



FINAL REPORT

ON

LINKS BETWEEN MENTAL HEALTH AND PEACEBUILDING AMONG YOUNG PEOPLE IN SOMALIA

*Research conducted in Jubaland (Kismayo and Dolow) and South West (Baidoa) States of Somalia
between October and December 2021*

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Acronyms and abbreviations

AMHRTF	Africa Mental Health Research and Training Foundation
ASSIST	Alcohol, Smoking and Substance Involvement Screening Test
DSM	Diagnostic and Statistical Manual of Mental Disorders
GPS	global positioning system
ICD	International Classification of Diseases
IDP	internally displaced people
ILO	International Labour Organization
IOM	International Organization for Migration
MHPSS	mental health and psychosocial support
MINI	Mini International Neuropsychiatric Interview
PTSD	post-traumatic stress disorders
WHOQOL	World Health Organization quality of life
UNICEF	United Nations Children's Fund
UN	United Nations
WHO	World Health Organization

Executive summary

Over the past 3 decades, Somalia has become one of the world's most enduring humanitarian crises causing enormous damage to health and development. Armed conflict has destroyed health infrastructure, resulting in poor access to essential health services, and exposing an already vulnerable population to a high disease burden and malnutrition. As a result, much of the population, especially young people, has multilayered psychosocial problems and challenges which have never been addressed. Young people have the potential to play a crucial role and are major stakeholders in the recovery of the country. At the same time, when deprived of education and economic opportunities and while being exposed to continuous violence, they are in no position to contribute to improving the stability of their communities.

The goal of the research reported here was to study the links between the mental health of young people and peacebuilding in Somalia. This mental health and psychosocial support (MHPSS) research is the first of its kind in Somalia and is the first attempt to measure the burden of mental disorders and psychosocial problems at the population level. It is also the first large concurrent community and clinical population-based study on the full spectrum of substances of abuse using the World Health Organization (WHO) Alcohol, Smoking and Substance Involvement Screening Test (ASSIST).

The study was conducted in three districts in South and Central Somalia: Dolow (Gedo region), Kismayo (Lower Juba, region), and Baidoa (Bay region). Quantitative data were collected electronically using five tools which were uploaded onto KoBoCollect: Mini International Neuropsychiatric Interview (MINI) to assess mental disorders; WHO ASSIST; WHOQOL-BREF to assess quality of life; Harvard trauma questionnaire; and the International Labour Organization (ILO) peacebuilding monitoring and evaluation tool. A researcher-designed sociodemographic questionnaire was used to collect participants' socioeconomic and sociodemographic information. Qualitative data were collected through in-depth interviews and focus group discussions with participants with first-hand experience of MHPSS and peacebuilding efforts. Data were collected between 25 October and 15 November 2021 in collaboration with the Somali National University (SNU). The prevalence rates of mental disorders and substance use were calculated and associations between them and with sociodemographic characteristics were examined. Analysis was also done on perceived quality of life and views on peacebuilding to help explain associations.

Data were collected from 713 participants (Baidoa 225, Kismayo 258, and Dolow 230); the majority (68.1%) were younger than 35 years and 58.5% were males. Forty-six participants took part in the interviews and focus group discussions.

Key findings

- There is a high prevalence and wide range of the various mental disorders (76.9%), substance abuse disorders (lifetime, 53.3%; current, 50.6%) and poor quality of life in both non-clinical and clinical populations. The study findings confirm that Somali populations are highly

traumatized given the long history of political instability and continued violence as affirmed by qualitative interviews.

“Yes, conflicts and clashes have brought about mental illness because we face many of these challenges in our country. For example, explosions occur and the witness might live with the shock and trauma that can affect their state of mind and even cause mental illness. Stress caused by joblessness also leads to mental health issues.”

A young person from Kismayo

- Despite the high burden of mental disorders among the general population, people in the community are clearly not accessing mental health services, suggesting a lack of mental health awareness in the population and the lack of mental health facilities and human resources to provide the services, as illustrated in the following statements.

“[Persons living with mental illness] are not taken to any facilities. What I can say is that families whose loved ones have been affected by mental illness chain them in their homes without knowing they are making the patient’s condition worse. In most cases the person is taken to a Quranic treatment facility where the Quran is recited over them.”

“As a resident who lives in Kismayo, I can say that I have not seen anyone helping people with mental illness, no...not yet.”

Two residents from Kismayo

“...we involve the religious scholars who recite the Quran over the person. There is no hospital in the area specialized for such illness. We have to rush to other hospitals in order to get medicines and if missed we return them home to give special care.”

A resident of the Kabasa camp for internally displaced people

This situation calls for community-level efforts to increase awareness as well as screening for these disorders in routine clinical practice. This will lead to increased service demand which should be met with increased capacity-building for the human resources and the necessary medicine supply to meet the demand.

“We can find solutions by having doctors who are specialized in mental health and also organizations that can support these doctors so that they can attend to patients. People should also be informed about these illnesses; I think they need some awareness on how they should treat and live with mentally ill people just like other normal patients.”

A parent from Kismayo

- There was a high comorbidity between different types of mental disorders, between different types of substance use disorders and between mental disorders and substance use disorders. For instance, there was a positive relationship between post-traumatic stress disorder (PTSD) and alcohol use, where individuals with PTSD were seven times more likely to be taking alcohol. Similar patterns in other disorders were also seen where there was a positive link between alcohol abuse and several mood disorders.
- There were differences and similarities almost in equal measure between males and females and different mental disorders, community and clinic populations and internally displaced people (IDP) versus non-IDP participants. However, IDP settings accounted for nearly all the significant differences related to the three study sites, suggesting environmental factors in the distribution of different types of mental disorders. Baidoa, which is characterized by a high influx of IDP and continued insecurity, had the highest burden of mental disorders with all disorders being more prevalent than in Dolow and Kismayo.
- With quality of life and satisfaction with life (based on the domains of physical health, psychological health, social relationships, economic status and immediate environment), there was generally low satisfaction suggesting poor financial resources and investment, and limited opportunities and services, as well as low social capital. For example, 71.3% of the participants thought it was unlikely or very unlikely that they would find employment in the future. Almost half of the participants (48.1%) rated their health status as either poor or very poor and 63.8% were dissatisfied or very dissatisfied with their health. Thus, treatment of mental health conditions alone without addressing quality of life may not be sufficient for good mental health outcomes. There is a need to adopt a whole-community approach to building lasting peace with a focus on psychological, social, economic and environmental domains to allow individuals to realize their abilities, cope with stressful events, work productively, and make a contribution to their community. The suggestion is supported by the excerpt below which notes that young people have been excluded from peacebuilding activities.

“I would say no. We don’t participate in such programs [peacebuilding] because in the first place, we don’t get opportunities that would allow us. And as youth you find at most times that no one is ready to listen to our opinions or even have them implemented.”

A young person from Kismayo

- Because of the study design and without baseline data, this study could not establish any links between the preceding peacebuilding process and the subsequent findings. The observed high prevalence of mental and substance use disorders would, at face value, suggest such interventions, if carried out before this baseline, did not translate into a substantive or tangible impact on the prevalence of mental disorders, substance abuse and quality of life. This calls for better designed interventions and collaborative efforts among various implementing partners for

any future evaluation of programmes that target mental health. This is supported by the finding that the peacebuilding process was generally rated negatively in most of the variables studied.

Recommendations

1. Urgent programme development is needed to implement mental health programmes. These programmes should include data collection to document patterns of disorders and changing patterns. Studies on the health system in Somalia are needed to identify the gaps in the delivery of services and strengthening of the health systems where mental health services are integrated. This should be done using the WHO tools for health systems.
2. Given the acute shortage of mental health specialists, the widely used mhGAP-IG should be used to train community health workers, nurses and physician assistants (clinical officers), social workers and religious leaders, gatekeepers (individuals who have control and/or influence over what community interventions can be provided or accessed by the population) and indeed people with lived experiences of mental disorders (such as elders and religious leaders) on identifying/recognizing mental disorders, responding to them and referring people as primary care providers are the first contact people with mental disorders and their families may have with health providers. Such lay providers of mental health services should be integrated into the formal health system through task-sharing.
3. Given that traditional and religious views of mental health stand in contrast to the contemporary biomedical model, and this has had a negative effect on health care seeking behaviour of people with mental disorders, community-level efforts are needed to increase awareness. Community approaches have also been known to reduce stigma and discrimination that is often associated with mental illness.
4. Also at the population level, screening for mental disorders in routine clinical practice is needed to identify the mental conditions at the subclinical stage.
5. Longitudinal studies are needed to establish whether or not there are relationships between any ongoing community-wide and clinical interventions and mental health and psychosocial outcomes.

Introduction

Somalia has suffered from protracted conflict and social unrest since the collapse of the central government in 1991. The conflict, exacerbated by recurrent climatic shocks and mass displacement, has fragmented the largely youthful society, affected resilience and coping mechanisms, and amplified underlying problems of economic inequality and social injustice. The southern and central parts of Somalia are among the regions that are disproportionately affected by war, where the intermittent conflict and violence have caused mass migrations (1,2). Despite these traumatic circumstances and conflicts that continue to destroy communities and families, mental health has often been overlooked as a public health issue due to a historical focus on communicable and more immediately life-threatening conditions such as injuries. However, mental health has recently been included in the basic package of health services in the revised Essential Package of Health Services (EPHS 2020) for Somalia, meaning that all partners supporting primary health services will need to include mental health in their package of services. Including mental health as a priority health service is a progressive move towards addressing the gaps that have featured recurrently in policy discourses as the primary impediment in delivering basic mental health care (3,4).

This shift to include mental health came following sustained efforts by development partners to tackle mental, neurological and substance use disorders in Somalia and to functionally integrate mental health services into the mainstream health system. In particular, efforts to integrate mental health services into primary health care services have been ongoing in Dolow, Kismayo and Baidoa districts, where the World Health Organization (WHO), International Organization for Migration (IOM) and United Nations Children's Fund (UNICEF) through the Peacebuilding Fund of the United Nations (UN) have been addressing systemic barriers in the management of mental health problems. In the three sites (Kismayo, Baidoa and Dolow), WHO, UNICEF and IOM will have supported the implementation of the MHPSS and Peacebuilding Programme for close to 2 years by the time this report is published. Some deliverables were community mobilization, case finding, training of health care workers, as well as equipping community health workers with tools and training to deliver evidence-based interventions under the mental health gap action programme (mhGAP) (5). MHPSS has also been supported by development partners, a needs-driven process that has seen the establishment of training programmes for community health workers, public sensitization of mental health as well as community health messaging in Kismayo. In Baidoa, World Vision International supported the repair and extension of the community mental health care centre to enhance the integration of communities affected by displacement (6). Mental health professionals from Baidoa were trained by World Vision International as part of capacity-building. UNICEF-Somalia has partnered with the government, civil society organizations and the private sector to scale up multisectoral basic service delivery that also includes mental health as part of its humanitarian, development and resilience-building programmes in Somalia (7).

Against the backdrop of these community-wide interventions and efforts by the development partners, this research sought to study the linkages between mental health and peacebuilding among the Somali

young people. The findings of this study provide a basis to guide Somalia's efforts to implement and respond to the holistic health needs of its people. The findings will be a reference point for epidemiological patterns of International Classification of Diseases 10 (ICD-10) disorders, and will support development planning to address the multilayered mental health and psychosocial problems as well as provide an understanding of the demand for mental health services in Dolow (Gedo), Kismayo (Lower Juba) and Baidoa (Bay).

Methods

Study sites

This research was conducted in Dolow, Kismayo and Baidoa districts which were the sites where the MHPSS project funded by the Peacebuilding Fund was implemented. The study was conducted by the Africa Mental Health Research and Training Foundation (AMHRTF) in collaboration with the Somali National University and the Ministry of Health, Somalia. These were active sites of conflict prevention, peacekeeping, peace-making, and humanitarian and development assistance. The three sites have benefited from MHPSS activities supported by development partners as described in the introduction section. At the same time, all the urbanized areas had experienced mass displacement as a result of both natural and human-made factors, including drought, climatic variability and conflict. As a result, a 2019 report showed that Baidoa hosted over 300 000 IDP and the number of IDP camps keeps soaring (8). Kismayo city has also been receiving intermittent waves of IDP from the Lower Juba region as well as many returnees from the Dadaab refugee camps in Kenya. The urban centre of Dolow also hosts a large number of IDP affected by prolonged drought, as well as road restrictions by Al Shabab around Garbaharey and Bardhere districts. The security concerns have forced the pastoral communities to migrate to more urban locations in search of food, water and livelihoods. Despite anecdotal evidence revealing that the population is dealing with multilayered psychosocial problems and challenges, the challenges remain undocumented. This lack of scientific evidence prompted this research.

