UNIVERSIDADE NOVA DE LISBOA Faculdade de Ciências Médicas

MENTAL HEALTH OF COLOMBIAN REFUGEES IN ECUADOR

Trauma exposure, discrimination and resilience

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My gratitude and respect to the Colombian refugees who kindly agreed to participate in this study. I hope that the research findings may somehow contribute to improve their lives.

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ABSTRACT

Colombian refugees have been exposed to severe stressors both in their home country (conflict-related violence) and in Ecuador (discrimination, poor integration and hardship). Exposure to adversity can have diverse impacts on mental health, ranging from resilience (good mental health despite exposure to significant stressors), non-disordered psychological distress, to increased mental disorders.

This cross-sectional study in a sample of 130 Colombian forced migrants in Ecuador assessed exposure to potentially traumatic events, mental health status, resilience levels and perception of discrimination and integration.

The research showed that psychological distress and mental disorder are prevalent in this population sample: 27% of respondents were diagnosed with psychological distress or mental disorder; exposure to adversity was identified as the main determinant of poor mental health. However, participants showed high individual levels of resilience. Concerning systemic factors of resilience, it was found that employment is significantly associated with better mental health outcomes. Perceived discrimination, reported by three quarters of the participants, is a major source of psychological distress. 43 % of the respondents felt excluded from the Ecuadorian society and this was found to be related to a precarious occupational status (informal labor and unemployment).

Determinants of poor mental health in this population sample included exposure to adversity, female gender, perception of discrimination and lower individual levels of resilience, whereas higher levels of resilience showed to be predictors of better mental health.

Interventions to improve the mental health of Colombian forced migrants should focus on addressing risk factors in Ecuador, such as discrimination and poor integration, providing appropriate care for individuals suffering from mental disorder and strengthening promoting and preventive factors such as social support, including employment opportunities. Whilst nothing can be done to alter pre-migration traumatic experiences, interventions aimed at building resilience can have a clear impact on the psychosocial wellbeing of this population.

Keywords

Colombian refugees, trauma exposure, mental health, resilience, discrimination

RESUMO

Refugiados colombianos vêm sendo expostos a graves situações de stress, tanto no seu país de origem (violência relacionadas com o conflito) como no Equador (discriminação, integração limitada e dificuldades económicas). A exposição às adversidades é reconhecida pelos seus múltiplos efeitos na saúde mental, passando por resiliência (algum nível de saúde mental apesar da exposição à situações graves de estresse), sofrimento psíquico, até um nível elevado de perturbações mentais.

Uma pesquisa foi realizada com uma amostra de 130 refugiados colombianos no Equador, para avaliar a sua exposição a eventos potencialmente traumáticos; o seu estado de saúde mental; os seus níveis de resiliência e as suas percepções sobre discriminação e integração social.

Os resultados mostraram que o sofrimento psicológico e as perturbações mentais têm uma prevalência elevada nesta amostra da população: 27% dos entrevistados foram diagnosticados com sofrimento psíquico ou perturbação mental e a exposição à adversidade foi identificada como principal determinante de uma saúde mental debilitada. No entanto, surpreendentemente os participantes mostraram elevados níveis de resiliência individual. Com respeito aos fatores sistémicos de resiliência, verificou-se que o trabalho de suporte é significativamente associado a melhores níveis de saúde mental. A discriminação percebida - e relatada por três quartos dos participantes - é uma importante fonte de sofrimento psíquico. 43% dos entrevistados sentiam-se excluídos da sociedade equatoriana, o que é atribuído a uma inserção précaria no mercado de trabalho (emprego informal e desemprego).

Fatores de risco relacionados à saúde mental desta amostra populacional incluíram: exposição à adversidade; género (feminino); percepção da discriminação e baixo nível de resiliência individual, enquanto por outro lado, alto nível de resiliência demonstrou ser condicionante de uma melhor saúde mental.

Intervenções para melhorar a saúde mental dos refugiados colombianos no Equador devem estar direcionadas à redução dos fatores de risco, como a discriminação e a limitada integração social, proporcionando atenção adequada aos indivíduos que sofrem de perturbação mental e fortalecendo fatores de promoção e prevenção, tais como apoio social e emprego. Enquanto não se pode alterar experiências traumáticas pré-migração, as intervenções que visam a construção de resiliência podem ter um impacto positivo no bem-estar psicossocial desta população.

Refugiados colombianos, exposição a trauma, saúde mental, resiliencia, discriminação

RESUMEN

Los refugiados colombianos han sido expuestos a factores de estrés severo tanto en su país de origen (violencia ligada al conflicto) como en Ecuador (discriminación, dificultades de integración, condiciones de vida precarias). La confrontación a la adversidad tiene impactos diversos sobre la salud mental, que van desde la resiliencia (buena salud mental a pesar de haber experimentado eventos potencialmente traumáticos), problemas psicológicos, hasta la aparición de trastornos mentales.

Este estudio transversal en una muestra de 130 migrantes forzados colombianos en Ecuador evaluó la exposición a eventos potencialmente traumáticos, la salud mental, los niveles de resiliencia y la percepción de discriminación y de integración.

La investigación demostró que el sufrimiento psicológico y los trastornos mentales son frecuentes en esta población: en un 27% de los encuestados se hizo este tipo de diagnóstico; la exposición a la adversidad fue identificada como el principal determinante de una mala salud mental. Sin embargo, los participantes mostraron altos niveles individuales de resiliencia. En cuanto a los factores sistémicos de resiliencia, se encontró que el tener un empleo está asociado con una mejor salud mental. Tres cuartas partes de los participantes reportaron sentirse discriminados, siendo esta percepción una fuente importante de sufrimiento psicológico. 43% de los encuestados se siente excluido de la sociedad ecuatoriana y se encontró que la percepción de exclusión está relacionada con una situación laboral precaria (trabajo informal y desempleo).

Los determinantes de una mala salud mental identificados en esta muestra de población fueron la exposición a la adversidad, el sexo femenino, la percepción de discriminación y los niveles bajos de resiliencia, mientras que los niveles altos de resiliencia mostraron ser predictivos de una mejor salud mental.

Las intervenciones en salud mental con refugiados colombianos deben abordar los factores de riesgo presentes en Ecuador, tales como la discriminación y la mala integración, proporcionando una atención adecuada a las personas que presentan un trastorno mental y fortaleciendo factores de promoción y prevención como son el apoyo social y el acceso al empleo. Aun cuando es imposible modificar las experiencias traumáticas previas a la migración, es posible implementar intervenciones dirigidas a aumentar la resiliencia con un impacto real sobre el bienestar psicosocial de esta población.

Refugiados colombianos, exposición a trauma, salud mental, resiliencia, discriminación

PART I - BACKGROUND

1. INTRODUCTION

1.1 Colombian conflict

The 50- year old Colombian armed conflict has triggered a massive population displacement, both internally and into neighboring countries. Almost 10% of the population has been affected by internal displacement (about 6 million people), the second highest number of internally displaced populations in the world after Syria. Conflict has also produced some 330,000 refugees and 220,000 conflict-associated deaths (1, 2).

Multiple factors trigger forced displacement in Colombia, among them the presence of armed actors and landmines, forced recruitment of youth, taxation by the different armed factions (essentially extortive payments to forestall physical harm), threats based on supposed links with any of the groups intending to seize lands, witnessing violent acts or being directly affected by these (assassinations, kidnapping, sexual and gender based violence (2, 3). Furthermore, violence in Colombia is not only related to the different armed factions but also to urban violence actors, such as gangs and drug traffickers, who are also responsible for significant flows of displacement (4).

1.2 Forced migrants in Ecuador

In Ecuador, according to official data provided by the government, some 55000 individuals have been recognized as refugees, which represents one third of the total number of asylum seekers since 2000 (175,000 persons). However, these figures do not provide a realistic view of the situation, as a significant number of Colombian forced migrants do not submit an asylum claim and remain thus invisible to the authorities. Despite progress made during the ongoing peace talks between the Colombian government and the Revolutionary Armed Forces of Colombia (FARC), some 500 people continue to cross the Ecuadorian border in search of international protection every month (5, 33) [1].

Some migratory movements from Colombia to Ecuador are not directly related to violence or threats and it is often difficult to clearly distinguish economic migration from forced

[1] In this study the terms "refugee" and "forced migrant" are used indistinctively. The approach includes the different categories of population in need of international protection (registered refugee, asylum seeker, non-seeker, refused).

migration, as the mobility decision is often determined by an impossibility to access basic services due to the presence of armed groups, their hoarding and control of territories and a lack of effective protection by the Colombian government (3).

1.3 Impact of humanitarian crises on mental health and psychosocial wellbeing

Research in humanitarian settings has shown that the impacts of armed conflicts and disasters on the mental health and psychosocial well-being of populations are diverse. The different outcomes range from resilience (good mental health despite exposure to significant adversity), non-disordered psychological distress, to increased mental disorders such as anxiety (including posttraumatic stress disorder), depressive, and substance use disorders. Moreover, people with pre-existing neuropsychiatric disorders such as epilepsy and psychosis can show an aggravation of their condition. Humanitarian crises have additionally an impact on the social determinants of mental health, through increased poverty, threats to human rights, domestic and community violence and changed social relations (6).

Despite the available evidence on the diversity of mental health outcomes among humanitarian crises-affected population, research has disproportionally focused on the association between exposure to potentially traumatic events and posttraumatic stress disorder (PTSD) and major depression (7). In fact, epidemiological studies have shown a substantial variability in rates of common mental disorders, with prevalence rates for PTSD ranging from 0 to 99% and for depression ranging from 3% to 85.5%. This discordance in results highlights the shortcomings of a medicalized research approach that does not take into account socio-cultural aspects that could be explaining these variations, among others. Meta-analysis of the most robust of these epidemiological surveys have shown average prevalence estimates of 15.4% for PTSD and 17.3% for depression (8).

Forced migrants are repeatedly exposed to potentially traumatic events and experience severe losses. Forced displacement is in fact one of the harshest multiple-loss experiences imaginable. At the moment of departure, people not only lose their homes and possessions, but also their identities as productive citizens, their social status and their support networks. This is collectively described as experiencing a “life project loss” (2). Forced migration involves the sudden loss of everything that defined the life of the person, with no possibility of making preparations or farewell rituals. Furthermore, this rupture involves an abrupt change in people’s vision of the world and human relations, in terms of trust in others, security and possibilities of building a vital project (9).

With regards to physical and social health, there is evidence on the impact of displacement in terms of food insecurity, ill health, marginalization, social dislocation, impoverishment and an accelerated deterioration in the living conditions of affected families (4).

Nevertheless, despite the known impact of humanitarian crises on mental health, it is important to go beyond a deficits approach that puts the emphasis on problems such as trauma, particularly PTSD. This way of addressing the situation has several limitations, starting from a narrow, medicalized definition of the problem (mental disorder), to an insufficient attention to the context, privileging individual over systemic approaches, and lacking cultural sensitivity (10).

Currently most authors agree on the importance of shifting from a model of vulnerability (conceiving forced migrants as fragile and vulnerable, whose condition per se will require curative responses such as Western psychotherapies) to a model of resilience, and from an assistance / medicalized approach to a scheme of comprehensive support and of building on individual and collective strengths (9).

1.4 Acculturation stress

Refugees invest important psychological resources in adapting to the host society. Besides a radical change in lifestyle, they need to cope with traumatic losses and often with additional stressors in a hostile environment. This process of psychological and sociocultural adaptation has been described as acculturation stress, specifically in situations where adaptation demands exceed the individual's capacities to deal with them (2, 11).

Social networks and community support and its counterpart, discrimination and rejection by the host society, have been documented as predictors of the degree to which the process of acculturation is experienced as stressful or not. Amongst these, discrimination has shown to be the principal predictor of acculturation stress (11). Furthermore, post-migration stressors may even have a greater negative impact on mental health than exposure to potentially traumatic events in contexts of conflict and violence (12, 13).

Besides discrimination and integration difficulties that Colombian refugees face in Ecuador, it is important to mention hardship living conditions as an additional post-migration stressor. Several socio-cultural studies (3, 4, 12) coincide on multiple basic needs which are uncovered or hardly accessible for this population:

- Employment: difficult access, informal work, labor exploitation. Women victim of harassment / sexual violence at workplace
- Housing: difficult access and poor housing, overcrowding
- Health: lack of health insurance as a consequence of informal labor
- Education: access to school registration limited by institutional barriers and financial constraints, peer bullying and ill-treatment by teachers
- Food insecurity due to financial constraints

Colombian refugees start a new life in Ecuador impoverished due to loss of property, inadequate housing conditions, precarious employment insertion, disruption of the educational process of children, and overall, because of traumatic family, and socio-cultural disruption (4).

