than those who have not been displaced. In other words, children of the displaced subgroup have suffered more traumatic events; therefore, they have a higher risk of posttraumatic stress disorder than those who have not been displaced.

DISCUSSION

These results show that most children surveyed are studying, regardless of whether they are from the subgroup that is displaced by violence. In addition, more men than women are present in the displaced subgroup. On the other hand, most of the children live in urban areas, and the prevalence of poverty according to the IMP is similar in both subgroups.

Regarding the prevalence of any disorder in the last 12 months as a consequence of the armed conflict in children population between 7 and 11 years, it is shown that the displaced subgroup presents a higher prevalence. However, given the sample size of this population, we can't say that they present more disorders than non-displaced children. Despite showing an imprecise estimate for anxiety disorders, a significant difference was observed between the two groups, suggesting that displaced children have more anxiety disorders. Likewise, there is a prevalence increase of anxiety disorder compared to that reported in the ENSM in 2015, which was 2%.

Considering mental problems with possible psychopathological value through the RQC questionnaire, the present study found that non-displaced children present a minimum number of problems. However, in the sub-group displaced by violence a high percentage of these problems is evident, since they have not been exposed to extreme conditions of the armed conflict. In addition, it was shown that almost one third of the children displaced by violence have 2 or more problems, demonstrating that displacement condition generates more problems in terms of mental health, which constitutes a great problem in terms of public health.

On the other hand, 33% of the children displaced by armed conflict have been exposed to some traumatic event. Thus, we can infer that being displaced may increase the prevalence of exposure to traumatic events and, therefore, increases the risk of post-traumatic stress disorder, which is consistent with reports presented in the literature[11,12] .

As for displaced children exposed to some traumatic event, 13.2% scored high for posttraumatic stress disorder, a considerably high figure in this subgroup; concluding that being exposed to traumatic events as a result of displacement by violence could increase the prevalence of PTSD. About all child population surveyed, a prevalence of 0.7% of PTSD in non-displaced children group was found, while displaced children exhibit a prevalence of 4.3%. Similar results are given by Vindya Attanayake *et al.* (2009); suggesting that being displaced by violence at this stage of life can lead to greater problems and mental disorders, which must be intervened immediately in order to obtain better results in terms of social development.

The results of RQC questionnaire about traumatic events show significant difficulties in child population between 7 and 11 years of age who have been displaced as a result of the armed conflict in Colombia, since displacement due to violence has a relationship with mental problems, as well as the risk of having PTSD. For this reason, this population requires follow-up, promotion and intervention in mental health areas. In this way, fewer difficulties are created when a comprehensive approach is taken, and adequate and timely intervention is carried out in the most vulnerable population victims of displacement due to armed conflict in Colombia.

In general, the findings on anxiety disorders seem to be affected by factors that must be considered in Colombia, such as poverty in some territories, especially those affected by armed conflict, as well as the consequences that produce such as: displacement, limited or poorly education and less access to health services. Another problem that can go unnoticed for Colombian population is the possibility of became a society tolerant with violence being able to give less importance to these events making them perceived as normal.

The limitations of the study lie in the costs and difficulties of carrying out the ENSM-2015, leading to the development of the ENSM-2015 only in caregivers and not to teachers or directly to children. This situation may have led the caregiver to decrease the importance to some symptoms for the purpose of protecting the child by producing some information bias. On the other hand, given

the design of the study, it is difficult to assess the direction of the association of variables. Likewise, as can be observed in studies involving children, the prevalence of mental disorders may show great variability according to applied methodologies, measurement instruments, age ranges, and population and cultural differences, which is difficult to determine and may limit the comparison of our results with other studies[27–29]. Despite this, the results obtained in terms of prevalence in anxiety disorders, presence of problems and high risk of posttraumatic stress in children displaced by armed conflict, are similar to those described in the universal literature[11,12]. As strengths, the sample of children has a representation of the Colombian population; also, is the first study to evaluate mental disorders in children in Colombia in conditions of displacement due to violence, these results provide a perspective of the situation that may allow the creation of promotion and prevention actions in this population in the future.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest regarding this study.

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