Study design

This research was a convergent parallel mixed-methods study with two stages of data collection and analysis (quantitative and qualitative). The simultaneous collection of different but complementary quantitative and qualitative data was followed by independent analysis before the two were merged during the interpretation phase. Converging the data allowed combination and comparisons of the findings which provided a strong evidential basis for meaningful interpretation.

Sampling procedure

The study used probability proportional to size sampling to ensure the proposed minimum sample size of 500 respondents from the three sites had an equal chance of being picked based on the target population. The source of statistics was the 2014 Population Estimation Survey of Somalia (9), which is the most recent nationwide population estimation undertaken in Somalia.

The inclusion criteria were: residence in the peacebuilding area in the three selected sites for at least 6 months before the study. Participants were recruited by a team of research assistants recruited by the Somali National University. Table 1 provides a summary of the population distribution and minimum sample size in the three study sites.

Table 1. Sample distribution and sample size calculation

District	Urban, no.	Rural/nomadic, no.	IDP, no.	Total, no.	Sample computation	Minimum sample size, no.
Baidoa	36 576	258 433	20 670	315 679	315 679/741 797 × 500	213
Kismayo	116 440	258 433	10 000	384 873	384 873/741 797 × 500	259
Dolow	7 559	25 908	7 778	41 245	41 245/741 797 × 500	28

IDP: internally displaced people.

While the minimum sample size was 500, the research team recruited 713 participants to increase the power of the study.

Data collection tools

A researcher-designed questionnaire was used to collect socioeconomic and sociodemographic information such as level of education and employment status. The Somali National University was involved in developing this tool to ensure sociocultural relevance.

Five quantitative measures of mental disorders, substance use, quality of life, trauma, and peacebuilding were used and uploaded to KoBoCollect (a mobile-based platform that reduces enumeration errors and allows data validation) in a consolidated format (10). The five tools were discussed in an adaptation workshop with health professionals and the first and the second translator. The translation, adaptation, piloting and adoption process improved the comprehension of the tools, helped ensure culturally appropriate language, and made it easy for the lay providers to administer the tools.

Qualitative data were collected using focus group discussions, key informant interviews and key informant discussions. Interviews were conducted in both camp and non-camp settings.

Data collection

Data were collected between 25 October and 15 November 2021 in collaboration with the Somali National University.

Quantitative data

The following tools were uploaded onto the KoBoCollect platform and used to collect the data.

1. A researcher-designed sociodemographic questionnaire which collected data on the following: internally displaced or not; community or clinic participant; sex; age group; marital status; dwelling place; level of education; work status; and household size.
2. MINI: This is a short structured diagnostic interview for the Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV (11) and ICD-10 psychiatric disorders (12) with an administration time of about 15 minutes (13). It can be administered by non-specialized

interviewers (14). It has good psychometric properties (13,15) and has been used extensively in low- and middle-income countries (16).

3. WHO ASSIST: This test collects information on the use of tobacco products, alcohol, cannabis, amphetamine-type stimulants, cocaine, sedatives and sleeping pills, hallucinogens, opioids, and other drugs. It also determines levels of risk from the use of these substances (17). The test has satisfactory psychometric properties and good discriminative validity, and it has been validated for use in low- and middle-income countries (18).
4. WHO QOL-BREF: This questionnaire assesses and measures perceptions of quality of life within the context of an individual's culture, value systems, personal goals, standards and concerns (19,20). It contains 26 items and addresses four domains: physical health (seven items), psychological health (six items), social relationships (three items) and environment (eight items). Two other items measure overall quality of life and general health. This tool has good discriminant validity, content validity, internal consistency and test-retest reliability (21,22).
5. Harvard trauma questionnaire: This instrument measures traumatic events and evaluates the scale of psychological impact in intercultural contexts (23). The symptom portion consists of 40 items, 16 of which correspond to DSM-IV criteria and 14 of which focus on other aspects of distress. Items are scored on a 4-point scale from "not at all" to "extremely". Cultural validity, reliability and the instrument's psychometric properties have been established in several culturally different settings (24,25).
6. International Labour Organization (ILO) peacebuilding monitoring and evaluation tool: This tool assesses conflict sensitivity including peacebuilding outcomes and indicators in fragile and conflict areas (26).

The tools were adapted during an adaptation workshop with a team of Somali-speaking health workers with mental health knowledge. The adaptation and translation process used the WHO guidelines for adaptation and translation of tools (27). The translated versions of the instruments were inserted side by side with the English version in the data collection platform to make it easy for the trained local interviewers to administer the tools. Data were collected electronically using KoBoCollect. To improve data quality, the research team also integrated the Global Positioning System (GPS) coordinates to capture the physical location of the data collection. All data were stored anonymously with codes in a secure server.

Data collection was coordinated by 12 trainers of trainees who were trained virtually by the AMHRTF team for 3 days on the background of the study, research ethics, including the consent procedures, and administration of the tools. A live demonstration of KoBoCollect was done by technicians from the Somalia Statistician Association. The trained trainers in turn trained independent research assistants, who collected data electronically using KoBoCollect. The overall supervisors were: Dr Abdinor Farah Mohamud in Dolow, Mr Abdulwahab Moalim Salad in Kismayo and Ms Zainab Ahmed Nor in Baidoa.

Qualitative data

A separate group of 46 people with first-hand experience of MHPSS and peacebuilding efforts took part in the interviews. In-depth interviews and focus group discussions were conducted separately and independently. Participants for the qualitative study were recruited from the community and from the staff from the Somalia Ministry of Health. Other participants who were recruited for the qualitative study included community elders/gatekeepers and service providers who had taken part in the implementation of the community-based MHPSS intervention that was supported by the Peacebuilding Fund in the three study sites.

Table 2 summarizes the target groups for both group and individual interviews as well as the number of participants who took part in the qualitative data collection. All groups of actors in the mental health and psychological support services were represented, both professional and non-professional service providers such as psychiatrists and religious leaders.

Table 2. Methods of qualitative data collection and target groups at the study sites

Study site	Method of data collection	Target group	Number of participants
Baidoa	Focus group discussion	Parents	8
		Young people	8
	Key informant interview	Community elder	1
		Mental health service provider	1
Dolow	Focus group discussion	Parents	7
		Young people	6
	Key informant interview	Health professional (Ceda Hospital)	1
		Community elder	1
		Mental health service providers; part of the team that implemented a community-based mental health intervention	1
Key informant discussion	Psychosocial mental health providers	2	
Kismayo	Key informant interview	Health service provider	1
		Community elder	1
	Key informant discussion	Parents/community elder	3
		Young people in a camp setting	2
		Young people in a non-camp setting	2

All the interviews were conducted by facilitators with a minimum qualification of an undergraduate degree in a health-related field. They had 3 days of data collection training (See Annex 1). Interviews

were conducted in the Somali language in Dolow and Kismayo, and Af Maay, a Somali dialect, in Baidoa. Verbatim transcriptions and translations were done by a linguist fluent in the local languages and these transcriptions and translations were checked for quality by an independent appraiser. Once discrepancies were resolved, minimal editing was done to address pronunciation and typos.

Since we used the online data collection method, verbal informed consent was obtained from participants before the interviews, and this included recording the consent as well as the interviews. Verbal consent was used to expedite recruitment. Most of the participants who agreed to take part in the interviews expressed extreme reluctance to proceed with enrolment with written consent, despite being informed about the privacy and confidentiality of the data. However, interviewees were provided with a copy of the information sheet for reference purposes.

Statistical analysis

Data were analysed using a parallel approach, where the quantitative and qualitative data were collected and analysed individually but concurrently. However, the qualitative and quantitative findings were then connected and the results integrated into the report.

Quantitative data

Quantitative data were checked, cleaned and exported (from KoBoCollect) to *SPSS* version 23 (IBM, Chicago, IL, USA) for analysis. Basic descriptive statistics were done with sociodemographic characteristics. To identify the correlates of substance use disorders and mental disorders, binary logistic regression analyses were performed. Univariate logistic regression analysis was used to check for associations between mental disorders and the existence of the other mental disorders, and also to identify mental disorders associated with substance use disorders. Statistical significance was set at $P < 0.05$.

Qualitative data

Qualitative data were managed using QSR NVivo, version 20, qualitative data analysis software. Thematic analysis was used to identify, analyse and interpret patterns in a deductive way. The process involved reviewing the transcripts and settling on core ideas through an iterative and incremental process. The preliminary codes that were repeated across the interviews were defined as the main themes, with concepts that emerged more peripherally being categorized as subthemes. Once the themes were named and defined, a codebook of each theme was developed by using already analysed quantitative results. Example quotations were extracted from the larger transcripts using NVivo, with long excerpts abridged using ellipsis points when producing the report.

Ethical considerations

The Somali National University Institutional Review Board and the WHO Regional Office for the Eastern Mediterranean approved the research. The ethical procedures included informed consent with the right to withdraw from the study at any time without any loss of benefits, such as access to

interventions or peacebuilding initiatives. The individual interviews took place in a private environment to protect privacy. All questionnaires were encrypted for confidentiality and the codes were kept by a designated research team member at AMHRTF. No personal identifiers were entered into the platform nor was the information accessible to unauthorized personnel.

Results

Sociodemographic characteristics

The sociodemographic characteristics of the participants overall and for the three study sites are shown in Table 3.

Table 3. Sociodemographic characteristics of respondents by study site

Sociodemographic characteristic	Total (n = 713)	Study site			χ^2 (degrees of freedom)	P
		Baidoa (n = 225)	Dolow (n = 230)	Kismayo (n = 258)		
	No. (%)	No. (%)	No. (%)	No. (%)		
<i>Internally displaced person</i>						
No	598 (83.9)	167 (74.2) ^a	176 (76.5) ^a	255 (98.8) ^b	67.39 (2)	< 0.001
Yes	115 (16.1)	58 (25.8) ^a	54 (23.5) ^a	3 (1.16) ^b		
<i>Community versus clinic</i>						
Community	637 (89.3)	201 (89.3) ^a	222 (96.5) ^b	214 (82.9) ^c	23.53 (2)	< 0.001
Clinic	76 (10.7)	24 (10.7) ^a	8 (3.5) ^b	44 (17.1) ^c		
<i>Sex</i>						
Female	296 (41.5)	83 (36.9) ^a	122 (53.0) ^b	91 (35.3) ^a	18.72 (2)	< 0.001
Male	417 (58.5)	142 (63.1) ^a	108 (47.0) ^b	167 (64.7) ^a		
<i>Age group, years</i>						
≤ 25	227 (31.8)	67 (29.8) ^a	76 (33.0) ^a	84 (32.6) ^a	57.09 (8)	< 0.001
26–35	259 (36.3)	105 (46.7) ^a	61 (26.5) ^b	93 (36.0) ^c		
36–45	134 (18.8)	28 (12.4) ^a	39 (17.0) ^a	67 (26.0) ^b		
46–55	52 (7.3)	13 (5.8) ^a	30 (13.0) ^b	9 (3.5) ^a		
≥ 56	41 (5.8)	12 (5.3) ^a	24 (10.4) ^b	5 (1.9) ^c		
<i>Marital status</i>						
Married and living together	274 (38.4)	91 (40.4) ^a	106 (46.1) ^a	77 (29.8) ^b	38.16 (8)	< 0.001
Married but living separately	86 (12.1)	37 (16.4) ^a	18 (7.8) ^b	31 (12.0) ^{a,b}		
Single	214 (30.0)	63 (28.0) ^a	51 (22.2) ^a	100 (38.8) ^b		