1.5 Discrimination

Discrimination is a major determinant of the psychosocial wellbeing of refugees. Feeling rejected has major psychological effects, because in one hand, it implies recognizing the actions of others as illegitimate, and in the other hand, because the discrimination "reason" itself is the self-reference group, which is deeply related to identity and sense of self-value. Research has shown that discrimination adversely affects the quality of life of people at various levels and is negatively associated with mental and physical health. Furthermore, the perception of discrimination can be a better predictor of posttraumatic, adjustment and grief symptoms than previous exposure to severe adversity such as detention and torture, as shown in a study of asylum seekers in Australia (11).

Forced migrants in Ecuador describe discrimination as “that something else", with whom they have to deal with in a new environment. It is frequently mediated by false stereotypes amongst Ecuadorian regarding Colombians being violent or involved in illegal activities. In the specific case of Colombian women, gender discrimination is mediated by strong prejudices regarding their "accessibility": the fact of being culturally more open and outgoing can be wrongly interpreted as being “easier”, which can sometimes lead to sexual harassment situations. Moreover, the social pressure on public services and the competition for employment opportunities are additional factors mediating discrimination against Colombian refugees, especially in periods of economic crises such as the one that Ecuador is currently going through.

It is worthy to note that, similarly to other refugee settings, the manifestations of discrimination are exacerbated by inadequate living conditions for the entire population. There are nevertheless positive perceptions that should be also mentioned: Colombians are considered dedicated to work, “entrepreneurs”, and generally stimulating the economy (12).

As in other regions of Latin America, discrimination has a significant gender and ethnic based dimension in Ecuador, which makes female and Afro Colombian refugees the population most affected by this social phenomenon.

Overall, despite having experienced violence and armed conflict in Colombia, several refugees report a comparatively lower quality of life in Ecuador, due to perceived discrimination (4).

1.6 Integration

As mentioned previously, integration to the host society is also a major mental health determinant in displaced populations. There is evidence showing that integration and specifically the perception of "being", "belonging" and "becoming" a part of the host community are positively associated with refugees' mental health (14).

Colombian refugees face substantial integration difficulties in Ecuador, particularly in terms of access to employment. According the UNHCR Annual Report 2013 (5), a significant number of persons in need of international protection has been in the country for years without achieving sustainable levels of self-sufficiency. This is mainly related to documentation and discrimination issues: getting the refugee status is challenging and once obtained, getting an employment is also problematic. Thus, most of the refugees are forced to work in the informal sector of the Ecuadorian economy and to reside in marginal areas of major cities. Informal employment is in fact a source of increased vulnerability among the population in need of international protection, due to the risk of nonpayment and exploitation (3).

An additional aspect that needs to be taken into account in the integration process is a self-marginalization dynamic that can sometimes appear: some refugees minimize social contacts to a strict minimum because of their vulnerability, fear of discrimination or a feeling of insecurity related to the presence of armed actors in Ecuador; this further contributes to their social isolation.

1.7 Resilience

Conceptualizing resilience

Many people are exposed to loss or potentially traumatic events at some point in their lives, and yet they continue to have positive emotional experiences and show only minor and transient disruptions in their ability to function (15). The process of adaptation or the capacity to 'bounce back' when there is exposure to adversity is known as resilience.

Despite a general agreement on its role in the mental health field, resilience approaches have been limited by a lack of conceptual clarity and ongoing questions about how to assess and measure it (10).

Ungar's research on resilience is in this sense a major contribution to the comprehension of this phenomenon. The author proposes understanding mental health as a two-factor phenomenon: the first factor is the presence or absence of mental disorder. The second, the individual's measure of mental health, his / her general sense of wellbeing or resilience. Even when disorder is present, individuals can still report experiences of self-worth, a sense of coherence, relationships, empowerment, cultural identification, and many other qualities related to positive development under stress. When diagnosing resilience, the focus should be on the second factor and the biopsychosocial resources that predict mental health. Similarly, resilience should be conceived as more than the absence of pathology: if a person is affected by nonclinical distress, it would be short sighted to proclaim he/she is resilient just because no disorder has been diagnosed (10, 16).

Resilience is currently conceptualized as a multidimensional construct that incorporates personal skills and qualities together with social and family supports, rather than a complex of purely individual attributes such as self-esteem or hardiness. It is seen as a dynamic process that changes according to cultural and historical context of individuals, varying across age and gender. Resilience is not a static trait of the individual, since a person who copes well with adversity at one moment (is resilient) may become vulnerable (less resilient) soon thereafter due to sudden environmental changes (10, 16, 17). In other words, resilience is a process that lasts a lifetime, with periods of acquisition and maintenance, and reduction and loss (18).

Predictors and assessment of resilience

Individual characteristics like temperament, neurophysiology, genetic predispositions, self-regulation skills and intelligence have shown to be predictive of resilience. However, the cumulative impact of individual traits is less important than systemic factors like the quality of family and social support, particularly in contexts of higher adversity, where the social environment is the key source for resilience (7, 16).

For this reason, diagnosing resilience requires a multidimensional approach, taking into account the adversity context as well as individual and systemic factors of resilience. When assessing the context of adversity, it is important to include the chronicity as well as the severity of exposure; this is particularly important in settings of protracted armed conflict such as Colombia (16).

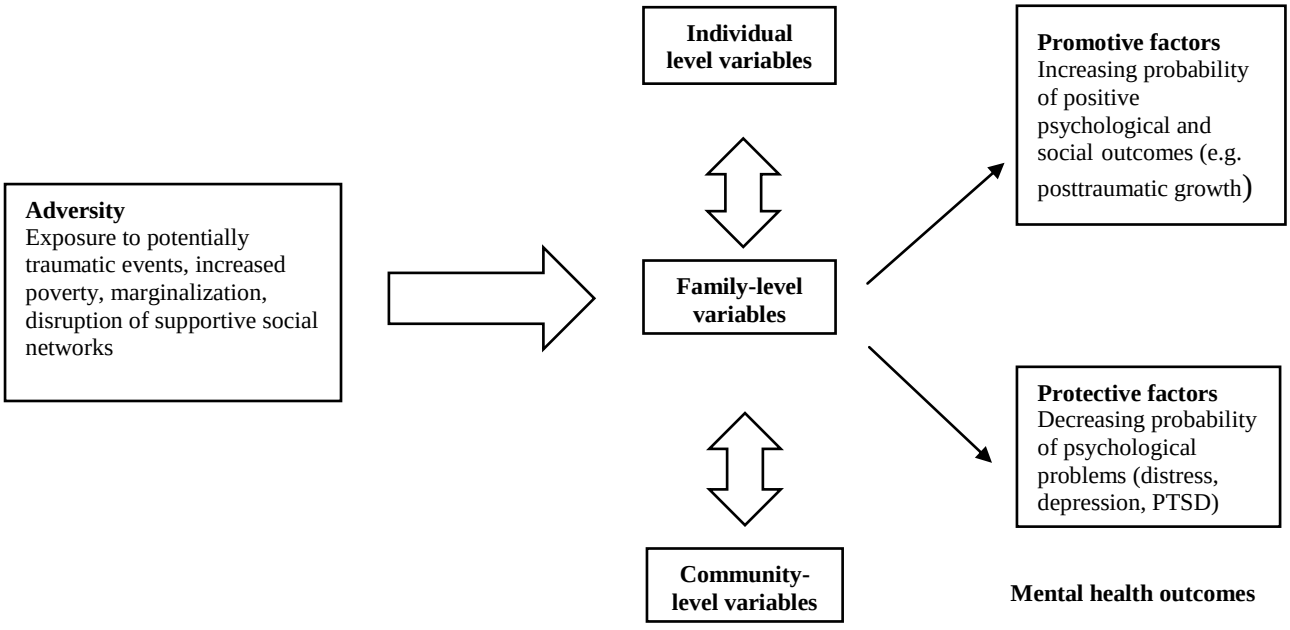
Additionally, the cultural dimensions of adversity need to be taken into account, as well as the individual's attributions about external events, especially in children (10). The definition of resilience may not necessarily be comparable across cultures: for example, in Afghanistan concepts such as "tarbia" (a strong sense of morality, correct behavior) and "wahdad" (family unity and honor) are indicators of positive wellbeing, whereas in the occupied Palestinian Territories the concept of "sumud" (adherence to ideology, connection to the land, steadfastness and struggle to persist) is key to resilience (7).

Promotive and protective factors

A supportive social environment can prevent or mitigate the impact of risk exposure and act as promotive or protective factor. Like risk factors, promotive and protective factors may be available at different levels such as the family, social and community environment. The systems' approach to resilience that is currently recommended shows the dynamism and balance between risk factors and promotive and protective factors and the importance of cultural and contextual factors (10).

Additionally, the time-dependent aspect of resilience should be also taken into consideration. Research shows for instance that individual variables such as personal strength and agency may have protective effects for PTSD symptoms in the post-conflict phase, but not during ongoing violence. Family support and community level variables such as acceptance and belonging, have shown on the other hand to be overall promotive and / or preventive factors (7).

Resilience and mental health model (7)



Association of resilience and reduced psychopathology

There is a significant body of evidence on the association of resilience and reduced psychopathology in non-conflict affected populations. Studies have found, for instance, that resilience serves as a buffer against psychiatric symptoms in mothers with history of childhood trauma (19), that resilience acts as a protective factor for depression in HIV patients (20), and that resilience moderates the adverse effect of stressful life events in terms of depression among older Chinese adults (21).

Similarly, resilience has generally shown to be associated with better mental health in conflict affected populations. A bidirectional correlation has been described, where poor levels of resilience predict the development of psychopathology and factors like continuing adversity predict decreased resilience. On the other hand, enhanced socio-economic conditions and social support have been linked to increased resilience and better mental health outcomes (22).

PART II - PERSONAL CONTRIBUTION

Conducting this study was considered relevant, since there is a lack of research on mental health of Colombian refugees in Ecuador. Furthermore, the resilience dimension has generally not been taken into consideration in investigations with conflict affected population in Colombia. Most research with internally displaced persons in Colombia has focused on PTSD as the most important mental health outcome of exposure to adversity (23, 24, 25). The shortcomings of this approach have been already mentioned.

At a global level, despite a progressive shift from medicalized models to models integrating broader sociocultural aspects, more research on refugee's mental health and resilience is still needed. There are quantitative studies on the subject, but only few attempt to link resilience with mental disorders using specific resilience measures (22). In this sense, the current study is also a contribution to the field's body of knowledge.

This research aims to contribute to a better understanding of different mental health aspects related to forced migration of Colombians in Ecuador and to provide information, not only on psychological distress or mental disorder, but also on resources and strengths of refugees.

2. OBJECTIVES

- To assess mental health status and resilience in a sample of Colombian forced migrants in Ecuador
- To explore the associations between mental health and resilience in this population, evaluating variables such as exposure to adverse events, perception of discrimination and integration with the host society
- To propose a mental health and resilience model for this population, including mental health risk, promotive and protective factors

2.1 Model: mental health determinants in Colombian refugees in Ecuador

A model of mental health risk, promotive and protective factors was designed in order to establish the study hypothesis:

Risk factors

- Exposure to potentially traumatic events in Colombia and in Ecuador
- Adverse environment in Ecuador
    - Discrimination
    - Integration difficulties
    - Difficult socio-economic conditions

Protective and promotive factors

- Individual factors of resilience
- Systemic factors of resilience
    - Family support
    - Participation in community activities
    - Employment as a source of support
    - Integration to the Colombian community
    - Spirituality, religious beliefs

2.2 Study hypothesis

- Psychological distress and mental disorder are prevalent in Colombian refugees in Ecuador
- There is an association between mental health and resilience
- Exposure to adverse events, discrimination and integration difficulties are predictors of poor mental health (risk factors)
- Better integration and higher individual and systemic levels of resilience are predictors of better mental health (promotive and preventive factors)

3. METHODOLOGY

A cross sectional study was conducted on a convenience sample of 130 Colombian adults in need of international protection living in Ecuador (age 18 or over). The investigation work was possible thanks to the cooperation and support of the United Nations High Commissioner for Refugees (UNHCR) and the World Food Program (WFP) in Ecuador.

People seeking assistance at the different UNHCR offices in the country were interviewed, as well as refugees attending WFP food distribution activities in one of the locations (Lago Agrio).
Informed consent was taken orally from participants, questionnaires were anonymous and confidentiality was ensured during the interviews. The research proposal was discussed with UNHCR's Senior Mental Health Officer in Geneva.

Interviews were carried out in four different locations in Ecuador, with the aim of recruiting a sample as representative as possible, particularly in terms of place of origin and exposure to adverse events in Colombia:

- Esmeraldas: mostly urban and rural Afro-Colombian (Coastal region of the northern border with Colombia)
- Lago Agrio: mostly rural population from the southern regions of Colombia (Amazon region of the northern border with Colombia)
- Quito:
    - Field office Pichincha: mainly urban population coming from different regions in Colombia
    - Resettlement Unit: candidates for resettlement to a third country, mostly exposed to higher levels of adversity

3.1 Instruments

Data collection was made using an interviewer-administered structured questionnaire assessing different variables and including the Kessler Psychological Distress Scale 10 and the Connor Davidson Resilience Scale 10.

The questionnaire assessed socio-demographic variables (including legal status and length of stay in Ecuador), reason for displacement, exposure to potentially traumatic events, perception of integration, perception of discrimination (differentiating experiences of discrimination) and systemic factors of resilience (see annex).

3.2 Measures

Mental Health status

Mental health status was assessed using the Kessler Psychological Distress Scale 10 and a non-structured psychiatric interview conducted by the researcher (psychiatrist).

Kessler Psychological Distress Scale 10 (K10)

K10 is a 10-item questionnaire intended to screen for psychological distress, based on questions about anxiety and depressive symptoms that a person has experienced in the most recent 4-week period.

It is a simple, brief, valid and reliable instrument; a shorter version of the scale (K6) has been used in the national mental health surveys of the WHO Mental Health Initiative (28). Additionally, K10 has been selected based on the fact that it measures non-specific psychological distress rather than specific disorders, which is on line with the study's approach regarding the diversity of impacts of adversity on mental health (mental disorder is not the single outcome of exposure to potentially traumatic events, non-disordered psychological distress is very frequent).

The scale's score ranges from 10 to 50 and the different values were interpreted as follows (26, 27, 28):

- score under 20: the participant is likely to be well (low or no risk of psychological distress or mental disorder)
- score 20-29: likely to have mild / moderate psychological distress or mental disorder (medium risk)
- score 30 and over: likely to have severe psychological distress / mental disorder (high risk)

A cut-off score of 20 was used for analysis purposes (26). In addition, a cut-off score of 30 was specifically used to assess the association between K score and presence of psychological distress / mental disorder, in order to evaluate the scales' sensitivity and specificity.

Psychiatric interview

Due to time constraints it was not possible to use a structured psychiatric interview to diagnose psychiatric morbidity.

The administration of the questionnaire and scales lasted between 20 to 60 minutes. Whenever symptoms of grief and acute stress or mental disorder were apparent during the interview, the researcher performed a rapid clinical examination in order to establish a diagnosis. Because of time limits the only areas assessed were grief and acute stress, depression and anxiety. Whenever psychiatric morbidity was diagnosed, participants were informed of treatment possibilities and when necessary, contact was made with the local organizations providing psychological support.

Resilience

The individual factors of resilience were measured using the Connor Davidson Resilience Scale 10 and the systemic factors through specific questions on family and social support, among others.

Connor Davidson Resilience Scale 10 (CD 10)

The CD-10 scale is also a 10-item questionnaire that measures individual factors of resilience. The scale explores dimensions such as adaptability, sense of self efficacy, optimism, perseverance and emotional and cognitive control, with reference to the previous month. Interviewees have the option to answer "not at all", "rarely", "sometimes", "often" and "nearly all the time" to the different questions.
CD-10 has shown good psychometric properties (17) and has been used with populations exposed to adversity in different countries. The reliability and validity of the Spanish version of the instrument has also been assessed with good results (29).
Score ranges from 10 to 40, with higher scores associated to higher resilience. For analysis purposes, it was decided to use a cut-off score of 30 (score $\leq$ 30 interpreted as lower resilience and score $\geq$30 interpreted as higher resilience).

Although the psychometric properties of the CD scale hold up in many studies, it has been observed that its factor structure and mean score vary according to the context. For instance,

people in the United States place more importance in the resilience dimension "personal competence/control", as compared to Chinese culture, where "harmony" is seen as being of greater value. The ability to get along well with others and to empathize with their needs and feelings is considered more important in Chinese culture than self-efficacy and control. In this sense, a dimension such as "altruism" would be an important missing element in current measures of resilience (31).

Systemic factors of resilience

No quantitative instrument measuring this dimension of resilience was found in the literature. Taking into account the critical importance of systemic factors in predicting resilience, and given the time constraints that made impossible to perform additional qualitative analysis in order to identify these factors in the population, it was decided to include some specific questions, in an attempt to address this aspect. Previous qualitative research has shown links between family and community cohesion / support, collective identity, supportive primary relationships and religion with resilience (22). Based on these studies, as well as on socio-cultural research on Colombian refugees in Ecuador (3, 4, 12), questions such as family support, participation in community activities, non-precarious employment, integration to the Colombian community in Ecuador and religious beliefs were included in the interview (see annex).

Discrimination

The investigation assessed the subjective experience of discrimination (perceived discrimination), without using objective criteria.

The questionnaire addressed the different contexts were participants felt discriminated (see annex), based on information collected from sociologic research on Colombian refugees in Ecuador (3, 4, 12). Participants could select one or several of the following experiences of discrimination:

- Housing (finding a place for rental)
- Employment (finding a job, payment conditions)
- Health services (access and quality of attention)
- Education (school registration difficulties, ill treatment by peers or teachers)
- Shops and other public places

Integration

Similarly as for discrimination, the subjective experience of integration was assessed through the question: "Do you feel excluded, partially or totally integrated?"

3.3 Data analysis

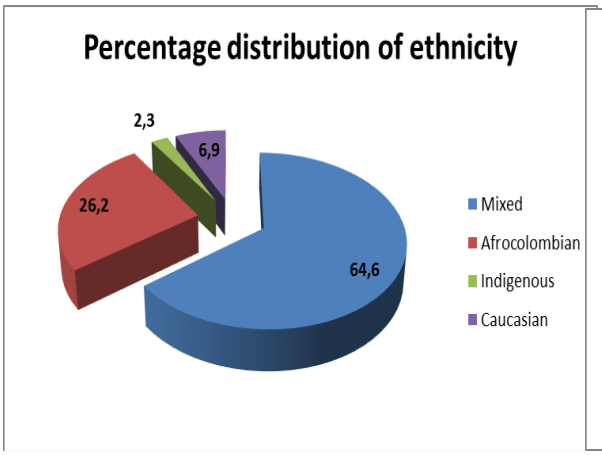
Data were collected between April 2015 and February 2016 and analyzed using SPSS version 21. Pearson correlation and point bi-serial correlation were used to assess significant association of various quantitative and qualitative variables with K Score and CD score respectively. Independent sample T-test and ANOVA were applied to assess significant difference in mean K score and CD score among various qualitative variables as appropriate. ANOVA, Tukey's b test and Games Howell test were used for post-hoc comparisons to assess significant difference in mean K score and CD score among various combinations of groups as appropriate.

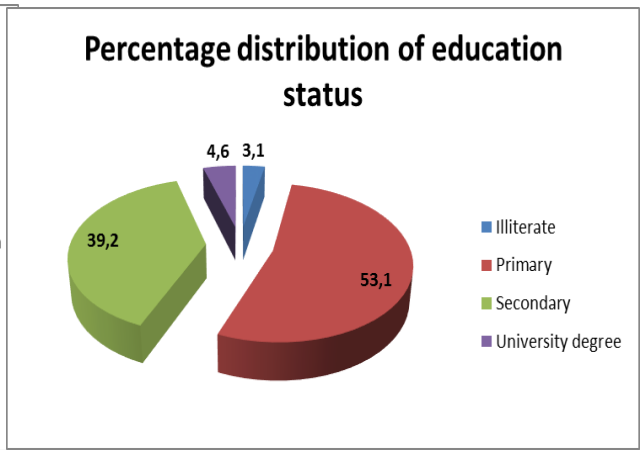
Chi-square, Fisher exact test and likelihood ratio chi-square test were applied to assess significant association of various qualitative variables with perception of discrimination, perception of integration, K score and CD score categories as appropriate.
Multivariate logistic regression with backward elimination method was applied to assess significant risk factors associated with perception of discrimination, perception of integration, K score and CD score. All the variables that were found to have p-value less than or equal to 0.25 were included in the model. P-value less than 0.05 was considered significant. Sensitivity, specificity, positive predictive value, negative predictive value and area under the curve were computed to assess the diagnostic accuracy of K score for mental disorder.

4. RESULTS

4.1 Socio-demographic characteristics of the sample

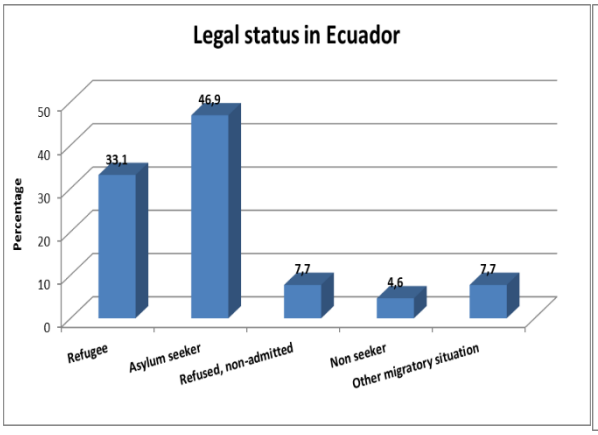
The participants had an age median of 38 years (Min-Max 19-72). Gender distribution was almost equal (50.8% females). Some 60% lived in couple (married, cohabitation) and 40 % were single / divorced. Around 65% of the interviewees were from mixed ethnic background, 26% were Afro Colombian, 7% Caucasian and 2% Indigenous.
Concerning the education level of the sample, it was found that 53% had a primary school level, whereas 39% had completed secondary school. About one third of the sample worked in agriculture in Colombia, whereas another third was engaged in sales and housework.

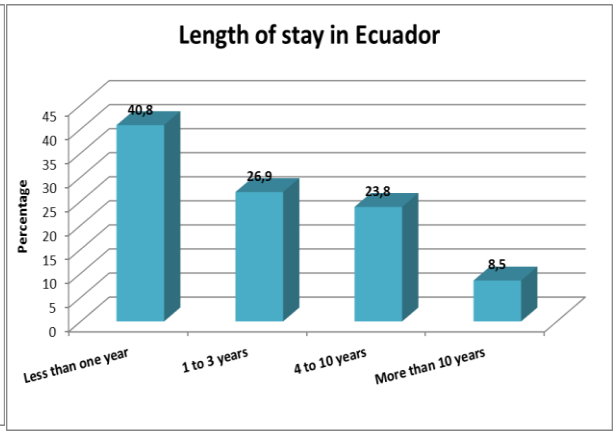




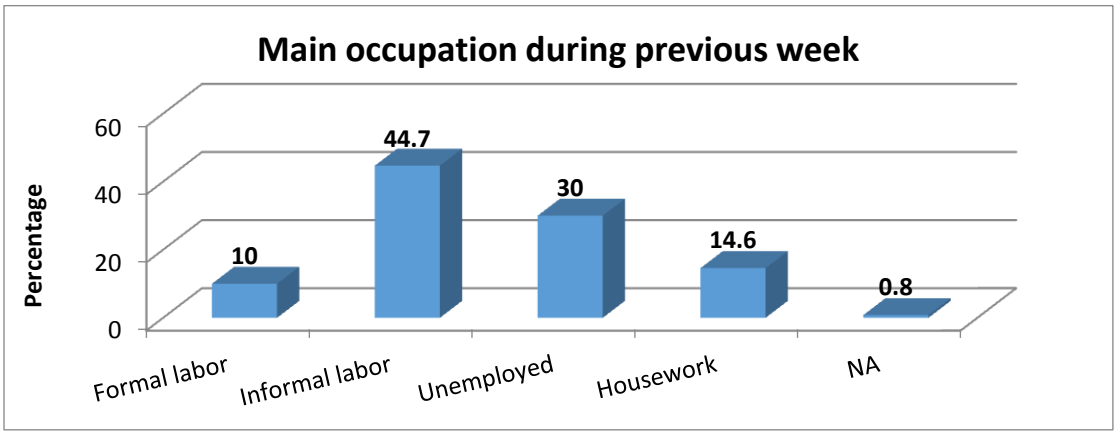
Some 60% of the participants used to live in urban areas in Colombia and almost three quarters of the sample (74 %) were from the departments of Putumayo (30%), Valle del Cauca (25.4%) and Nariño (18.5%). These departments are all located in the southern region of Colombia, close to the border with Ecuador.
About half of the sample was interviewed in Lago Agrio (location close to the southern border of Colombia).