Divorced	95 (13.3)	23 (10.2) ^a	32 (13.9) ^a	40 (15.5) ^a		
Widowed	44 (6.2)	11 (4.9) ^a	23 (10.0) ^b	10 (3.9) ^a		
<i>Dwelling place</i>						
I have no permanent residence	120 (16.8)	5 (2.2) ^a	48 (20.9) ^b	67 (26.0) ^b	177.98 (12)	< 0.001
I live in a correctional facility (e.g. jail)	5 (0.70)	1 (0.4) ^a	0 (0.0) ^a	4 (1.6) ^a		
I live with family	121 (17.0)	35 (15.6) ^a	18 (7.8) ^b	68 (26.4) ^c		
I live with friends	17 (2.4)	7 (3.1) ^a	2 (0.9) ^a	8 (3.10) ^a		
It is occupied without payment or rent	280 (39.3)	93 (41.3) ^a	137 (59.6) ^b	50 (19.4) ^c		
It is owned or being bought by you (or someone in the household)	97 (13.6)	49 (21.8) ^a	25 (10.9) ^b	23 (8.9) ^b		
It is rented for money by you (or someone in the household).	73 (10.2)	35 (15.6) ^a	0 (0) ^b	38 (14.7) ^a		
<i>Level of education</i>						
Can't read or write	276 (38.7)	67 (29.8) ^a	102 (44.3) ^b	107 (41.5) ^b	20.03 (10)	0.029
Quranic school	294 (41.2)	99 (44.0) ^a	90 (39.1) ^a	105 (40.7) ^a		
≤ 12th grade	93 (13.0)	34 (15.1) ^a	28 (12.2) ^a	31 (12.0) ^a		
High school graduate or GED	32 (4.5)	15 (6.7) ^a	9 (3.9) ^a	8 (3.1) ^a		
Some college/AA degree/technical school training	4 (0.6)	2 (0.9) ^a	0 (0) ^a	2 (0.8) ^a		
College graduate (bachelor degree)	14 (2.0)	8 (3.6) ^a	1 (0.4) ^b	5 (1.9) ^{a,b}		
<i>Work status</i>						
Currently in school	4 (0.6)	2 (0.9) ^a	0 (0) ^a	2 (0.8) ^a	27.70 (10)	0.002
Disabled or retired and not looking for work	33 (4.6)	5 (2.2) ^a	15 (6.5) ^b	13 (5.0) ^{a,b}		
Not working and not looking for work	256 (35.9)	65 (28.9) ^a	89 (38.7) ^b	102 (39.5) ^b		
Unemployed and looking for work	326 (45.7)	110 (48.9) ^a	105 (45.7) ^a	111 (43.0) ^a		
Working full time	21 (2.9)	13 (5.8) ^a	6 (2.6) ^{a,b}	2 (0.8) ^b		
Working part time	73 (10.2)	30 (13.3) ^a	15 (6.5) ^b	28 (10.9) ^{a,b}		
<i>Household size, no. of people</i>						
≤ 4	153 (21.5)	62 (27.6) ^a	53 (23.0) ^a	38 (14.7) ^b	23.68 (6)	< 0.001

5–7	302 (42.4)	101 (44.9) ^a	97 (42.2) ^a	104 (40.3) ^a		
8–10	179 (25.1)	43 (19.1) ^a	61 (26.5) ^{a,b}	75 (29.1) ^b		
≥ 11	79 (11.1)	19 (8.4) ^a	19 (8.3) ^a	41 (15.9) ^b		

GED: General Education Diploma; AA Associate of Arts.

Note: Each superscript letter denotes a subset of study site categories whose column proportions do not differ significantly from each other at the 0.05 level.

Data were collected from 713 participants (Baidoa 225, Dolow 230 and Kismayo 258). More than half of the participants were male (58.5%), with most participants younger than 36 years, which is the young people bracket in Somalia.

The greatest proportion of the participants were married and living together (38.4%), had attended Quranic schools (41.2%), were unemployed and looking for work (45.7%), living in household size of 5–7 people (42.4%). Only 16.1% were IDP and most were from the community (89.3%).

Significant differences between study sites ($P < 0.05$) were observed for IDP, community versus clinic, sex, age group, marital status, dwelling place, level of education, work and household size.

Epidemiological patterns of ICD-10 diagnoses and psychosocial problems

Figure 1 summarizes the different cases of mental disorders from the MINI for DSM-IV and ICD-10 psychiatric disorders. Table 4 shows the prevalence of these disorders stratified by sex, community versus clinic, internal displacement and study site.

Panic disorder without agoraphobia was the most common disorder among the participants, while limited symptom attacks during lifetime was the least common disorder. All the common mental disorders with the highest prevalence in Figure 1 are linked to psychosocial aspects of peacebuilding, such as a culture of peace, peace education, trauma relief and reconciliation. For instance, generalized anxiety disorder is characterized by excessive worry about various calamities that affect the Somali people every day.

“Yes, conflicts and clashes have brought about mental illness because we face many of these challenges in our country. For example, explosions occur and the witness might live with the shock and trauma that can affect their state of mind and even cause mental illness. Stress caused by joblessness also leads to mental health issues.”

A young person from Kismayo

In some cases, people feel helpless about a non-committal government to their plight and the need for action as reported in the following comments:

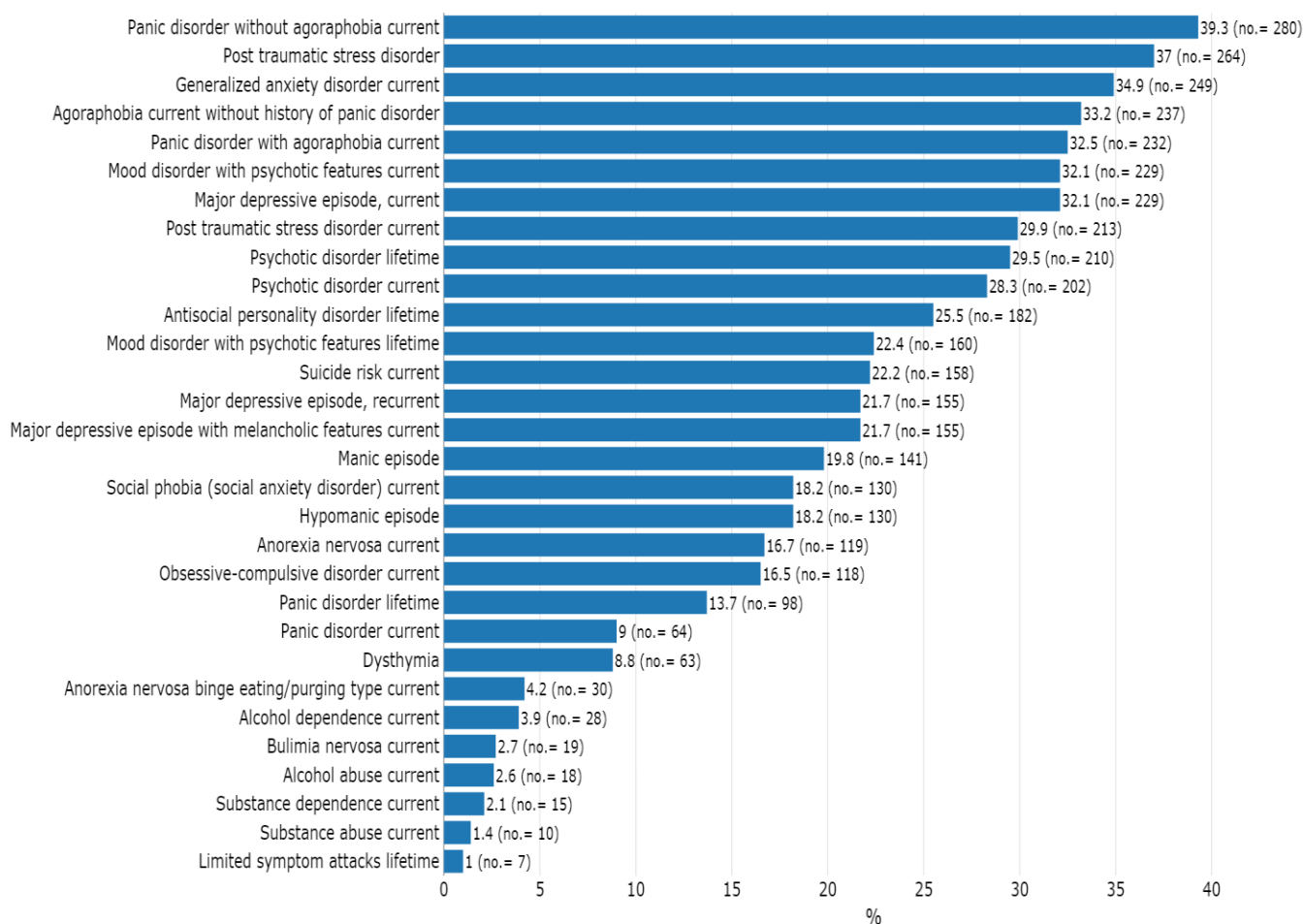
“In the name of Allah most gracious most merciful, I would say mental illness is caused by the problems we are facing in our country such as conflicts, perennial droughts, communal feuds or even poor health conditions. What we are talking about is mental illness, it affects the mind and the brain. It can be caused by stress. So, what we are talking of is common in Somalia.”

“So many people are mentally ill. They are indeed affected. It is only them and their families that can feel the burden, so, I would say that the governments and our Somali communities are doing very little in terms of addressing and supporting people with mental illness. They are suffering and of course their families share their agony.

Parents from Kismayo

“We can find solutions by having doctors who are specialized in mental health and also organizations that can support these doctors so that they can attend to patients. People should also be informed about these illnesses; I think they need some awareness on how they should treat and live with mentally ill people just like other normal patients”.

Figure 1. Prevalence of mental disorders based on ICD-10



Note: alcohol abuse current (missing = 28); substance abuse current (missing = 15).

Table 4. Prevalence of mental disorders by sex, community versus clinic, internal displacement and study site