With respect to the participants' legal status in Ecuador, it was observed that 47% of the sample consisted of asylum seekers, 33% of registered refugees, 12.3 % were non- seekers or had other migratory situation and 7.7% had been refused or non-admitted as refugees.
Concerning the length of stay in Ecuador, 41 % of the participants had been in Ecuador for less than one year, 27% between 1 and 3 years and the remaining percentage longer than 4 years.





About 45% of the sample worked in informal labor during the previous week. 30% were unemployed, 14.6% engaged in housework and only 10% had a formal employment (worked under a contract).

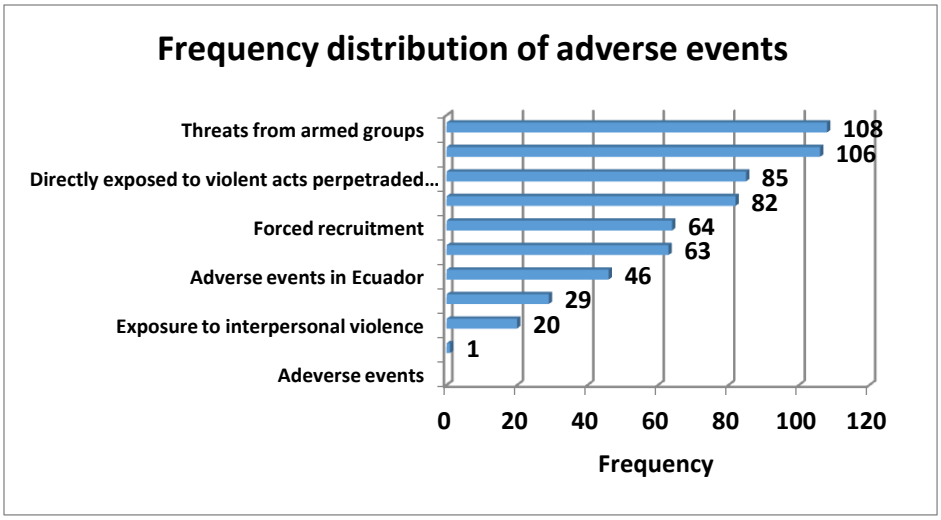


Reason for departure and adverse events

The majority of participants reported having left Colombia due to violence and armed conflict (87%). The remaining percentage migrated looking for better economic opportunities and for other reasons.
Almost the totality of the sample (98 %) had experienced adverse events and even individuals who left Colombia for reasons other than conflict reported exposure to potentially traumatic events.

Participants reported one or more of the following adverse events:

- Threats from armed groups: 86% of participants
- Witness of violence: 84% of participants
- Direct exposure to violence perpetrated by armed actors: 67.5% of participants
- Loss of property / assets: 65% of participants
- Forced recruitment (including threats): 51% of participants
- Repeated forced displacement (more than once): 50% of participants
- Adverse events in Ecuador: 36.5%
- Separation from close relatives: 23%
- Exposure to interpersonal violence: 16%



The population sample had a median score of 5 adverse events per person (3-6), with no major difference in average exposure among the main departments of provenance in Colombia (participants coming from Nariño, Putumayo and Valle del Cauca had a median score of adverse events between 4 and 5).
Similarly, no major difference in exposure to adverse events was found among the different interview locations (median score between 4 and 6). Of note, the participants who were interviewed at the UNHCR's Resettlement Unit had the higher mean score of adverse events (5,94), which corresponds to the fact that this group has generally been more exposed to violence, and are thus candidates for resettlement in a third country.

4.2 Mental health status

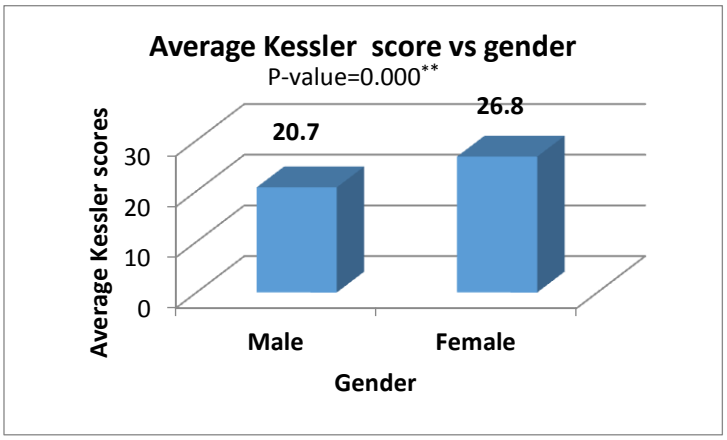
Kessler 10 scale (K score)

- **The median K score of the sample was of 23 (19-30). 64% of the sample had a K score ≥20, interpreted as a higher probability of psychological distress / mental disorder.**
- A highly significant inverse but weak correlation between CD score and K score was found (P<0,001). **Higher K score (higher probability of psychological distress/mental disorder) is associated with lower resilience and vice versa.** The latter was confirmed by the multivariate logistical regression analysis, showing that participants who scored ≤30 on the CD scale (less resilient) had 6 times higher odds of having K score ≥20 (higher probability of distress / disorder) than those who scored ≥30 on CD scale, adjusting for gender/discrimination, gender/legal status and employment status. Similarly, participants with K score ≤20 have 4.3 times higher

odds of having CD score ≥30 than those with K score ≥20 adjusting for gender/legal status.

Gender

Highly significant difference in average Kessler scores between both genders (P< 0,001). **Female have on average higher K scores than male** (mean score male 21 vs mean score female 27)

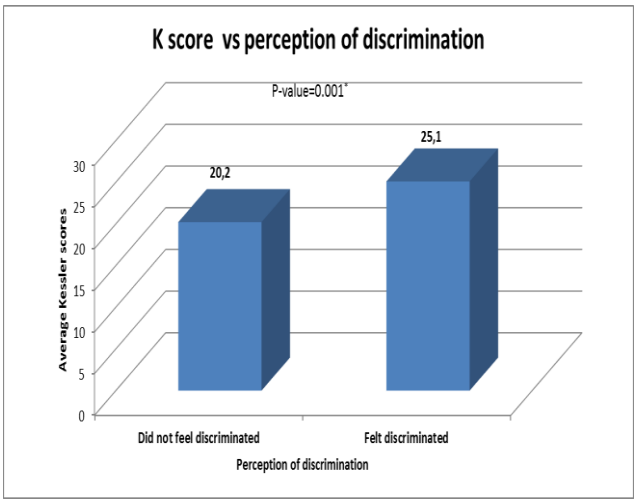


Adverse events (AE)

Significant positive but weak association between total score of AE and K score. **Participants with a higher exposure to adversity have a slightly higher K score** (P < 0,05).

Discrimination

A significant difference in average K scores was observed between participants who did not feel discriminated and those who felt discriminated (P<0.05). **Participants who felt discriminated had higher K scores** as compared to those who did not feel discriminated (25 vs 20)



Gender combined with legal status

Whereas no significant difference was found in mean K scores among legal status categories, when combining gender with legal status, it was observed that on average **male asylum seekers had lower K scores (21.5) compared to female asylum seekers (28)**.

Factors associated with K score ≥20

- **Compared to female refugees, female asylum seekers have 5 times higher odds of having K scores ≥20 (poorer mental health) and male asylum seekers have 92% higher chances of having K score≤20,** adjusting for gender / discrimination, employment status and CD score (P <0,05). Similarly, **male refugees have 72% higher chances of having K score ≤20 as compared to female refugees,** adjusting for gender/discrimination, employment status and CD score (P >0,05).

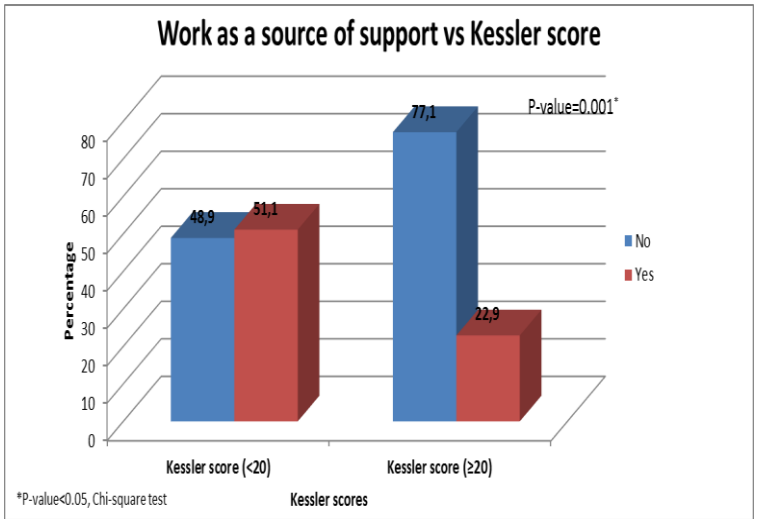
- **Male who feel discriminated have 7,4 times higher odds of having K scores ≥20 (poorer mental health) than male who don't feel discriminated** adjusting for gender/legal status, employment status and CD score (P < 0,05).

- **Participants who scored ≤30 on CD scale (less resilient) have 6 times higher odds of having K score ≥20 (higher probability of distress / disorder) than those who scored ≥30 on the CD scale** adjusting for gender/discrimination, gender/legal status and employment status (P < 0,05)

Factors associated with K score ≥20 (higher probability of distress / disorder, poorer mental health) according to this logistical regression model are: **female asylum seeker, male asylum seekers, perceived discrimination and CD score ≤30** (lower resilience levels).

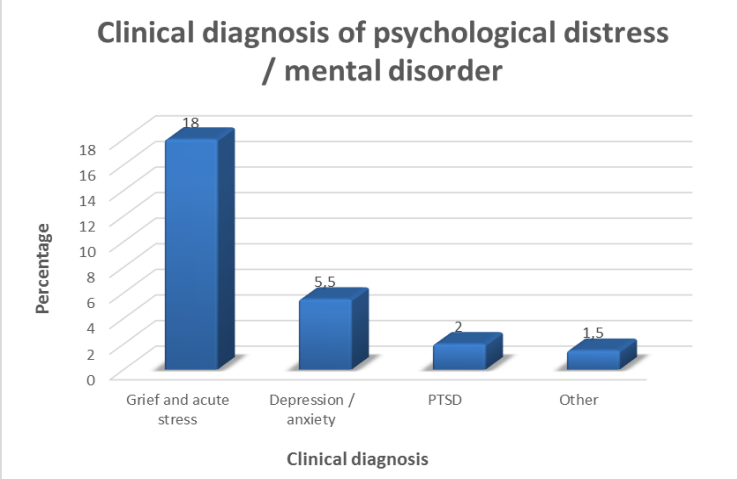
Systemic factors of resilience

A significant association between employment as a source of support and K score ≤ 20 was found. **Participants reporting non-precarious employment had a lower probability of psychological distress / mental disorder.** 51% of participants with a K score ≤ 20 report a supportive employment compared to 23% of participants with a K score ≥ 20 (P < 0, 05).