ICD-10 mental disorders	Sex, no. (%)*			Community versus clinic, no. (%)*			Internal displacement, no. (%) *			Study site, no. (%)*			
	Males (n = 417)	Females (n = 296)	P	Community (n = 637)	Clinic (n = 76)	P	No (n = 598)	Yes (n = 115)	P	Baidoa (n = 225)	Dolow (n = 230)	Kismayo (n = 258)	P
Overall prevalence	331 (79.4)	217 (73.3)	0.058	480 (75.4)	68 (89.5)	0.006	470 (78.6)	78 (67.8)	0.012	186 (82.7) ^a	153 (66.5) ^b	209 (81.0) ^a	<0.001
Panic disorder without agoraphobia current	168 (40.3)	112 (37.8)	0.509	250 (39.2)	30 (39.5)	0.969	247 (41.3)	33 (28.7)	0.011	119 (52.9) ^a	54 (23.5) ^b	107 (41.5) ^c	<0.001
Post-traumatic stress disorder	165 (39.6)	99 (33.4)	0.095	229 (35.9)	35 (46.1)	0.085	220 (36.8)	44 (38.3)	0.765	144 (64.0) ^a	51 (22.2) ^b	69 (26.7) ^b	<0.001
Generalized anxiety disorder current	145 (34.8)	104 (35.1)	0.920	218 (34.2)	31 (40.8)	0.256	207 (34.6)	42 (36.5)	0.695	108 (48.0) ^a	62 (27.0) ^b	79 (30.6) ^b	<0.001
Agoraphobia current without history of panic disorder	158 (37.9)	79 (26.7)	0.002	206 (32.3)	31 (40.8)	0.139	198 (33.1)	39 (33.9)	0.867	114 (50.7) ^a	36 (15.7) ^b	87 (33.7) ^c	<0.001
Panic disorder with agoraphobia current	151 (36.2)	81 (27.4)	0.013	205 (32.2)	27 (35.5)	0.556	196 (32.8)	36 (31.3)	0.758	109 (48.4) ^a	43 (18.7) ^b	80 (31.0) ^c	<0.001
Mood disorder with psychotic features current	150 (36.0)	79 (26.7)	0.009	198 (31.1)	31 (40.8)	0.087	204 (34.1)	25 (21.7)	0.009	116 (51.6) ^a	46 (20.0) ^b	67 (26.0) ^b	<0.001
Major depressive episode current	142 (34.1)	87 (29.4)	0.189	206 (32.3)	23 (30.3)	0.714	188 (31.4)	41 (35.7)	0.375	114 (50.7) ^a	61 (26.5) ^b	54 (20.9) ^b	<0.001
Post-traumatic stress disorder current	128 (30.7)	85 (28.7)	0.569	191 (30.0)	22 (28.9)	0.852	192 (32.1)	21 (18.3)	0.003	99 (44.0) ^a	43 (18.7) ^b	71 (27.5) ^c	<0.001
Psychotic disorder lifetime	140 (33.6)	70 (23.6)	0.004	184 (28.9)	26 (34.2)	0.336	181 (30.3)	29 (25.2)	0.277	110 (48.9) ^a	36 (15.7) ^b	64 (24.8) ^c	<0.001
Psychotic disorder current	135 (32.4)	67 (22.6)	0.004	179 (28.1)	23 (30.3)	0.692	180 (30.1)	22 (19.1)	0.017	100 (44.4) ^a	40 (17.4) ^b	62 (24.0) ^b	<0.001
Antisocial personality disorder lifetime	117 (28.1)	65 (22.0)	0.066	160 (25.1)	22 (28.9)	0.469	147 (24.6)	35 (30.4)	0.187	103 (45.8) ^a	42 (18.3) ^b	37 (14.3) ^b	<0.001
Mood disorder with psychotic features lifetime	101 (24.2)	59 (19.9)	0.176	139 (21.8)	21 (27.6)	0.251	143 (23.9)	17 (14.8)	0.032	83 (36.9) ^a	27 (11.7) ^b	50 (19.4) ^c	<0.001
Suicide risk current	101 (24.2)	57 (19.3)	0.116	139 (21.8)	19 (25.0)	0.528	139 (23.2)	19 (16.5)	0.112	97 (43.1) ^a	8 (3.5) ^b	53 (20.5) ^c	<0.001
Level of suicide risk points													
1–5 low	61 (14.6) ^a	33 (11.1) ^a	0.463	82 (12.9) ^a	12 (15.8) ^a	0.833	80 (13.4) ^a	14 (12.2) ^a	0.197	49 (21.8) ^a	4 (1.7) ^b	41 (15.9) ^a	<0.001
6–9 moderate	8 (1.9) ^a	5 (1.7) ^a		11 (1.7) ^a	2 (2.6) ^a		13 (2.2) ^a	0 (0.0) ^a		10 (4.4) ^a	0 (0.0) ^b	3 (1.2) ^b	
> 10 high	32 (7.7) ^a	19 (6.4) ^a		46 (7.2) ^a	5 (6.6) ^a		46 (7.7) ^a	5 (4.3) ^a		38 (16.9) ^a	4 (1.7) ^b	9 (3.5) ^b	
Major depressive episode recurrent	103 (24.7)	52 (17.6)	0.023	140 (22.0)	15 (19.7)	0.654	133 (22.2)	22 (19.1)	0.459	78 (34.7) ^a	34 (14.8) ^b	43 (16.7) ^b	<0.001
Major depressive episode with melancholic features current	97 (23.3)	58 (19.6)	0.242	142 (22.3)	13 (17.1)	0.300	127 (21.2)	28 (24.3)	0.459	74 (32.9) ^a	41 (17.8) ^b	40 (15.5) ^b	<0.001
Manic episode	98 (23.5)	43 (14.5)	0.003	118 (18.5)	23 (30.3)	0.015	120 (20.1)	21 (18.3)	0.656	78 (34.7) ^a	16 (7.0) ^b	47 (18.2) ^c	<0.001
Social phobia (social anxiety disorder) current	92 (22.1)	38 (12.8)	0.002	113 (17.7)	17 (22.4)	0.323	112 (18.7)	18 (15.7)	0.434	67 (29.8) ^a	17 (7.4) ^b	46 (17.8) ^c	<0.001
Hypomanic episode	91 (21.8)	39 (13.2)	0.003	107 (16.8)	23 (30.3)	0.004	112 (18.7)	18 (15.7)	0.434	69 (30.7) ^a	16 (7.0) ^b	45 (17.4) ^c	<0.001

Anorexia nervosa current	83 (19.9)	36 (12.2)	0.006	100 (15.7)	19 (25.0)	0.04	110 (18.4)	9 (7.83)	0.005	83 (36.9) ^a	4 (1.7) ^b	32 (12.4) ^c	<0.001
Obsessive-compulsive disorder current	87 (20.9)	31 (10.5)	< 0.001	98 (15.4)	20 (26.3)	0.015	114 (19.1)	4 (3.5)	<0.001	80 (35.6) ^a	11 (4.8) ^b	27 (10.5) ^c	<0.001
Panic disorder lifetime	57 (13.7)	41 (13.9)	0.944	93 (14.6)	5 (6.6)	0.055	88 (14.7)	10 (8.7)	0.086	53 (23.6) ^a	16 (6.96) ^b	29 (11.2) ^b	<0.001
Panic disorder current	37 (8.9)	27 (9.12)	0.909	60 (9.4)	4 (5.4)	0.231	60 (10.0)	4 (3.5)	0.024	33 (14.7) ^a	11 (4.8) ^b	20 (7.8) ^b	<0.001
Dysthymia	41 (9.8)	22 (7.4)	0.266	59 (9.3)	4 (5.3)	0.246	56 (9.4)	7 (6.1)	0.257	17 (7.6) ^a	24 (10.4) ^a	22 (8.5) ^a	0.544
Anorexia nervosa binge eating/purging type current	22 (5.3)	8 (2.7)	0.092	26 (4.1)	4 (5.3)	0.628	28 (4.68)	2 (1.7)	0.150	27 (12.0) ^a	0 (0) ^b	3 (1.16) ^b	<0.001
Alcohol dependence current	20 (4.8)	8 (2.7)	0.156	25 (3.9)	3 (4.0)	0.992	28 (4.7)	0 (0.0)	0.018	24 (10.7) ^a	0 (0.0) ^b	4 (1.6) ^b	<0.001
Bulimia nervosa current	15 (3.6)	4 (1.4)	0.067	17 (2.7)	2 (2.6)	0.985	18 (3.01)	1 (0.9)	0.192	17 (7.56) ^a	0 (0) ^b	2 (0.78) ^b	<0.001
Alcohol abuse current ^d	16 (4.0)	2 (0.7)	0.007	15 (2.4)	3 (4.0)	0.430	17 (2.8)	1 (0.9)	0.197	12 (5.6) ^a	1 (0.43) ^b	5 (2.07) ^b	0.003
Substance dependence current	13 (3.1)	2 (0.7)	0.025	15 (2.4)	0 (0.0)	0.176	15 (2.51)	0 (0.0)	0.086	8 (3.6) ^a	0 (0.0) ^b	7 (2.7) ^a	0.021
Substance abuse current ^e	9 (2.2)	1 (0.3)	0.041	10 (1.6)	0 (0.0)	0.271	10 (1.68)	0 (0.0)	0.162	7 (3.1) ^a	0 (0.0) ^b	3 (1.2) ^{a,b}	0.017
Limited symptom attacks lifetime	3 (0.72)	4 (1.4)	0.399	6 (0.9)	1 (1.3)	0.755	5 (0.8)	2 (1.7)	0.368	5 (2.2) ^a	2 (0.9) ^{a,b}	0 (0.0) ^b	0.046

^dn = 685 (data on 28 were missing); ^en = 698 (data on 15 were missing)

Note: *P*-value based on the chi-squared test or Fisher exact test when appropriate. Each superscript letter (a,b,c) denotes a subset of sex/community vs clinic/internal displacement/study site categories whose column proportions do not differ significantly from each other at the 0.05 level.

A significantly higher proportion of males had mental disorders than females for: major depressive episode recurrent, hypomanic episode, manic episode, panic disorder with agoraphobia current, agoraphobia current without history of panic disorder, social phobia (social anxiety disorder) current, obsessive-compulsive disorder current, alcohol abuse current, substance dependence current, substance abuse current, mood disorder with psychotic features current, psychotic disorder current, psychotic disorder lifetime and anorexia nervosa current (all $P < 0.05$).

A significantly higher proportion of clinic participants had mental disorders than community participants for: hypomanic episode, manic episode, obsessive-compulsive disorder current and anorexia nervosa current (all $P < 0.05$). However, for many other disorders, the prevalence rates were similar for both community and clinic participants suggesting the community participants had not sought help for their condition from the health services for whatever reason. This is not uncommon as illustrated in the following statements.

“In my view, when this illness affects our community, they won’t admit it as a mental illness but approach it in a different way. They simply do that for the fear of two things. First, the stigmatization of the person with mental illness and second saying that he/she has been possessed by evil spirits or even saying that the person is suffering from stress disorder. So, upon realizing the person’s suffering, they will avoid taking the patient to a hospital. Even when they have no idea about such illness, they will still say it is something else. That’s my view.”

“.... It’s a bit hard for my Somali community to always easily follow what they are told. Inadequate public awareness campaigns in the community contribute significantly to the lack of change on how society approaches the issue at hand.”

Two elders from Kismayo

“[Persons living with mental illness] are not taken to any facilities. What I can say is that families whose loved ones have been affected by mental illness chain them in their homes without knowing they are making the patient’s condition worse. In most cases the person is taken to a Quranic treatment facility where the Quran is recited over them.”

“As a resident who lives in Kismayo, I can say that I have not seen anyone helping people with mental illness, no...not yet.”

Two residents from Kismayo

“...we involve the religious scholars who recite the Quran over the person. There is no hospital in the area specialized for such illness. We have to rush to other hospitals in order to get medicines and if unavailable, we bring them home to give special care.”

A resident of the Kabasa camp for internally displaced people

A significantly higher proportion of participants who were not internally displaced had mental disorders than internally displaced respondents for: panic disorder current, panic disorder without

agoraphobia current, obsessive-compulsive disorder current, post-traumatic stress disorder current, alcohol dependence current, mood disorder with psychotic features lifetime, mood disorder with psychotic features current, psychotic disorder current and anorexia nervosa current (all $P < 0.05$).

There were no significant differences ($P < 0.05$) in dysthymia between Baidoa, Dolow and Kismayo sites. A significantly higher proportion of participants from Baidoa and Kismayo had substance dependence current than from Dolow. A significantly lower proportion of participants from Dolow and Kismayo than those from Baidoa had had mental disorders for: PTSD, major depressive episode current, major depressive episode recurrent, major depressive episode with melancholic features current, panic disorder lifetime, panic disorder current, alcohol dependence current, mood disorder with psychotic features current, psychotic disorder current, bulimia nervosa current, anorexia nervosa binge eating/purging type current, generalized anxiety disorder current and antisocial personality disorder lifetime (all $P < 0.05$).

Significant group differences were observed between the study sites and the level of suicide risk. A significantly lower proportion of participants from Dolow and Kismayo had a moderate and high levels of suicide risk than those from Baidoa ($P < 0.001$). A significantly higher proportion of participants from Baidoa and Kismayo had a low level of suicide risk than those from Dolow ($P < 0.001$).

Co-occurrence of mental disorders

The following statistically significant associations were found between mental disorders ($P < 0.005$). (See Annex 2, Table A2.1)

- Current and generalized anxiety disorder current was significantly associated with all mental disorders except dysthymia current and limited symptom attacks lifetime.
- Major depressive episode current, major depressive episode recurrent and psychotic disorder lifetime were significantly associated with all mental disorders except dysthymia current.
- Dysthymia current was significantly associated with manic episode, social phobia (social anxiety disorder) current and mood disorder with psychotic features current.
- Hypomanic episode was significantly associated with all mental disorders except dysthymia current, limited symptom attacks lifetime, alcohol dependence current, alcohol abuse current, substance dependence current, substance abuse current and anorexia nervosa binge eating/purging type current.
- Manic episode was significantly associated with all mental disorders except limited symptom attacks lifetime and alcohol abuse current.
- Limited symptom attacks lifetime was significantly associated with major depressive episode current, major depressive episode recurrent, mood disorder with psychotic features current and psychotic disorder lifetime.