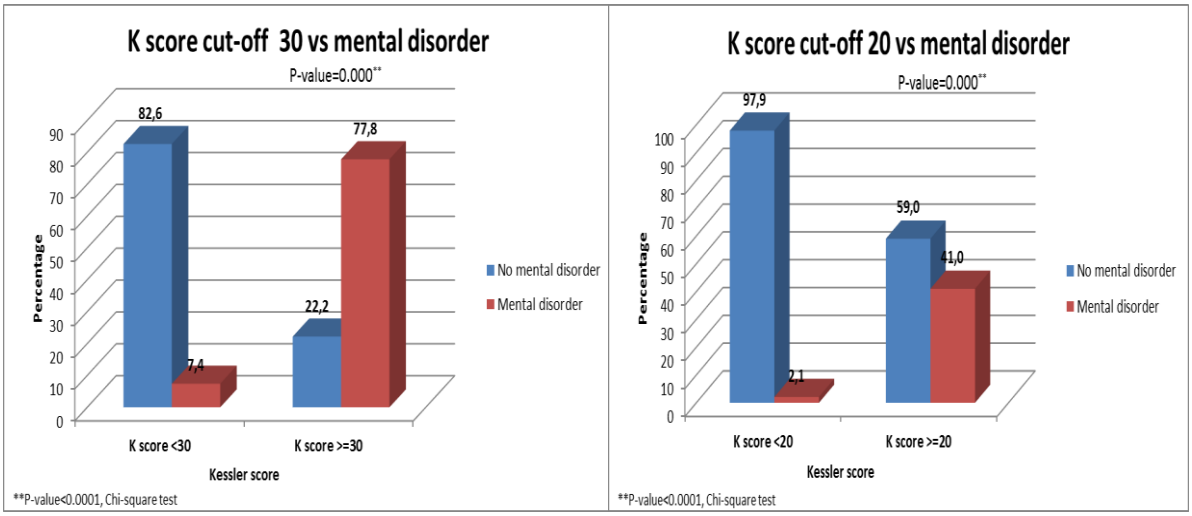


Clinical diagnosis of psychological distress / mental disorder

- **In 27% of the population sample clinical symptoms of psychological distress or mental disorder were identified.** Out of these, 18% had symptoms of grief and acute Stress, 5.5% had symptoms of depression/anxiety, 2% of PTSD and 1.5% other diagnosis.



- Highly significant **association between K score cut-off 30 and mental disorder (clinical diagnosis of grief / acute stress, depression or anxiety and other disorders[2])** (P < 0,001). 78% of participants with K score ≥ 30 had mental disorder, compared to 7.4% of those with K score ≤30.
- Highly significant **association between K score cut-off 20 and mental disorder** (P < 0,001). 98% of participants with K score ≤ 20 had no mental disorder, compared to 59 % with K score ≥ 20. This finding suggests that a cut-off score of 20 is useful to diagnose absence of mental disorder.
- The sensitivity and specificity of K score using cut-off 30 is 86% and 92% (area under the curve 86%), whereas the sensitivity and specificity of K score using cut-off 20 is 97% and 48% (area under the curve 73%) showing that **K score using cut off 30 is good enough to predict mental disorder** as compared to K score using cut off 20.



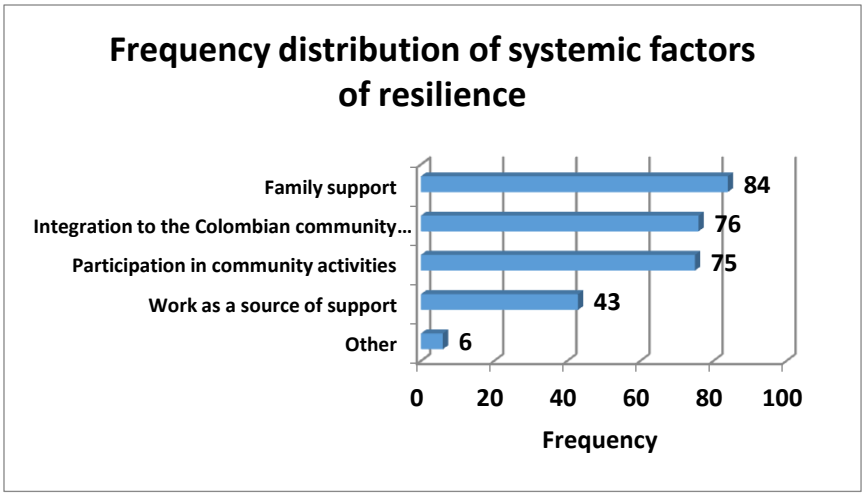
4.3 Resilience

Systemic factors of resilience

90% of the participants reported one or more of the following systemic factors of resilience:

- Family support: 64.6%
- Participation in community activities (mainly religious services): 58%
- Employment as a source of support (non- precarious employment): 33%
- Integration to the Colombian community in Ecuador: 58,5%

[2] In order to facilitate the results' lecture the term "mental disorder" will be used for "clinical diagnosis of psychological distress or mental disorder".

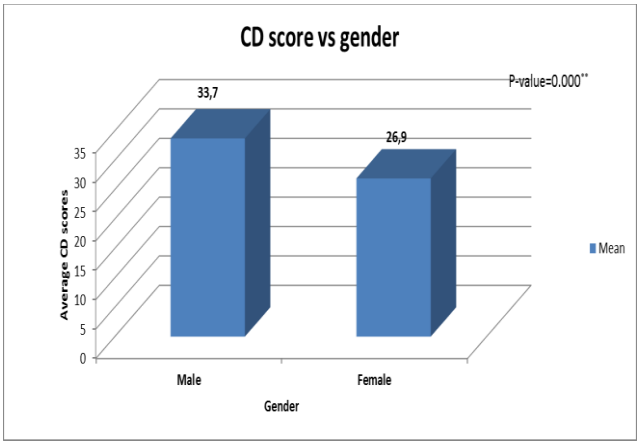


Connor Davidson score (CD score)

The **mean CD score in the population sample was 30,2 (SD: 7.6)**. **58% of the participants had a CD score ≥30 (higher resilience).**

Gender

A highly significant difference in average of CD scores between gender was found (mean score male 34 vs mean score female 27) (P < 0,001). **Male have on average higher CD scores (higher resilience) than female.**



Frequency of CD dimensions according gender

- It was observed that a **significantly higher proportion of male reported "almost always" at the dimensions adaptability** (66%), **sense of self efficacy 1** (73%), **sense of self efficacy 2** (64%) and **perseverance** (47%) (P < 0,05).

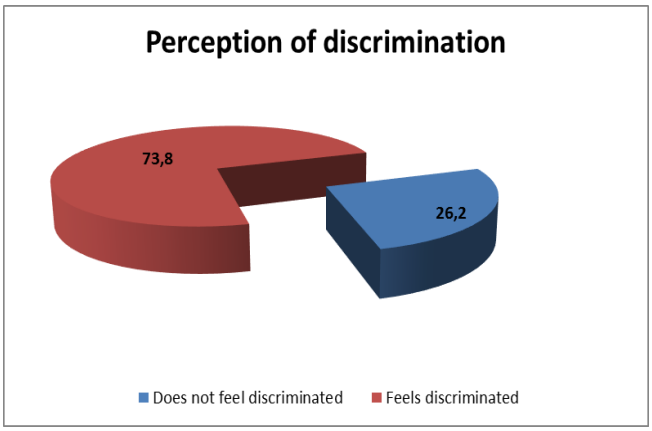
- Likewise, a **very significantly higher proportion of male reported "almost always" at the dimensions optimism** (70%) **and control of negative emotions** (62.5%) (P <0,001).

No association was found between exposure to adverse events, presence of psychological distress/mental disorder and systemic factors of resilience and CD scores.

4.4 Discrimination

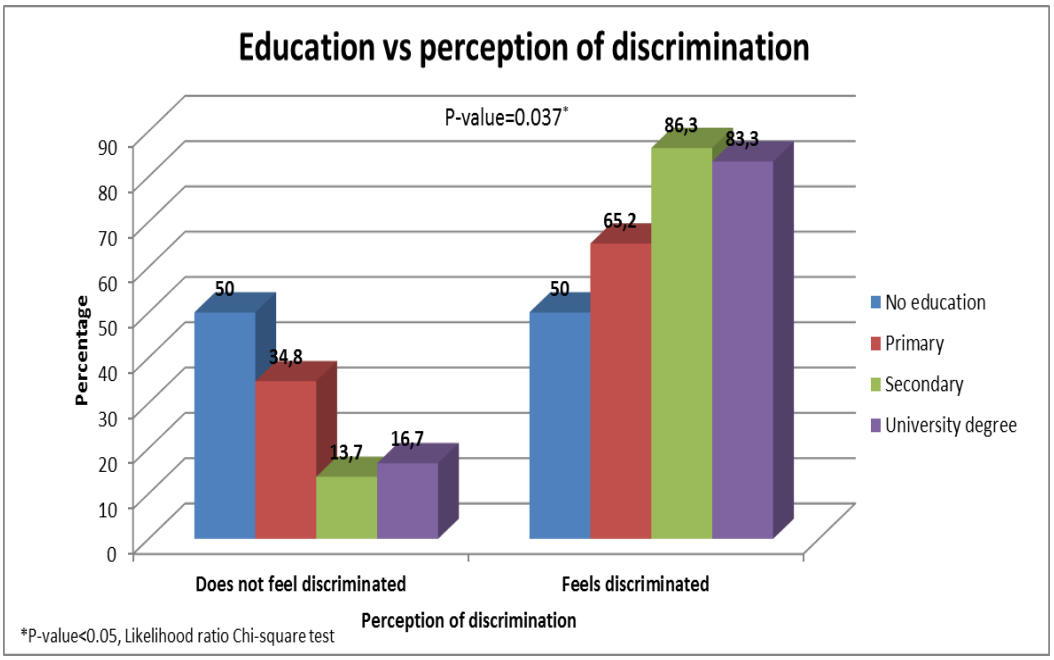
Perception of discrimination

74% of the participants reported a perception of discrimination in Ecuador. Respondents felt discriminated in one or several of the following contexts: looking for a place to rent (one third of responses), field of employment (one third of responses) and at schools, public spaces (shops) and health services (remaining third of responses).



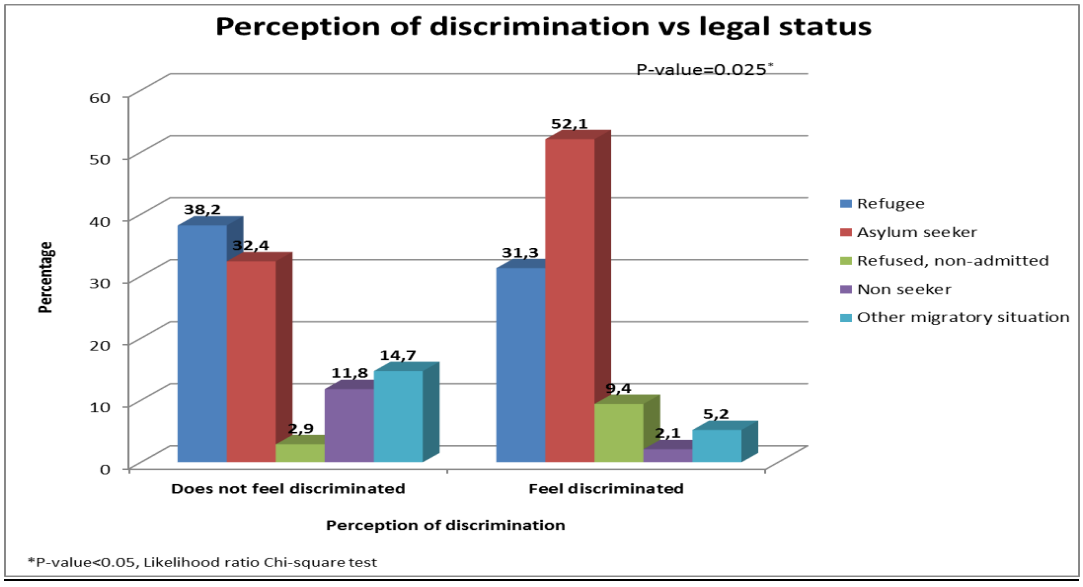
Education

A significant association was found between higher education level and perception of discrimination (P <0,05). 65% of participants with a primary level education reported perceived discrimination, as compared to 86% of those with a secondary school level and 83% of those with a university degree. **A higher education level correlates with higher perception of discrimination.**



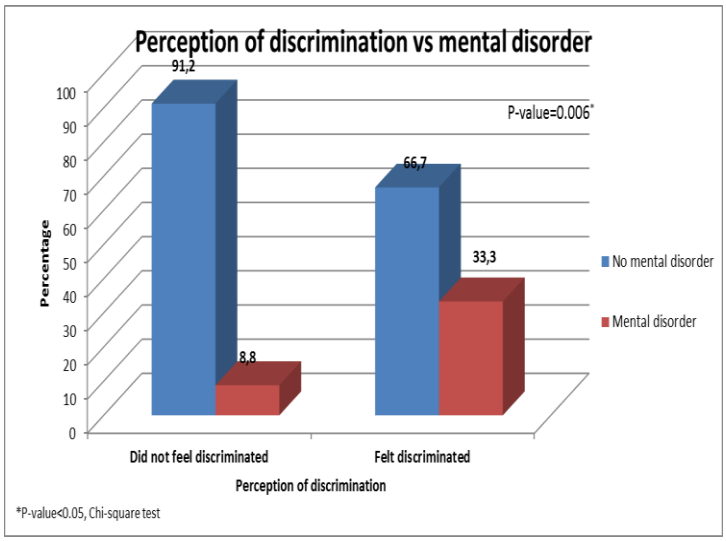
Legal status

The results showed a significant association between asylum seeker status and perception of discrimination (P <0,05). A higher proportion (52 %) of the participants who feel discriminated are asylum seekers. **Asylum seeker status is associated with higher perception of discrimination.**



Psychological distress / mental disorder

There is a significant association between mental disorder and perception of discrimination (P <0,05). Out of the participants who did not feel discriminated, 91% had no diagnosis and 9% had a diagnosis of mental disorder, whereas in the group who felt discriminated, 67% had no diagnosis and 33% showed symptoms of mental disorder. **Clinical diagnosis of psychological distress / mental disorder is correlated with higher perception of discrimination.**



Factors associated with perceived discrimination

- Participants with **mental disorder had 3.6 times higher odds of feeling discriminated** than those without mental disorder adjusting for education; this finding is however not statistically significant (P >0,05).
- Participants with a **secondary education level and above had 3 times higher odds of feeling discriminated** than those who had a primary level of education or less, adjusting for mental disorder (P <0,05).