- Panic disorder current and bulimia nervosa current were significantly associated with all mental disorders except dysthymia current, limited symptom attacks lifetime, alcohol dependence current and alcohol abuse current.
- Panic disorder without agoraphobia current was significantly associated with all mental disorders except dysthymia current, limited symptom attacks lifetime, alcohol abuse current, substance dependence current and substance abuse current.
- Panic disorder with agoraphobia current, agoraphobia current without history of panic disorder and psychotic disorder current were significantly associated with all mental disorders except dysthymia current, limited symptom attacks lifetime and alcohol abuse current.
- Social phobia (social anxiety disorder) current was significantly associated with all mental disorders except limited symptom attacks lifetime and alcohol abuse current.
- Alcohol dependence current was significantly associated with all mental disorders except dysthymia current, hypomanic episode, limited symptom attacks lifetime, panic disorder current, bulimia nervosa current and anorexia nervosa binge eating/purging type current.
- Alcohol abuse current was significantly associated with all mental disorders except dysthymia current, hypomanic episode, manic episode, limited symptom attacks lifetime, panic disorder current, panic disorder without agoraphobia current, panic disorder with agoraphobia current, agoraphobia current without history of panic disorder, social phobia (social anxiety disorder) current, psychotic disorder current, bulimia nervosa current and anorexia nervosa binge eating/purging type current.
- Substance dependence current was significantly associated with all mental disorders except dysthymia current, hypomanic episode, limited symptom attacks lifetime, panic disorder without agoraphobia current and antisocial personality disorder lifetime.
- Substance abuse current was significantly associated with all mental disorders except dysthymia current, hypomanic episode, limited symptom attacks lifetime and panic disorder without agoraphobia current.
- Mood disorder with psychotic features current was significantly associated with all mental disorders.
- Anorexia nervosa binge eating/purging type current was significantly associated with all mental disorders except dysthymia current, hypomanic episode, limited symptom attacks lifetime, alcohol dependence current and alcohol abuse current.
- Antisocial personality disorder lifetime was significantly associated with all mental disorders except dysthymia current, limited symptom attacks lifetime and substance.

Epidemiological patterns of substance use

Figure 2 summarizes the lifetime use, use in the past 3 months and a current strong desire, as measured by the WHO ASSIST tool, for the various substances. These are arranged in descending order of frequency. Tobacco was the most used substance while cocaine was the least used.

The following subsection describes the association of substance use, as measured by the WHO ASSIST tool, with sex, community versus clinic, internal displacement and study site (See Annex 3, Table A3.1).

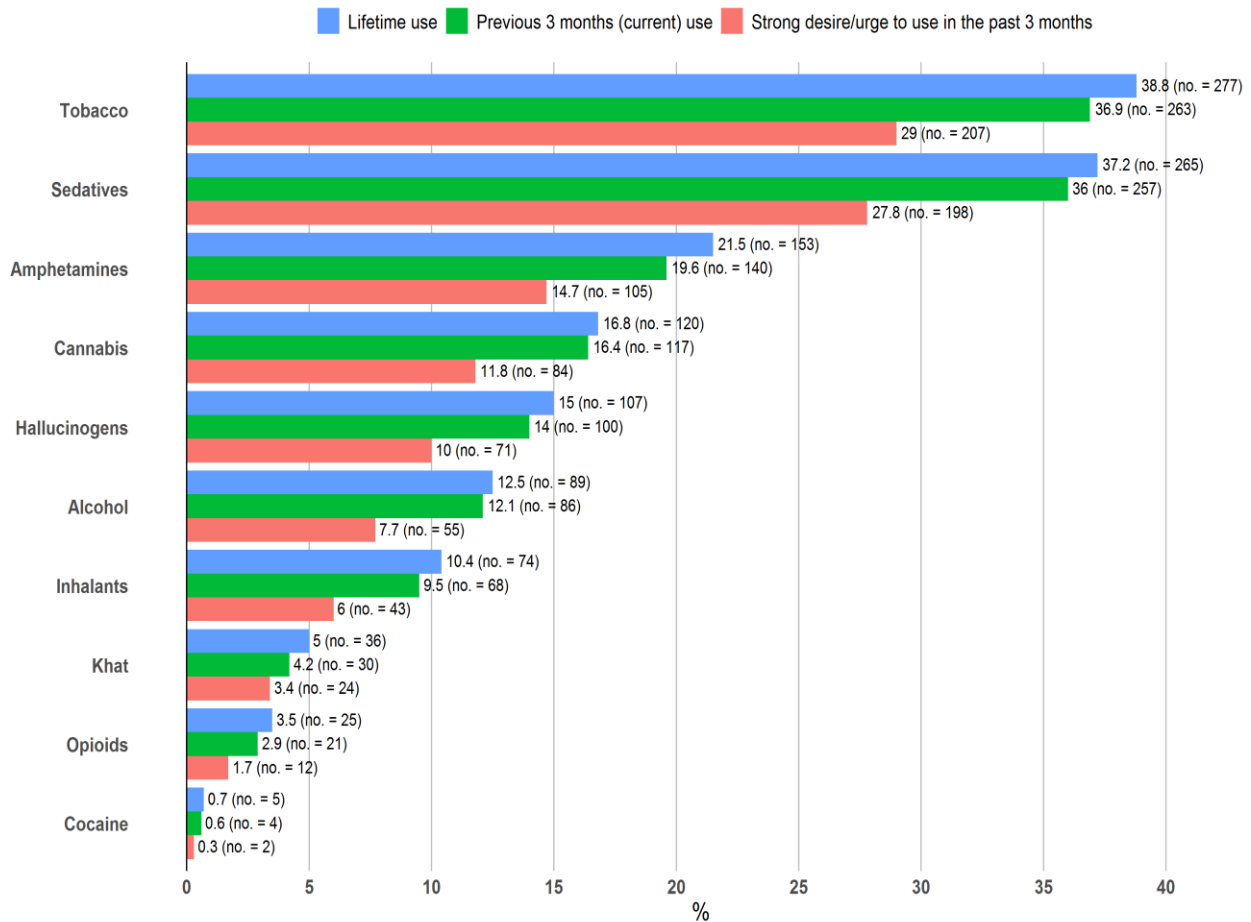
Lifetime use

- A significantly higher proportion of males had lifetime substance use than females for: tobacco (63.1% vs 4.7%), alcohol (20.6% vs 1.0%), cannabis (27.6% vs 1.7%), amphetamine (33.6% vs 4.4%), inhalants (17.3% vs 0.7%), sedatives (48.7% vs 20.9%), hallucinogens (21.3% vs 6.1%) and khat (8.6% vs 0.0%); all $P < 0.05$.
- A significantly higher proportion of clinic participants had lifetime substance use than community participants for: amphetamines (35.5% vs 19.8%), sedatives (63.2% vs 34.1%) and hallucinogens (26.3% vs 13.7%); all $P < 0.05$.
- A significantly higher proportion of participants who were not internally displaced had lifetime substance use than internally displaced participants for: tobacco (42.8% vs 18.3%), alcohol (14.5% vs 1.74%), cannabis (19.7% vs 1.7%), amphetamines (24.6% vs 5.2%), inhalants (12.4% vs 0.0%), sedatives (42.6% vs 8.7%) and hallucinogens (17.6% vs 1.7%); all $P < 0.05$.

There was no significant difference in cocaine use between participants in Baidoa, Dolow and Kismayo.

A significantly higher proportion of participants from Dolow and Kismayo used khat compared with those from Baidoa. A significantly higher proportion of participants from Baidoa and Kismayo than those from Dolow used tobacco, sedatives and hallucinogens. There were significant differences in the proportions of participants in Baidoa, Dolow and Kismayo with substance use for, respectively: alcohol (34.2% vs 0.4% vs 4.3%), cannabis (41.8% vs 0.4% vs 9.7%), amphetamines (41.3% vs 0.4% vs 22.9%), inhalants (27.1% vs 0.0% vs 5.0%) and opioids (7.6% vs 0.0% vs 3.1%); all $P < 0.05$.

Figure 2. Prevalence of substance use by type of substance and time of use ($n = 713$)



Current use

- A significantly higher proportion of males than females were current substance users for: tobacco (59.7% vs 4.7%), alcohol (20.1% vs 0.7%), cannabis (27.1% vs 1.4%), amphetamines (30.9% vs 3.7%), inhalants (16.1% vs 0.3%), sedatives (47.2% vs 20.3%), hallucinogens (20.1% vs 5.4%) and khat (7.2% vs 0.0%); all $P < 0.05$.
- A significantly higher proportion of clinic participants than community participants were current substance users for: amphetamines (30.3% vs 18.4%), sedatives (56.6% vs 33.6%) and hallucinogens (25.0% vs 12.7%); all $P < 0.05$.
- A significantly higher proportion of participants who were not internally displaced than internally displaced participants were current substance users for: tobacco (40.5% vs 18.3%), alcohol (14.0% vs 1.7%), cannabis (19.2% vs 1.7%), amphetamines (22.4% vs 5.2%), inhalants (11.4% vs 0.0%), sedatives (41.3% vs 8.7%) and hallucinogens (16.4% vs 1.7%); all $P < 0.05$.

- A significantly higher proportion of participants from Dolow and Kismayo than those from Baidoa currently used khat. A significantly higher proportion of participants from Baidoa and Kismayo than those from Dolow were current substance users for tobacco, sedatives and hallucinogens. There were significant differences in the proportions of participants in Baidoa, Dolow and Kismayo with substance use for, respectively: alcohol (34.2% vs 0.4% vs 3.1%), cannabis (41.3% vs 0.4% vs 8.9%), amphetamines (38.2% vs 0.4% vs 20.5%), inhalants (26.2% vs 0.0% vs 3.5%) and opioids (6.7% vs 0.0% vs 2.3%); all $P < 0.05$.

Co-occurrence of substance use and ICD-10 mental disorders

There was high comorbidity of substance-related disorders and ICD-10 disorders (Table 5). For example, individuals who had PTSD were seven times more likely to be taking alcohol. The results also showed similar patterns in other disorders where there was a positive relationship between alcohol use and several mood disorders (Table 5). The comorbidity does increase the risk of mood disorders and violent behaviours.

Cannabis use was common among respondents with mental disorders. Participants with suicide risk were five times more likely to be using cannabis than participants without this disorder (Table 5). Individuals with anxiety, PTSD and antisocial personality disorder in their lifetime were also more likely to be using cannabis.

Other substance-related disorders co-occurring with ICD-10 disorders are summarized in Table 5.