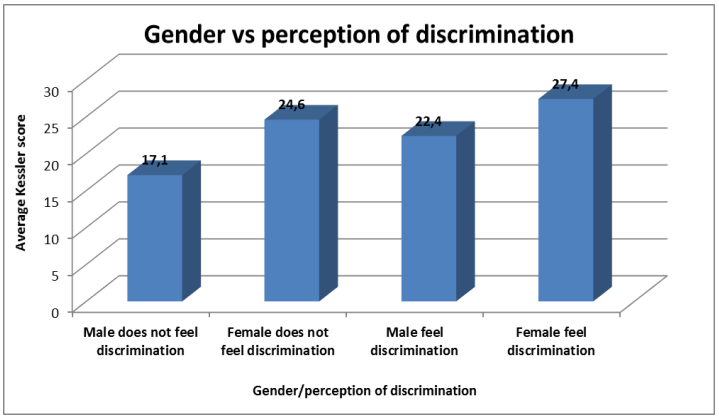
  Factors associated with perceived discrimination according to this logistical regression model are mental disorder and a higher educational level.

Gender combined with perception of discrimination

When comparing groups combining gender with perception of discrimination, the following observations were made:

- **Males who did not feel discriminated have significantly lower average K scores** than females who did not feel discriminated, males who feel discriminated and females who feel discriminated.
- **Females who did not feel discriminated have significantly higher K scores** than males who did not feel discriminated and male who feel discriminated.
- **Females who did not feel discriminated have lower K scores** than females who feel discriminated (not statistically significant) but higher scores than males who did not feel discriminated.
- **Females who feel discriminated have significantly higher K scores** than males who don't feel discriminated and male who feel discriminated.

Males who did not feel discriminated had the lower K scores (17), **followed by males who felt discriminated** (22.4), **followed by females who did not feel discriminated** (24.6), **followed by females who felt discriminated** (27.4)



The combination of female gender and perceived discrimination is very significantly associated with K score ≥20. Out of the participants with K score ≥20 a higher proportion were female who felt discriminated (53%) (P <0.001). **Female gender combined with a perception of discrimination is correlated to psychological distress and mental disorder.**

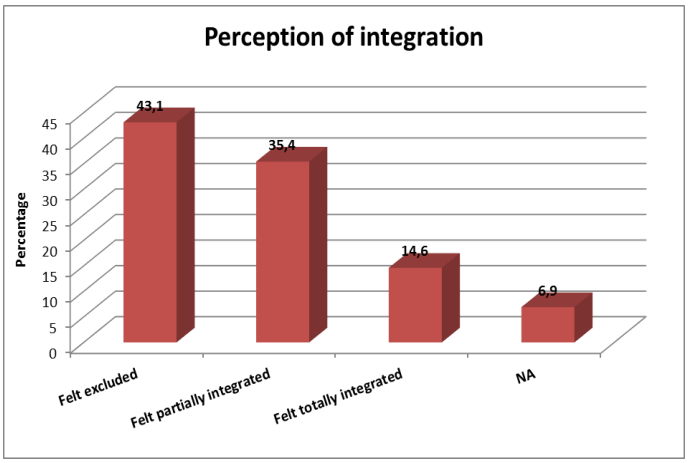
Systemic factors of resilience

No statistically significant association was observed between perception of discrimination and reported systemic factors of resilience.

4.5 Integration

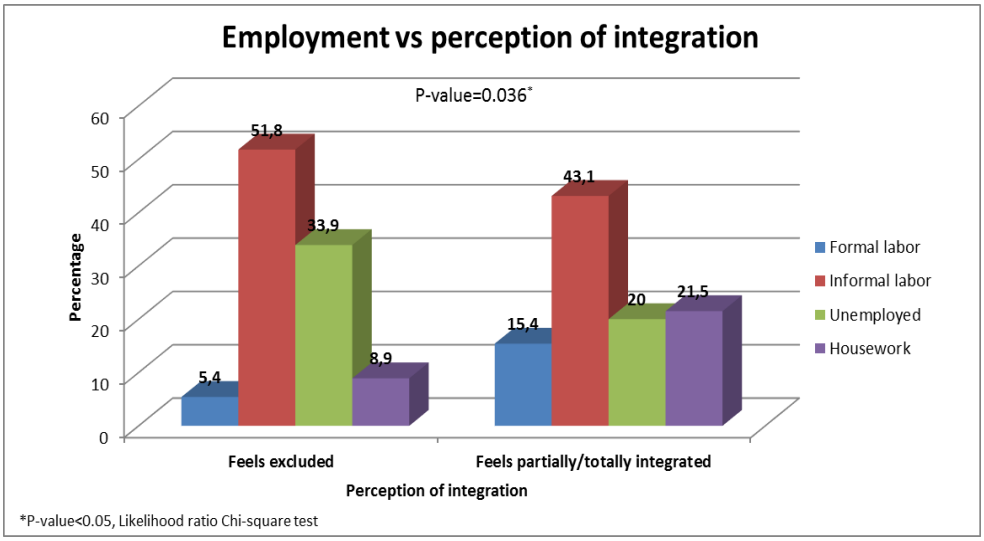
Perception of integration

The results showed that **43% of the participants reported feeling excluded in Ecuador**, 35.4% felt partially integrated and **only 14.6% reported feeling totally integrated**. In 7% of the sample the category non-applicable was used, since this group had very recently arrived in Ecuador (during the previous month).



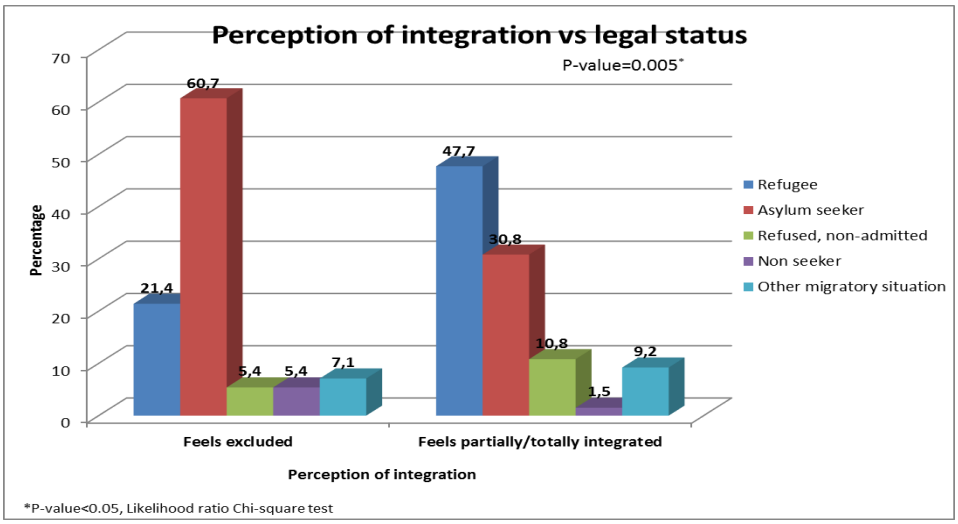
Employment

A significant association was found between employment status and perception of integration. A higher proportion of participants who felt excluded were engaged in informal labor or unemployed. Of those who felt excluded 51.8% were in informal labor and 34% were unemployed, as compared to those who felt partially/totally integrated, where 43% were in informal labor and 20% were unemployed (P <0,05). **85% of participants who reported a perception of exclusion were engaged in informal labor or unemployed.**



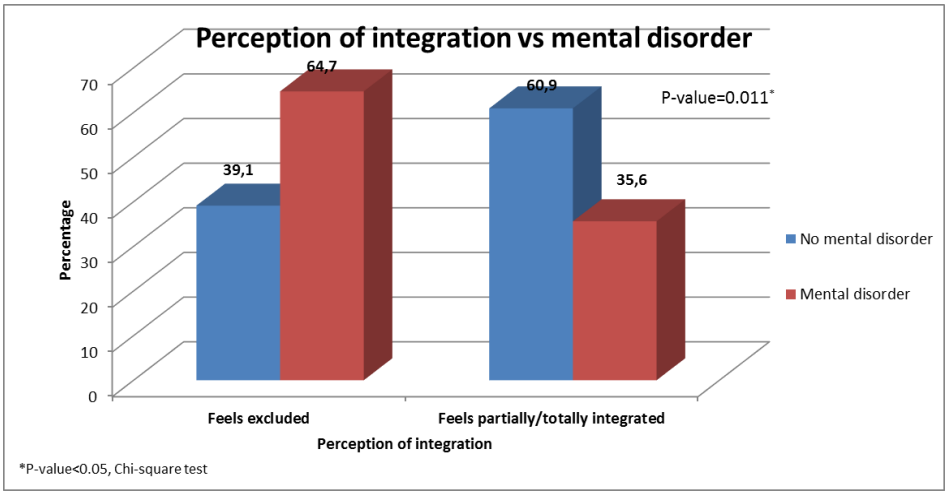
Legal status

The results showed a highly significant association between legal status and perception of integration. A higher proportion of participants who felt excluded were asylum seekers and refugees. Of those who felt excluded 61% were asylum seekers and 21.4% were refugees (P < 0,001). **82% of participants who reported perceived exclusion were asylum seekers and refugees.**