Table 5. Correlation of substance use with ICD-10 mental disorders

ICD-10 mental disorders	Tobacco current	Alcohol current	Cannabis current	Cocaine current	Amphetamine current
	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)
Post-traumatic stress disorder	1.98 (1.44–2.71)***	7.70 (4.59–13.5)***	4.62 (3.04–7.12)***	NS	2.62 (1.80–3.82)***
Major depressive episode current	1.45 (1.05–2.00)*	3.68 (2.32–5.88)***	2.78 (1.85–4.17)***	NS	1.73 (1.18–2.52)**
Major depressive episode recurrent	1.91 (1.33–2.74)***	4.87 (3.04–7.81)***	3.49 (2.28–5.32)***	NS	1.99 (1.31–3.00)**
Major depressive episode with melancholic features current	1.56 (1.08–2.23)*	4.60 (2.87–7.37)***	2.76 (1.80–4.22)***	NS	1.59 (1.04–2.41)*
Dysthymia current	NS	NS	NS	NS	NS
Suicide risk current	2.73 (1.90–3.93)***	3.16 (1.96–5.05)***	5.11 (3.35–7.80)***	NS	3.49 (2.34–5.20)***
Hypomanic episode	2.75 (1.87–4.07)***	2.82 (1.71–4.59)***	4.15 (2.68–6.42)***	NS	3.42 (2.25–5.20)***
Manic episode	2.50 (1.72–3.64)***	5.40 (3.36–8.70)***	5.01 (3.27–7.71)***	12.4 (1.58–252)*	2.94 (1.94–4.44)***
Panic disorder lifetime	1.87 (1.22–2.88)**	2.89 (1.68–4.87)***	2.85 (1.74–4.59)***	NS	NS
Limited symptom attacks lifetime	NS	NS	NS	NS	NS
Panic disorder current	NS	3.04 (1.62–5.50)***	2.59 (1.44–4.53)**	NS	NS
Panic disorder without agoraphobia current	1.41 (1.03–1.92)*	3.36 (2.11–5.44)***	2.41 (1.61–3.62)***	NS	2.00 (1.38–2.91)***
Panic disorder with agoraphobia current	1.65 (1.19–2.27)**	3.80 (2.40–6.09)***	2.95 (1.97–4.43)***	NS	1.88 (1.29–2.75)**
Agoraphobia current without history of panic disorder	1.78 (1.29–2.45)***	4.34 (2.72–7.03)***	4.00 (2.66–6.07)***	NS	2.18 (1.49–3.17)***
Social phobia (social anxiety disorder) current	2.98 (2.02–4.42)***	4.89 (3.02–7.89)***	4.58 (2.96–7.08)***	NS	2.60 (1.69–3.95)***
Obsessive–compulsive disorder current	2.79 (1.87–4.19)***	10.1 (6.16–16.5)***	7.12 (4.56–11.2)***	NS	5.24 (3.41–8.05)***
Post-traumatic stress disorder current	1.68 (1.21–2.34)**	4.18 (2.64–6.71)***	4.51 (2.99–6.85)***	NS	3.24 (2.22–4.76)***
Alcohol dependence current	2.76 (1.29–6.16)*	4.45 (1.91–9.83)***	5.65 (2.60–12.3)***	26.3 (3.06–226)**	4.44 (2.05–9.62)***
Alcohol abuse current	6.24 (2.21–22.2)**	11.0 (4.21–29.8)***	7.27 (2.80–19.5)***	41.6 (4.76–365)***	3.54 (1.33–9.17)**
Substance dependence current	11.6 (3.19–74.9)**	22.8 (7.60–84.1)***	8.19 (2.90–24.9)***	174 (20.7–3,668)***	8.74 (3.05–28.5)***

Substance abuse current	NS	32.0 (7.85–215)***	12.6 (3.43–58.9)***	25.9 (1.22–226)**	9.98 (2.74–46.8)***
Mood disorder with psychotic features lifetime	2.09 (1.46–2.99)***	6.16 (3.85–9.94)***	4.15 (2.72–6.32)***	NS	2.77 (1.85–4.12)***
Mood disorder with psychotic features current	1.70 (1.23–2.35)**	6.67 (4.10–11.1)***	4.47 (2.97–6.81)***	NS	2.60 (1.78–3.81)***
Psychotic disorder current	2.03 (1.46–2.84)***	6.53 (4.06–10.7)***	4.01 (2.66–6.06)***	NS	3.09 (2.11–4.55)***
Psychotic disorder lifetime	2.12 (1.53–2.95)***	5.09 (3.19–8.25)***	4.24 (2.82–6.43)***	NS	2.87 (1.96–4.20)***
Anorexia nervosa current	3.10 (2.07–4.66)***	8.73 (5.36–14.3)***	7.77 (4.98–12.2)***	NS	6.53 (4.26–10.1)***
Bulimia nervosa current	5.00 (1.89–15.6)**	11.3 (4.46–30.2)***	7.63 (3.02–20.1)***	NS	4.82 (1.91–12.4)***
Anorexia nervosa binge eating/purging type current	4.25 (1.98–9.91)***	10.0 (4.68–21.6)***	7.62 (3.61–16.5)***	NS	2.49 (1.12–5.27)*
Generalized anxiety disorder current	1.57 (1.14–2.15)**	5.35 (3.31–8.86)***	3.62 (2.41–5.49)***	NS	2.85 (1.96–4.17)***
Antisocial personality disorder lifetime	1.96 (1.39–2.77)***	6.99 (4.35–11.4)***	5.35 (3.53–8.16)***	NS	3.51 (2.38–5.19)***

ICD-10 mental disorders	Inhalants current	Sedatives current	Hallucinogens current	Opioids current	Khat current
	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)
Post-traumatic stress disorder	5.59 (3.24–10.1)***	1.80 (1.32–2.47)***	2.05 (1.34–3.14)***	3.54 (1.45–9.44)**	NS
Major depressive episode current	3.96 (2.37–6.71)***	NS	1.57 (1.01–2.42)*	3.58 (1.49–9.16)**	NS
Major depressive episode recurrent	5.33 (3.18–8.99)***	NS	1.67 (1.03–2.66)*	NS	NS
Major depressive episode with melancholic features current	4.64 (2.77–7.79)***	NS	NS	NS	NS
Dysthymia current	NS	1.82 (1.08–3.06)*	NS	NS	4.15 (1.67–9.43)**
Suicide risk current	2.97 (1.76–4.98)***	2.19 (1.53–3.14)***	4.44 (2.85–6.93)***	4.08 (1.69–9.97)**	NS
Hypomanic episode	3.73 (2.18–6.29)***	3.67 (2.48–5.47)***	1.95 (1.18–3.14)**	NS	2.74 (1.23–5.83)*
Manic episode	7.16 (4.25–12.2)***	2.82 (1.94–4.12)***	2.05 (1.27–3.27)**	NS	NS
Panic disorder lifetime	3.30 (1.84–5.75)***	NS	NS	NS	NS
Limited symptom attacks lifetime	NS	NS	NS	14.5 (1.99–72.0)**	NS

Panic disorder current	3.44 (1.76–6.43)***	NS	NS	NS	NS
Panic disorder without agoraphobia current	3.18 (1.90–5.43)***	1.89 (1.38–2.58)***	1.75 (1.14–2.67)*	5.19 (2.01–16.0)**	0.10 (0.02–0.35)**
Panic disorder with agoraphobia current	4.79 (2.85–8.27)***	1.56 (1.13–2.16)**	NS	NS	NS
Agoraphobia current without history of panic disorder	4.29 (2.56–7.36)***	1.89 (1.37–2.60)***	NS	NS	0.07 (0.00–0.31)**
Social phobia (social anxiety disorder) current	6.14 (3.64–10.4)***	1.81 (1.23–2.67)**	2.07 (1.26–3.33)**	NS	NS
Obsessive–compulsive disorder current	8.95 (5.27–15.3)***	3.18 (2.13–4.80)***	3.64 (2.26–5.81)***	3.26 (1.26–7.91)*	NS
Post-traumatic stress disorder current	5.16 (3.07–8.87)***	1.93 (1.39–2.69)***	3.52 (2.29–5.45)***	6.24 (2.50–17.7)***	NS
Alcohol dependence current	7.13 (3.11–15.8)***	3.96 (1.81–9.33)***	5.96 (2.71–13.0)***	20.7 (7.47–55.1)***	NS
Alcohol abuse current	8.92 (3.28–23.5)***	NS	3.30 (1.12–8.72)*	11.6 (3.05–36.9)***	NS
Substance dependence current	12.2 (4.22–35.8)***	12.1 (3.31–77.8)**	7.53 (2.64–21.9)***	NS	NS
Substance abuse current	15.5 (4.31–62.0)***	16.6 (3.09–307)**	15.3 (4.17–71.9)***	NS	NS
Mood disorder with psychotic features lifetime	7.21 (4.28–12.4)***	2.20 (1.54–3.14)***	2.10 (1.32–3.30)**	3.28 (1.34–7.94)**	NS
Mood disorder with psychotic features current	6.66 (3.88–11.9)***	2.24 (1.62–3.10)***	2.31 (1.50–3.55)***	3.58 (1.49–9.16)**	0.22 (0.05–0.64)*
Psychotic disorder current	6.08 (3.60–10.5)***	2.09 (1.49–2.91)***	2.05 (1.32–3.16)**	NS	NS
Psychotic disorder lifetime	4.92 (2.94–8.41)***	2.38 (1.71–3.31)***	1.92 (1.24–2.96)**	3.33 (1.39–8.27)**	NS
Anorexia nervosa current	6.59 (3.89–11.2)***	3.24 (2.17–4.89)***	4.03 (2.51–6.40)***	3.22 (1.25–7.83)*	3.08 (1.38–6.56)**
Bulimia nervosa current	15.4 (5.98–41.2)***	NS	3.77 (1.37–9.62)**	NS	NS
Anorexia nervosa binge eating/purging type current	8.73 (3.97–18.9)***	NS	2.34 (0.95–5.21)*	NS	NS
Generalized anxiety disorder current	4.23 (2.52–7.29)***	1.75 (1.28–2.41)***	3.72 (2.41–5.81)***	3.14 (1.30–8.03)*	2.21 (1.06–4.66)*
Antisocial personality disorder lifetime	6.74 (3.99–11.6)***	1.89 (1.34–2.66)***	3.14 (2.03–4.86)***	3.35 (1.39–8.18)**	NS

ICD-10: International Classification of Diseases 10; COR: crude odds ratio; CI: confidence interval; NS: not significant.

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

Quality of life and well-being

Quality of life is a multidimensional phenomenon comprising physical, psychological, social relationship and economic status as well as environmental conditions. While peacebuilding processes continue to make some improvements to Somali society in all these five domains, several perceived needs were found that were related to productive and meaningful lives. For instance, self-rated physical health status was one of the variable sets for appraising outcomes of the peacebuilding process. Nearly half of the respondents (48.1%) reported their health status as either poor or very poor (Table 6), a finding that represents diminished activity, and a sense of hopelessness and demoralization, which are factors that work against peacebuilding efforts in any given society.

Table 5. Quality of life: health status

Question	No. of respondents (%); <i>n</i> = 713				
	Very good	Good	Neither poor nor good	Poor	Very poor
How would you rate your quality of life?	1 (0.1)	132 (18.5)	237 (33.2)	246 (34.5)	97 (13.6)
How well are you able to get around?	8 (1.1)	193 (27.1)	149 (20.9)	257 (36.0)	106 (14.9)

Table 7 provides a summary of standards, hopes, pleasures and concerns about life, and quality of life aspects that are conventionally used in measuring the progress in stabilization and reconstruction.

Table 6. Quality of life: perception of life

Question	No. of respondents (%); <i>n</i> = 713				
	Not at all	A little	Moderate amount	Very much	An extreme amount
How much do you enjoy life?	120 (16.8)	281 (39.4)	216 (30.3)	86 (12.1)	10 (1.4)
To what extent do you feel your life to be meaningful?	71 (10.0)	215 (30.2)	194 (27.2)	216 (30.3)	17 (2.4)
How safe do you feel in your daily life?	118 (16.5)	260 (36.5)	205 (28.8)	115 (16.1)	15 (2.1)
How healthy is your physical environment	78 (10.9)	152 (21.3)	248 (34.8)	211 (29.6)	24 (3.4)

The poor outcomes in the domains of quality of life were also replicated in satisfaction levels, where only 22.0 % of the participants considered they were satisfied or very satisfied with their health (Table 8).

Table 7. Satisfaction with aspects of one’s life

Question	No. of respondents (%); n= 713				
	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
How satisfied are you with your own health?	5 (0.7)	152 (21.3)	101 (14.2)	277 (38.8)	178 (25.0)
How satisfied are you with your sleep?	15 (2.1)	218 (30.6)	125 (17.5)	242 (33.9)	113 (15.8)
How satisfied are you with your ability to perform daily activities?	6 (0.8)	182 (25.5)	110 (15.4)	259 (36.3)	156 (21.9)
How satisfied are you with your capacity to work?	7 (1)	152 (21.3)	109 (15.3)	289 (40.5)	156 (21.9)
How satisfied are you with yourself?	31 (4.3)	374 (52.5)	114 (16)	126 (17.7)	68 (9.5)
How satisfied are you with the support you get from friends?	7 (1.0)	171 (24.0)	137 (19.2)	255 (35.8)	143 (20.1)
How satisfied are you with the conditions of your living space?	9 (1.3)	170 (23.8)	93 (13)	279 (39.1)	162 (22.7)
How satisfied are you with your access to health services?	8 (1.1)	99 (13.9)	92 (12.9)	315 (44.2)	199 (27.9)
How satisfied are you with your transport?	9 (1.3)	111 (15.6)	77 (10.8)	343 (48.1)	173 (24.3)

Peacebuilding

Overall, the great majority of the different perceptions had mean scores: between 0.02 and 0.67 on the binary response scale 0–1; 2.14 on the response scale 1–3; between 1.77 and 2.66 on the response scale 1–4; and between 2.25 and 3.12 on the response scale 1–5. (See Annex 4, Table A4.1)

The pessimism was also reported in economic confidence about employment options, where the overall confidence in the ability to find employment was low (Table 9).