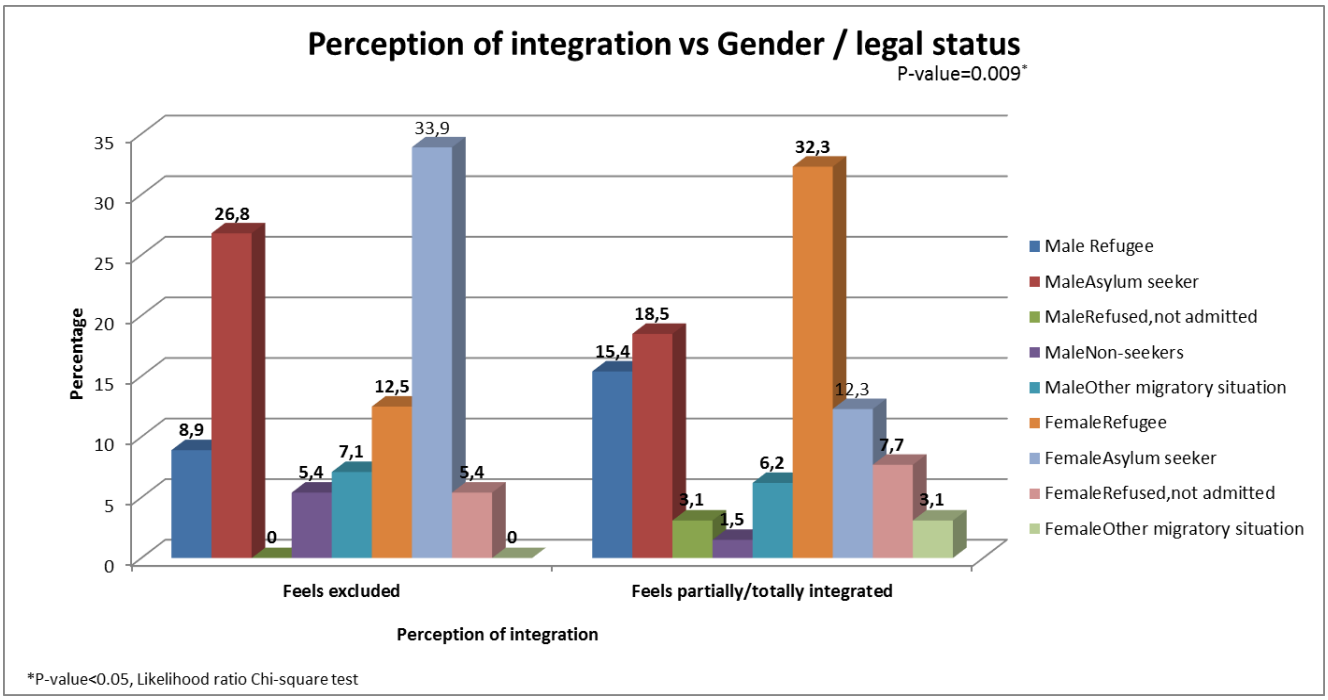
Mental disorder

A significant association between mental disorder and perception of integration was observed. Of those who felt excluded 65% had mental disorder, as compared to those who felt partially/totally integrated, where 61% had no diagnosis of mental disorder (P <0,05). **Mental disorder and perception of exclusion are correlated.**



Gender combined with legal status

When analyzing gender combined with legal status a significant association was found with perception of integration. Out of those participants who reported perceived exclusion 34% were female asylum seekers and 27% male asylum seekers, 12.5% female refugees and 9% male refugees (P <0,05). **A higher proportion of participants (61%) who feel excluded are male asylum seekers and female asylum seekers.**



Factors associated with perception of exclusion

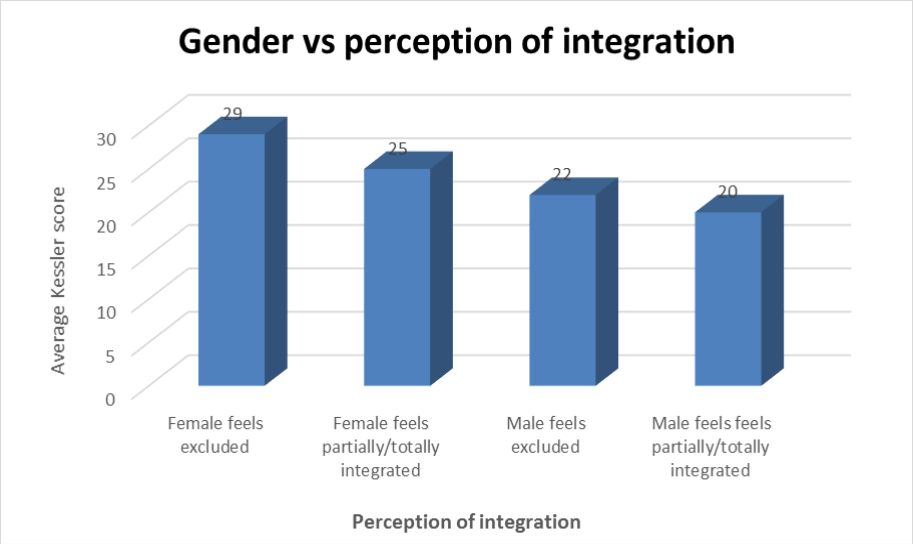
- **Unemployed participants, those engaged in informal labor and in housework have** 5.4, 4.2 and 1.7 times **higher odds of feeling excluded than those who had a formal employment**, adjusting for gender / legal status and mental disorder.
- **Female asylum seeker, male asylum seekers and male refugees** have 7.7, 3.7 and 1.4 times **higher odds of feeling excluded than female refugees,** adjusting for employment status and mental disorder
- **Participants with mental disorder have 2.7 times higher odds of feeling excluded** than those who had no mental disorder, adjusting for employment status and gender / legal status

Factors associated with perception of exclusion according to this logistical regression model are unemployment, informal job, engaged in house work, female asylum seeker, male asylum seeker and mental disorder.

K score

- **Female who felt excluded had higher K scores** than male who felt excluded and male who felt partially/totally integrated (P <0.05)**.**

  The higher K scores were observed among female who felt excluded (29), **followed by female who felt partially / totally integrated** (25), **followed by male who felt excluded (22), followed by male who felt partially / totally integrated** (20).



- **The combination of female gender and either perception of integration (feeling excluded and partially / totally integrated) is associated with K score ≥20, whereas male gender combined with either perception of integration is associated with K score ≤ 20.** Out of the participants with K score ≥20 one third were female who felt excluded and another third female who felt partially / totally integrated, whereas out of the participants with K score ≤20 30% were male who felt excluded and 39.5 % male who felt partially / totally integrated (p≤0,05). **Female gender independently of the perception of integration is associated with psychological distress / mental disorder.**

Systemic factors of resilience

- Significant **association was found between reported systemic factors of resilience and better perception of integration.** 98% of participants feeling partially / totally

integrated reported systemic factors of resilience, as compared to 84% of participants feeling excluded (P <0,05).

- **Integration to the Colombian community in Ecuador is significantly associated with perception of integration**: 71% of participants feeling partially / totally integrated report having links with the Colombian community, compared to 46% of participants feeling excluded.

5. DISCUSSION

The findings of this study clearly demonstrate the impact of forced migration and adverse conditions in Ecuador on Colombian refugees' mental health.

Exposure to potentially traumatic events is widespread, severe and recurrent in this sample population. The vast majority of participants (87%) raised conflict and violence as the main trigger factors for leaving Colombia, which contradicts some political views on economic causes for migration. **Participants have experienced on average five adverse events**: 85% of them reported threats from armed actors and being witness of violent acts, two thirds had been directly exposed to violence or had lost property and half of the respondents had been forcedly displaced more than once. The observed rates are even higher than the ones reported in previous research - 67% of internally displaced persons attending psychological care by Médecins Sans Frontières in Colombia had been exposed to potentially traumatic events (32).

The main post-migration stressors for Colombian refugees in this study were discrimination and poor integration, together with hardship living conditions, as will be shown below.

Beyond figures pointing to violence as the main trigger for forced migration in this population, what remains in mind is the explanation given by most of the participants: they flee from a conflict where civilians are targets of the different warring factions. "We left looking for peace of mind and security, because in Colombia, whoever you come across you will be in trouble".

Mental health status

A **clinical diagnosis of psychological distress or mental disorder was established in 27% of the respondents.** Out of these, 18% had symptoms of grief and acute stress, 5.5% had

symptoms of depression / anxiety, 2% of PTSD and 1.5% other diagnosis. The figures of depression / anxiety and PTSD are much lower than the ones reported in conflict-affected populations, which could be related to the use of a clinical diagnosis instead of a structured psychiatric interview; rates could thus be underestimated.

Concerning the Kessler score results, it was found that **64% of the sample had a K score ≥20, i.e. were likely to have psychological distress / mental disorder.** This proportion is strikingly high, compared, for instance, to 13% in a general population sample and 25% of a primary health care sample scoring above 20 in mental health surveys in Australia (30). This observation could be explained by the severity and chronicity of trauma exposure in this population, together with adverse living conditions in Ecuador.

Factors associated with poor mental health (higher K scores) were increased exposure to adverse events, female gender, perception of discrimination and lower resilience. Female gender was found to be very significantly correlated with psychological distress and mental disorder, which is consistent with the existing evidence, as well as with observations on internally displaced persons in Colombia (23).

When combining male and female gender with perception of discrimination, the results showed that **women who feel discriminated are more likely to be psychologically distressed or have a mental disorder.** Overall, discrimination is a known determinant of poor mental health; the findings of this study suggest however that it has a more severe impact on women, which is consistent with the increased vulnerability in females observed in most of the literature.

Furthermore, legal status was also identified as a risk factor, but only when combined with gender: female asylum seekers had higher odds of having poor mental health and male asylum seekers had 92% higher chances of having better mental health status as compared to female refugees. Similarly, male refugees showed significantly higher chances of having a better mental health status than female refugees. Overall, **female asylum seekers show the highest risk for poor mental health**. In addition to the female gender vulnerability mentioned before, this finding could be explained by higher acculturation stress levels in asylum seekers. Asylum seekers are on an initial phase of the adaptation process, as they have generally spent less time in Ecuador. Moreover, the asylum seeker status itself is a source of distress, since the possibility of being regularized through a refugee visa is uncertain (asylum claims are in fact frequently denied by the government).

With respect to perception of integration, a similar observation was made: exclusion is associated with a higher probability of psychological distress / mental disorder only when combined with gender: females who feel excluded have the higher K scores and male who feel partially / totally integrated the lower K scores. Once again, **women show a higher vulnerability to perceived exclusion.**

Overall, the findings on the association of exclusion and poor mental health are consistent with previous reports showing that unemployment and poor social integration are associated with higher rates of psychopathology (11, 13).

Kessler 10 scale showed to be an appropriate screening tool for psychological distress and mental disorder. As mentioned before, a cut-off score of 20 was used for statistical analysis. Analysis using cut-off score of 30 were additionally done to assess sensitivity and specificity of the scale. Kessler 10 scale showed a good sensitivity (86%) and specificity (92%), suggesting that it is a good enough instrument to predict mental disorder when using a cut-off score of 30. Nevertheless, additional research on the scoring and the clinical cut-off points is needed.

Resilience

Surprisingly, it was found that the **population sample had a high average CD score of 30 (high individual resilience levels).** This results are comparable to scores in general population samples in the United States (mean score: 32) and in Brazil (mean score 29). Trauma exposed populations have usually lower CD scores, as shown by diverse research: individuals with PTSD diagnosis in international studies score on average 20, non-treatment seeking Chinese survivors of earthquake score 27, non-treatment seeking US combat troops score 28 (31). Exposure to severe adversity is generally associated with lower resilience; this was however not observed in the Colombian refugee's sample of this study. The explanation to this **high resilience level despite exposure to severe stressors** is not clear, though several hypotheses can be proposed:

- **Posttraumatic growth**: this phenomenon has been described as a positive psychological change ("psychological growing") as a result of struggling with highly challenging life circumstances. These changes can appear in different domains, such as in new ways of relating to others, increased personal strength, spiritual change and appreciation of life. Furthermore, migration itself can be seen as an act of conscious decision-making and as an action of resilience and growth based on the wish to change one's life for the better (13). Refugees could be in this sense more resilient than individuals who decide to remain in Colombia. The latter, together with a posttraumatic growth phenomenon, could partially explain the high resilience levels found in Colombian refugees in Ecuador.
- **Psychological adjustment to chronic violence**: in a context of protracted conflict such as the Colombian, getting psychologically "used to" adversity, becoming stronger and thus more resilient can be an adaptive individual and collective defense mechanism. The impact of violence depends in fact on the individual's vision of self and of the world, as well as on previous expectations on "how the world is supposed to

be". In contexts of chronic violence, the world is not expected to be exactly benevolent, safe and fair and, therefore, strong elements of resistance to adversity arise in the process of social identity creation (9).

- **Impact of systemic factors of resilience**: a vast majority of the participants (90%) reported having access to one or more systemic factors of resilience and 95 % of them mentioned religious and spiritual beliefs as a major source of support in face of adversity. The presence of these environmental factors of support could be associated with a higher resilience. Religious beliefs have been identified as mental health protective factors in some investigations in different countries. Although the research evidence is mixed, showing variable protective effects according to the disorder and the population groups, religious beliefs could determine a higher resilience through prevention of negative mental health outcomes after exposure to adversity. Overall, family and social support have shown to act as promotive and / or preventive factors associated with better mental health outcomes (7).
- **Response-set bias:** there are ethno-cultural factors that need to be taken into account when measuring resiliency, as showed for instance by studies of healthy Chinese, Japanese and Korean and other non-US adults showing substantially lower CD scores as compared to healthy US origin individuals. This could be explained by a response-set bias leading some populations to under- or over-report symptoms (31). In this study, it was observed that a significantly higher proportion of male participants reported "almost always" in several of the resilience dimensions questions (stating that they were almost always optimistic, perseverant, felt almost always self-efficient, etc). One of the reasons for this observation could be that male overrate these dimensions for cultural reasons: in a society where machismo is prevalent, males are expected to show themselves strong in every situation. Men could additionally feel embarrassed to acknowledge psychological "weakness" in front of a female interviewer and thus overrate resilience.
- **Cultural dimension**: Colombian people tend to be optimistic, as shown in the World Values Survey (2012). Despite violence and daily struggle for survival, the country shows strikingly one of the highest rates of subjective perception of happiness in the world: 56% of respondents declare feeling very happy with life. Similarly, rates of life satisfaction are also very high: 87% of the participants rate 7 or above on a scale of life satisfaction from 1 to 10. This cultural aspect could also determine the high resilience observed. Similarly, an overall positive perception of life could lead respondents to overrate some of the resilience dimensions.

In terms of correlations, **male gender and good mental health were the only significant determinants of higher resilience** observed in this study.

Participants with a better mental health status were 4 times more likely to have higher resilience. Inversely, less resilient individuals had 6 times higher odds to be distressed or having a mental disorder. This finding is consistent with previous research describing a correlation of low resilience and poor mental health (22).

No association was found between exposure to adverse events and resilience levels, which confirms the diversity of mental health outcomes that can be observed in humanitarian crises contexts. The findings of individual resilience levels being independent of most of the assessed variables support the concept of resilience as a complex multidimensional construct.

Concerning systemic factors of resilience, the vast majority of participants reported one or more of these factors. About 60% of the respondents stated having access to family support, being involved in community activities and having links to the Colombian community in Ecuador. On the other hand, **only one third of the participants reported a non-precarious employment as a source of support and this was the only systemic factor of resilience showing a significant association with better mental health.** This observation has implications in terms of interventions, as will be discussed below.

The presence of systemic factors of resilience was not related to higher individual levels of resilience in this study, which is contrary to the available body of knowledge. This finding could be due to the small size of the sample or to study design issues.

Overall, the findings support the **concept of resilience as a complex and dynamic phenomenon**: resilience varies according to the environmental context of individuals and for instance, a person suffering from mental disorder can experience positive experiences of wellbeing and be thus resilient. Nevertheless, further research on how to assess and measure resilience is needed, particularly qualitative investigations to identify appropriate resilience indicators in specific contexts.

Discrimination

Almost three quarters of the sample population (74%) reported perceived discrimination in Ecuador, mostly in circumstances where participants were looking for an employment or a place to rent. Discrimination was, to the refugees saying, a major source of psychological distress, for some of them even more painful than traumatic experiences in Colombia. Previous research with this population has found that discrimination is the main determinant of a lower perceived quality of life in Ecuador (12).
As mentioned before, **discrimination was found to be negatively associated with mental health and the effect on women was more important**. Furthermore, logistic regression shows that **participants with diagnosis of psychological distress or mental disorder had higher odds of feeling discriminated**. Although the findings do not establish a causality link, some assumptions can be drown: the distress caused by discrimination negatively affects the refugees' mental health versus people may feel discriminated because of a negative vision of the environment related to depressive cognitions. Both explanations are probably true. The

observations point discrimination as one of the main predictors of poor mental health, as has been shown by other authors (11, 13, 14).

Asylum seeker status was likewise found to be related with a higher perception of discrimination, which could be again explained by a shorter length of stay of this category in Ecuador. Further, the intrinsic precariousness of this status could generate a feeling of vulnerability as well as a negative self-image, which would in turn explain a higher perception of discrimination.

Moreover, it was observed that **a higher educational level increased the odds of feeling discriminated**. This could be related to the social status loss implied by forced displacement. Objectively, people have more chance of getting a job according to their qualifications in Colombia than as a forced migrant in Ecuador, due to discrimination and lack of opportunities. Qualified refugees are frequently forced to engage in unskilled labor in Ecuador, which can increase their subjective feeling of discrimination.

Integration

In this sample, **43% of the participants reported perceived exclusion**. Out of the participants who felt excluded, 85% were in informal labor or unemployed and 82% of participants were asylum seekers and refugees. The logistical regression analysis confirmed this observation, showing that **a precarious occupational status, followed by female gender, asylum seeker status and mental disorder are the main predictors for perceived exclusion.** Sociological research has likewise shown that legal status is a determinant in the integration process: regularizing the legal status in Ecuador through a refugee visa decreases the acculturation stress and facilitates integration (4).

With regards to employment, it is worth stressing its major role in the psychosocial wellbeing of refugees. Beyond the tangible aspect of income generation, employment is closely related to a sense of identity and to a feeling of self-worth, which are under constant threat during the migration and resettlement process. **Unemployment showed to be a major risk factor for poor mental health in this population**, as reported by various authors (11,13).

Finally, it is noteworthy that the cultural similarities between Ecuador and Colombia (eg. same language, geographical proximity, shared landscapes, no major ethnic differences) could predict lower acculturation stress levels in forced migrants. Nevertheless, the information collected in this study suggests that **despite the cultural proximity, many Colombian refugees experience the host country as alien and adverse**. The main reasons for this are discrimination and integration difficulties, in addition to hardship living conditions.

Study's limitations and strengths

The first limitation of this study is the small size of the sample, which decreases the sensitivity to capture the relationships between variables. Besides, its cross-sectional nature prohibits any conclusions on causality or direction of associations. Of note, there is global lack of longitudinal and interventional studies on resilience of forced migrants. This is problematic because it hinders an understanding of resilience dynamics over time, especially within the post-displacement period where migration-related and daily living stressors may have a defining impact on the process of resilience. Additionally, it limits the identification of the temporal nature of protective or promoting factors of resilience, reducing its dynamic nature to a static concept (22). An additional limitation of this research is the fact of establishing mental disorder diagnoses through clinical interview instead of a structured psychiatric interview, which could lead to inaccurate rates of psychopathology. Finally, including participants from the Resettlement Unit in Quito (13% of the sample), whose trauma exposure is generally higher, could affect the sample's representativeness.

In terms of strengths, the research is the first study on mental health in forced migrants in Ecuador. Similarly, no study measuring resilience in Colombian conflict-affected population has been found in the literature. An additional strength of the study lies on its broader view including not only mental disorder, but also non-disordered psychological distress and going beyond a deficits approach looking at strengths and resources, both at an individual and systemic level.

6. CONCLUSIONS

The findings of this research show that psychological distress and mental disorder are prevalent among Colombian refugees in Ecuador. Poor mental health in this population is related not only to trauma exposure in Colombia, but also to severe post-migration stressors such as discrimination, poor integration and hardship in Ecuador.

Female gender was found to be significantly more vulnerable to trauma exposure, as well as to daily stressors such as perceived discrimination, poor integration and asylum seeker status. This finding stresses the importance of giving special attention to protecting the psychosocial wellbeing of women in humanitarian action.

The Colombian refugees of this sample showed high levels of resilience despite having been confronted to severe stressors. Furthermore, results showed an association between higher resilience levels and better mental health, which suggests that interventions aimed at building up resilience can have a strong impact on the psychosocial wellbeing of forced migrants in

Ecuador. Among the systemic factors of resilience assessed, non-precarious employment was the only one showing a correlation with better mental health outcomes, which confirms the major role of livelihood interventions in improving mental health of forced migrants.

Perceived discrimination, reported by three quarters of the participants, is a major source of psychological distress. Although discrimination is a complex social phenomenon, it can be tackled through sensitization campaigns. In this regard, some results of this study could be useful material to change negative stereotypes of Colombians in the Ecuadorian society. Information such as the high resilience levels despite exposure to adversity and the high level of education of many Colombian refugees could be used to support the message that this population can successfully integrate and contribute to socio-economic development in Ecuador, for instance.

Furthermore, the perception of exclusion reported by 43 % of the respondents was found to be mainly related to a precarious occupational status (informal labor and unemployment), as well as with an asylum seeker status and a poor mental health. Once again, this observation supports the idea that actions targeting access to employment and regularization of legal status can have a clear impact on the mental health of this population.

The results of this study are consistent with UNHCR's current strategy in Ecuador, which focuses on "comprehensive solutions" (legal, social and livelihoods), with the aim to provide refugees with better livelihood opportunities, enhance access to rights, foster naturalization and facilitate resettlement to third countries if needed (33).

It is noteworthy that the findings of this research largely support the mental health model of risk, promotive and protective factors that was initially proposed. These determinants can be summarized as follows:

- **Factors associated with poor mental health**: exposure to adversity , female gender (particularly female asylum seekers and female who feel excluded), perception of discrimination and lower individual levels of resilience
- **Determinants of higher individual levels of resilience**: good mental health and male gender
- **Predictors of good mental health / absence of disorder**: higher individual levels of resilience and presence of systemic factors of resilience (particularly employment)

Interventions aiming to improve mental health in this population should involve addressing risk factors such as discrimination and poor integration, providing appropriate care for individuals suffering from mental disorder, as well as strengthening promoting and preventive factors such social support and employment. Such a comprehensive intervention would be consistent with a systemic resilience approach that focuses on enhancing the social environment in ways that support refugees' wellbeing and their capacities to adapt to, cope with, and to navigate adverse environments (10).

It is important to keep in mind that, while nothing can be done to alter refugees' pre-migration experiences, public policies and humanitarian agencies can affect many post-migration stressors in order to mitigate the negative mental health consequences associated with forced displacement.

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8. ANNEX

Questionnaire

1. Interview No _____
2. Location _____
3. Date _____(/ /)
4. Interviewer _____
5. Sex (1 Male 2 Female) _____
6. Civil status (1 Married / cohabitation 2 Single / divorced) _____
7. Age _____
8. Ethnic group (to be determined by interviewer: 1 Mixed 2 Afrocolombian 3 Indigenous 4 Caucasian) _____
9. Legal status in Ecuador (1 Refugee 2 Asylum seeker 3 Refused, non-admitted 4 Non seeker 5 Other migratory situation) _____
10. Length of stay in Ecuador (1 Less than one year 2 1 to 3 years 3 4 to 10 years 4 more than 10 years) _____
11. Education (1 Primary 2 Secondary 3 University degree) _____
12. Last employment / occupation in Colombia _____
13. Main occupation last week (1 Formal employment 2 Informal labor 3 Studies 4 Searching a job 5 Domestic work) _____
14. Place of origin in Colombia (1 Rural 2 Urban, specify department) _____
15. Reason for departure from Colombia (1 Conflict / violence 2 Economic reasons / better opportunities 3 Other, specify) _____
16. Perception of integration (1 Feels excluded 2 Feels partially integrated 3 Feels totally integrated) _____
17. Perception of discrimination (0 Does not feel discriminated 1 Feels discriminated) _____
Discrimination experiences:
1 Rental of place to live____ 2 Employment (job search, remuneration) ____
3 Health services ____ 4 Education ____ 5 In shops _____ 6 Other, specify _____
18. Exposure to potentially traumatic events
1 Threats from armed groups (including extortion) _____
2 Forced recruitment (from the interviewee or close relatives) _____
3 Witness of acts perpetrated by actors of the conflict (homicide, kidnapping, massacre, enforced disappearance, sexual violence, injury, anti-personnel mines injury) _____
4 Exposition of the interviewee or close relatives to acts perpetrated by actors of the conflict (fighting, homicide, kidnapping, massacre, enforced disappearance, sexual violence, injury, anti-personnel mines injury) _____
5 Exposition of the interviewee or close relatives to interpersonal violence (assault, gender / sexual violence, child abuse, violence from criminal organizations) _____
6 Loss of property (land, housing, livestock, belongings) _____
7 Separation from close relatives due to forced displacement of the interviewee (separation from parents, children, partner) _____
8 Repeated forced displacement (more than once) _____# times_____
9 Adverse events during displacement (assault, theft, sexual violence, traffic) _____
10 Adverse events in Ecuador (assault, theft, sexual violence, traffic, child abuse, meeting actors of the conflict) _____

11 Other (specify)
_____
_____

19. Systemic factors of resilience
1 Family support (no intrafamiliar conflict) _____ 2 Participation in community groups (church, neighborhood organizations, sport clubs) _____ 3 Employment as a source of support _____ 4 Integration to the Colombian community in Ecuador _____ 5 Other (specify)
_____

20. Faith / spirituality 0 No 1 Yes
Comments from the interviewer
_____
_____
_____
_____