Table 8. Confidence about employment options in the future by community vs clinic, sex and study site

Perceived future employment	Respondent	No. of respondents (%); n= 713			
		Very unlikely	Unlikely	Likely	Very likely
Remain unemployed	Community	168 (23.6)	125 (17.5)	264 (37.0)	80 (11.2)
	Clinic	26 (3.6)	13 (1.8)	33 (4.6)	4 (0.6)
Further skills development	Community	217 (30.4)	207 (29.0)	189 (26.5)	24 (3.4)
	Clinic	24 (3.4)	13 (1.8)	34 (4.8)	5 (0.7)
Job without contractor social security	Community	239 (33.5)	261 (36.6)	125 (17.5)	12 (1.7)
	Clinic	35 (4.9)	23 (3.2)	16 (2.2)	2 (0.3)
Self-employment	Community	145 (20.3)	166 (23.3)	251 (35.2)	75 (10.5)
	Clinic	17 (2.4)	8 (1.1)	42 (5.9)	9 (1.3)
Part-time employment	Community	199 (27.9)	208 (29.2)	202 (28.3)	28 (3.9)
	Clinic	33 (4.6)	15 (2.1)	25 (3.5)	3 (0.4)
Full-time employment	Community	208 (29.2)	221 (31.0)	167 (23.4)	41 (5.8)
	Clinic	31 (4.3)	16 (2.2)	23 (3.2)	6 (0.8)
Remain unemployed	Male	119 (16.7)	88 (12.3)	170 (23.8)	40 (5.6)
	Female	75 (10.5)	50 (7.0)	127 (17.8)	44 (6.2)
Further skills development	Male	129 (18.1)	129 (18.1)	138 (19.4)	21 (2.9)
	Female	112 (15.7)	91 (12.8)	85 (11.9)	8 (1.1)
Job without contractor social security	Male	153 (21.5)	167 (23.4)	90 (12.6)	7 (1.0)
	Female	121 (17.0)	117 (16.4)	51 (7.2)	7 (1.0)
Self-employment	Male	84 (11.8)	108 (15.1)	166 (23.3)	59 (8.3)
	Female	78 (10.9)	66 (9.3)	127 (17.8)	25 (3.5)
Part-time employment	Male	127 (17.8)	137 (19.2)	135 (18.9)	18 (2.5)
	Female	105 (14.7)	86 (12.1)	92 (12.9)	13 (1.8)
Fulltime employment	Male	125 (17.5)	138 (19.4)	125 (17.5)	29 (4.1)
	Female	114 (16.0)	99 (13.9)	65 (9.1)	18 (2.5)
Remain unemployed	Baidoa	46 (6.5)	72 (10.1)	90 (12.6)	17 (2.4)
	Dolow	63 (8.8)	40 (5.6)	87 (12.2)	40 (5.6)
	Kismayo	85 (11.9)	26 (3.6)	120 (16.8)	27 (3.8)
Further skills development	Baidoa	53 (7.4)	69 (9.7)	89 (12.5)	14 (2.0)
	Dolow	75 (10.5)	76 (10.7)	76 (10.7)	3 (0.4)
	Kismayo	113 (15.8)	75 (10.5)	58 (8.1)	12 (1.7)
Job without contractor social security	Baidoa	59 (8.3)	85 (11.9)	74 (10.4)	7 (1.0)
	Dolow	90 (12.6)	97 (13.6)	40 (5.6)	3 (0.4)
	Kismayo	125 (17.5)	102 (14.3)	27 (3.8)	4 (0.6)
Self-employment	Baidoa	31 (4.3)	49 (6.9)	88 (12.3)	57 (8.0)
	Dolow	56 (7.9)	57 (8.0)	108 (15.1)	9 (1.3)
	Kismayo	75 (10.5)	68 (9.5)	97 (13.6)	18 (2.5)
Part-time employment	Baidoa	54 (7.6)	57 (8.0)	89 (12.5)	25 (3.5)
	Dolow	84 (11.8)	84 (11.8)	60 (8.4)	2 (0.3)
	Kismayo	94 (13.2)	82 (11.5)	78 (10.9)	4 (0.6)

Fulltime employment	Baidoa	44 (6.2)	64 (9.0)	83 (11.6)	34 (4.8)
	Dolow	79 (11.1)	91 (12.8)	53 (7.4)	7 (1.0)
	Kismayo	116 (16.3)	82 (11.5)	54 (7.6)	6 (0.8)

Recurrent conflict and displacement are having a negative impact on the social capital of young people. Their disenfranchisement and vulnerability are illustrated in the following comments.

“Personally, speaking I have no job. I do nothing. I am jobless. I have no plans whatsoever for the day. Maybe I will get out and play football or at times go to the beach. And that is the case for many young people here

Young person from Kismayo

“I would say no. We don’t participate in such programs [peacebuilding] because in the first place, we don’t get opportunities that would allow us. And as youth you find at most times that no one is ready to listen to our opinions or even have them implemented.”

Young person from Kismayo

This sense of disenfranchisement, isolation and desperation is reflected in the trust in members of the community and the government (Table 10)

Table 9. Trust in the community and government

Question	No. of respondents (%); n= 713			
	To a small extent	To a rather small extent	To a rather great extent	To a great extent
How much do you trust members of the community?	110 (15.4)	329 (46.1)	255 (35.8)	19 (2.7)
How much do you trust the government?	73 (10.2)	238 (33.4)	266 (37.3)	136 (19.1)

Discussion

Epidemiological patterns of mental disorders

The three study sites had significant differences in sociodemographic characteristics of the participants which can be understood in the local context.

The study findings of 76.9% overall prevalence of mental disorders are higher than compared to an earlier WHO study which suggested that nearly 40% of the population in Somalia had a mental or psychological disorder (1). The overall prevalence of mental disorders in clinics was 89.5% and in the community was 75.4%, a statistically significant difference ($P = 0.006$). These high levels of mental disorders are generally associated with clinical populations as was found by Ndetei and others that the burden of common mental disorders is heavier in medical than in community settings with a 42% prevalence of depression in clinical populations drawn from health centres and hospitals (28). A similar prevalence of mental disorders in patients in non-psychiatric hospital beds was reported by another epidemiological study (29). A noteworthy finding in our study is that no significant differences were found between the community and clinic participants in the prevalence of nearly all psychiatric disorders except for hypomania and manic episodes, current obsessive–compulsive disorder and anorexia nervosa – the first two conditions are more likely to result in disruptive behaviour within families and communities (30).

These findings suggest that the general population who are not accessing and utilizing clinical services may have high levels of clinically significant symptoms of mental disorders. We suggest several reasons for this:

- lack of awareness of mental health in the population,
- the stigma associated with mental illness,
- lack of human resources, and
- shortage of mental health facilities compounded by conflict and climatic changes disrupting the community's and people's normal life.

The last two explanations are supported by our findings that PTSD was the second most common mental disorder at 37.0%, just below the 39.3% for panic disorder without agoraphobia. Our findings confirm that Somali people are highly traumatized given the history of protracted political instability and continued violence. This is further confirmed by our findings that within the three study sites, the prevalence of PTSD and most other disorders was significantly higher in Baidoa than the other two sites. Baidoa is characterized by a high influx of IDP and continued insecurity (6). Thus, the high level of psychiatric disorder is to some extent related to prolonged insecurity and war in Somalia. If all types of anxiety disorders are combined, then they outweigh all disorders, suggesting the state of fear and uncertainty of the Somali population.

The practical implication of these findings is that there is the need to routinely screen for these mental disorders and manage them accordingly.

Given that our findings suggest that the general population not accessing and using clinical services has high levels of clinically significant symptoms of mental disorders, public awareness campaigns are needed on the presentation of these conditions to promote health-seeking behaviour. At the same time, the capacity of health human resources needs to be enhanced to cope with the increased demand.

According to our findings, the fact that there was little difference between community populations and clinical populations in the prevalence of mental disorders suggests the widespread vulnerability of Somali people to these disorders. Our findings are further supported by comparison of internally displaced and non-internally displaced populations. Significantly more non-internally displaced respondents had mental health conditions than internally displaced respondents. We have no immediate explanation for this but we suggest the possibility that IDP felt more secure than those outside the camps.

Another noteworthy finding is that eating disorders – anorexia nervosa current (16.7% prevalence) and bulimia nervosa current (2.7%) – were found in this study population. While there was considerable variability in the prevalence of these two conditions, the burden of anorexia nervosa is far higher than reported worldwide, while the rate of bulimia nervosa is comparable to estimates in epidemiological studies (31). Given that genetic and familial factors have been shown to play a relevant role in the vulnerability to eating disorders (32), the findings of this study call for further studies on phenotypes and genotypes of these conditions in the study population.

The prevalence of suicide risk at 22.2% in this community, where Islam is the predominant religion and prohibits suicide, suggests that clinicians should enquire about suicidal thoughts in any clinical evaluation, regardless of religious beliefs or practices.

The prevalence rates among both males and females were similar for nearly half of the conditions studied (14 out of 30). The other 16 conditions were more prevalent in males than females. Since this male preponderance was found in both community populations and clinical populations, we attribute the difference to gender bias in seeking help. The findings provide the first evidence-based data for future studies to explain these gender similarities and differences. It is important to note the similarities in PTSD, suggesting that both sexes equally experienced and had been exposed to traumatic events.

Epidemiological patterns of substance abuse

Our study is first large concurrent community and clinical population-based study on the full spectrum of substances used in three groups in Somalia. In the absence of previous similar studies in Somalia, it is not possible to make comparisons of trends over time in Somalia. With these initial data, we can only comment on the trends we observed.

Although our study found the prevalence of most of the drugs used was higher in Somalia than reported in a study by Odenwald (33), it is important to note that we found the prevalence of khat to be low compared to other studies (33,34). The most common substance used was tobacco, followed closely by sedatives. Tobacco is not regulated except for certain age groups in most countries, but

sedatives are normally prescription drugs. Amphetamines were the third most common substance used. We have several explanations for these findings. It is possible that sedatives are used to bring people down when they are high on amphetamines. Sedative use, which has also been reported in Somalia's neighbouring countries (35–37), can be attributed to a lack of strict prescription guidelines. The low prevalence of alcohol use compared with other drugs is not surprising given Islam's specific prohibition of alcohol. Nevertheless, it is still a problem. Cocaine and opioids were the least used substances, as has been found in studies in the countries surrounding Somalia (37,38).

Both males and females reported substance use except for cocaine lifetime use, khat lifetime use, cocaine current and khat current which were not used by females. Culturally, it may be that khat and "hard" drugs are associated with males. The rest of the substances were significantly associated with males.

All substances were used in both community and clinical groups. However, the use of amphetamines lifetime and amphetamines current, as well as sedatives lifetime and current, was higher in the clinical sample than in community sample. This corresponds with our earlier speculation that these two substances were used concurrently, as so-called uppers and downers, and that their combined use led to help being sought at the clinics.

Given the level of substance use, there is a need to enquire about the use of these substances during routine clinical visits and to raise public awareness about the risk factors and long-term consequences of substance use.

Co-occurrence of substance use and ICD-10 mental disorders

Another key finding which is relevant to peacebuilding was the high comorbidity of substance-related disorders and ICD-10 disorders, a factor that is likely to affect the functioning of young people in Somalia. For example, individuals who had PTSD were seven times more likely to be taking alcohol (refer to Annex 2). The finding suggests individuals being unable to cope with traumatic events and thus turning to alcohol as a coping mechanism. Despite a short-term relief, current clinical evidence indicates that alcohol exacerbates some PTSD symptoms, leading to a decline in overall mental health and overall functioning (39).

Suicide risk co-occurred with cannabis use, a finding that is consistent with a growing body of knowledge associating marijuana use with psychological vulnerability, including a high likelihood of thinking about suicide (40). This calls for the integration of pharmacological and non-pharmacological interventions that take count of the co-occurrence of substance abuse and suicide risk among young adults. The common use of cannabis use among respondents with mental disorders could affect peacebuilding as psychoactive substances such as cannabis may be linked to violent behaviour due to increased aggressiveness, paranoia and personality changes.

Quality of life

As far as we were able to determine from available literature, no other study had looked at quality of life and the relation of aspects of quality of life with individual substance use disorders and a wide range of DSM-V/ICD-10 disorders among a large sample. It is significant therefore that this is being reported from Somalia in which, up to now, there had been no epidemiological studies on substance use, mental disorders or indicators of quality of life. In the absence of any other data, it is not possible to compare our findings, and our data represent the baseline for comparison in future studies.

Although there were various associations between substance use and measures of quality of life, for 50% or more (refer to Annex 3), there was no significant association. None of the substances used was perceived to be related to physical health, presumably because no physical withdrawal complications had developed. However, it is noteworthy that substance use was associated with an increased sense of psychological well-being, in particular with khat use, suggesting these substances are used as self-medication for psychological distress.

As with substance use disorders, various mental disorders had a mixed pattern of association with measures of quality of life. However, in the majority of cases, mental disorders did not predict the quality of life, and none was associated with physical health. In our view, this finding does not reflect reality given the Somali cultural context in which mental disorders are seen through the lens of religion and, more importantly, mental symptoms are not recognized as medical or psychological symptoms. We only found these mental disorders because we enquired about them in a systematic objective manner.

Our findings suggest that many of the substances are used to boost well-being in psychological conditions (i.e. self-medication). Of particular note is the role of khat which traditionally has been regarded as a social drug used to enhance social cohesion. However, our data suggest that khat may be used primarily as a “medicine” to cure psychological distress, with social cohesion being a secondary gain.

There was a mixed pattern of associations of substance use disorders and mental disorders with indicators of quality of life in this large community-based population. It is possible that religion plays a key role, especially with mental disorders and how they are perceived. While it is relatively easy to quantify substance use disorders and mental disorders using instruments that have been validated in different contexts and cultural backgrounds, this is not the case with quality of life which may be perceived differently in different contexts. However, our study provides baseline data for comparison with future studies in Somalia.

Peacebuilding

Perceptions of the peacebuilding process were rated poorly in more than 50% of cases in most of the different aspects of perception (refer to Annex 4). We cannot explain this negative perception. It could be a reflection of the detail of engagement of participants in the peacebuilding process. It could also be

a reflection of the time between the peacebuilding process and the time our evaluation was conducted, and that the longer the interval between the peacebuilding activities and evaluation, the worse the recall is of what happened. Either way, the peacebuilding process did not have a long-term impact. It may also have to do with the instrument we used, which was developed in a different country (Cambodia) by the ILO to determine the effectiveness of peacebuilding in that country following protracted violence and social disruption, very similar to what has happened in Somalia. In the absence of details of the process and content and level of engagement in Somalia, and a comparison of the same variables in Cambodia, we cannot make an informed comparison between the two settings. However, one can argue that what was captured in Somalia should be reasonable outcomes of any peacebuilding process – i.e. how the peacebuilding process changed the lives of people as individuals, their families, and their country’s inter- and intra-relationships (relationships among the citizens of Somalia and relationships outside of Somalia).

With the above caveats, the sociodemographic variables associated with worse outcomes can be explained. Females had more negative perceptions (Table A4.1). It is conceivable that females could have been more affected by the violence. Those attending clinics presumably had their negative perceptions complicated by their health. We have already noted that those attending clinics had more mental disorders, substance use and generally worse quality of life scores. Being in facilities for IDP implies poor social connections and therefore poor outcomes on social interventions. Baidoa had consistently worse scores than other sites, and Baidoa, compared with other sites, had a greater influx of IDP, insecurity and long-standing drought which could have negatively affected the perception of people from this area.

Strengths of the study

- This is the first study in Somalia to provide epidemiological patterns of different mental disorders, substance use disorders, comorbidities and quality of life.
- A large sample was used with a wide range of mental disorders and substances examined.
- Standard psychometric tools were used to study mental disorders. The translation of the instruments was done using WHO guidelines.
- Stakeholders, service users, policy-makers and researchers were engaged from the beginning with continued engagement of policy-makers through the whole process to the findings and policy recommendations.
- Use of technology allowed AMHRTF to study different sites with different backgrounds. Electronic data collection using KoBoCollect allowed us to reach participants and seamlessly collect data. Technology-aided approaches, such as online training of data collectors and supervision monitored using GPS coordinates, helped ensure data quality. Timely data flow also allowed the research team to work remotely.

- The research teams in Kenya and Somalia had daily virtual meetings to receive feedback on any challenges and the mitigation strategies employed. This allowed continuous current and future learning among both teams and especially for training the Somalia teams to ensure the sustainability of research skills.

Limitations of the study

- Although the research team based in Kenya had initially proposed to travel to Somalia for in-person training and theory of change workshops, the approach was changed because of COVID-19 travel restrictions and other security reasons prevailing at the time of this research. However, there were supervisors in each of the study site (Somali National University and Ministry of Health) with a track record of supervision of data enumerators. The supervisors were on site every day.
- The initial proposed plan was to conduct a longitudinal study with data collection at three time points (at least) to measure the impact of any interventions that may have been provided by other implementing partners in Somalia. However, due to time constraints and funding for the Somali National University at the time, this approach was not implemented.
- While 38.7% of the participants reported that they could read or write, profiling literacy was inconclusive because of the parallel system of education, formal schooling and Quranic schools. Quranic schools are available to almost every family and the finding that 38.7% of the population could not read or write is not a firm conclusion. The project recommends formal and Quranic schools be treated as separate factors in research work, and their role in mental health decision-making be treated separately.

Conclusions

- There is a high prevalence and wide range of different mental disorders, substance abuse disorders and poor quality of life in both non-clinical and clinical populations. This prevalence is similar if not above average for most reported studies. This calls for screening for these disorders in routine clinical practice using instruments with acceptable psychometric properties. This will lead to increased service demand which should be met with increased capacity-building for the human resources.
- Despite the high burden of mental disorders among the general population, people in the community are clearly not accessing mental health services, suggesting a lack of mental health awareness in the population and the lack of mental health facilities and human resources to provide the services.
- There was a high comorbidity between different types of mental disorders, between different types of substance use disorders and between mental disorders and substance use disorders. This calls for integrated screening and management.

- The cross-sectional study without a baseline following an intervention does not allow for the determination of any intervention that may have been put in place, whether peacebuilding or mental health intervention. The observed high prevalence of mental and substance use disorders would at face value suggest such interventions, if carried out before this baseline, did not translate into a substantive impact on the prevalence. In particular, we have no evidence that the peacebuilding process had any impact on the prevalence of the mental health and substance use disorders and quality of life. This is supported by the finding that the peacebuilding process was generally rated negatively in most of the variables studied.
- There were differences and similarities almost in equal measure between males and females and different mental disorders, community and clinic populations and IDP versus non-IDP participants. However, IDP settings accounted for nearly all the significant differences related to the three study sites, suggesting environmental factors in the distribution of different types of mental disorders.
- With quality of life and satisfaction with life (based on the domains of physical health, psychological health, social relationships, economic status and immediate environment), there was generally low satisfaction suggesting poor financial resources and investment, and limited opportunities and services. Thus, treatment of mental health conditions alone without addressing quality of life may not be sufficient for good mental health outcomes. There is a need to adopt a whole-community approach to building lasting peace with a focus on psychological, social, economic and environmental domains to allow individuals to realize their abilities, cope with stressful events, work productively, and make a contribution to their community.
- Because of the study design, this study could not establish any links between the preceding peacebuilding process and the subsequent findings except that it does not seem the peacebuilding process or any other intervention had any effect on the prevalence of mental disorders, substance abuse and quality of life. This calls for better designed studies for any future evaluation of any programmes that target mental health.

Recommendations

1. Urgent programme development is needed to implement mental health programmes. These programmes should include data collection to document patterns of disorders and changing patterns. Studies on the health system in Somalia are needed to identify the gaps in the delivery of services. This should be done using the WHO tools for health systems.
2. Given the acute shortage of mental health specialists, the widely used mhGAP-IG should be used to train community health workers, nurses and physician assistants (clinical officers), social workers and religious leaders and other gatekeepers (individuals who have control and/or influence over what community interventions can be provided or accessed by the population) and indeed people with lived experiences of mental disorders (such as elders and

religious leaders) on identifying mental disorders, responding to them, and referring people as primary care providers are the first contact people with mental disorders and their families may have with health providers. Such lay providers of mental health services should be integrated into the formal health system through task-sharing.

3. Given that traditional and religious views of mental health stand in contrast to the contemporary biomedical model, and this has had a negative effect on health care seeking behaviour of people with mental disorders, community-level efforts are needed to increase awareness.
4. Also at the population level, screening for mental disorders in routine clinical practice is needed to identify the mental conditions at the subclinical stage.
5. Longitudinal studies are needed to establish whether or not there are relationships between any ongoing community-wide and clinical interventions and mental health and psychosocial outcomes.

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Annexes

Annex 1. Mental Health and Psychosocial Support Services (MHPSS) Project

Supervisors' training on data collection, Mogadishu, Somalia

1. Introduction

The Africa Mental Health Research and Training Foundation in collaboration with WHO Somalia and the Somali National University is planning to undertake a research project entitled “Inter-linkages between youth mental health and peace building in Somalia”. The overall objective of this research is to determine the linkages between mental health and peacebuilding among Somali youth. The research team is planning to achieve these objectives through specific aims below:

- To document patterns of ICD-10 disorders and severity of symptoms of depression, trauma symptoms, suicidality and quality of life in the cohorts of Somali youth undergoing peace building process and mental health intervention (ICD 11 will not be in operation until the beginning of 2022).
- To determine the mental health outcomes of the mental health interventions.
- To determine the outcomes of the peace building process.

In order to reach these research objectives, the following specific tools were used for this study.

- Sociodemographic questionnaire which includes the World Bank economic indicators for households and to also include youth and family histories of physical and mental health, levels of education and employment activities.
- Psychometric tools:
 - MINI-Plus for ICD-10
 - Harvard Trauma Questionnaire
 - WHO-ASSIST
 - WHO Quality of life questionnaire.

2. Supervisors' training on data collection

Twelve trainees from the study sites (Dollow, Baidowo and Kismayo) were trained in Mogadishu from 29 September to 1 October 2021. The training focused on administration of instruments and data quality control.

2.1. Requirement to be a supervisor

- Previous training on WHO mental health gap action
- Living in data collection sites
- Bachelor's degree in nursing or medicine (MBB)

2.2. Area of the training

- a.** Background of the study: The main areas discussed in the training session were the study goals and objectives
- b.** Quantitative data collection. They were trained on how to administer the instruments. This included reading the questions to the enumerators in Somali up to three times without elaboration. If the person being interviewed still do not understand the question by the third reading, then that question was not understood. This training is meant to enhance intra- and inter-rater reliability. Mock examination with each other was included as a practical session.
- c.** Qualitative data collection. Supervisors were trained on how to conduct focus group discussions and key informant interviews. The session included ethical conduct of focus group discussions which will included: (i) theoretical background on conducting focus group discussions; (ii) live demonstration by a trainer on conducting focus group discussions; (iii) mock conducting of focus group discussions among themselves; and (iv) group discussions on lessons learnt.
- d.** Ethical consideration. Research ethics were covered including: obtaining informed consent; the need for debriefing; confidentiality; safety and risk; and the responsibility of the research team to protect the physical, mental and social well-being of the participants. As a result of these considerations, it was considered necessary to use the community health workers even if they were part of the team that implemented the interventions. As well as understanding MHPSS in the three sites, community health workers are also lay providers who are best placed to handle potential negative emotions and aggravation that may arise during the data collection exercise. However, it was agreed that all research assistants should own a smartphone as this would be one of the main data collection resources.
- e.** KoboCollect tool: Practical/live demonstrations were given on the KoBoCollect tool to all supervisors. This session was included the following: filling blank forms; editing saved forms; sending finalized forms; viewing sent forms; obtaining a blank forms; and deleting a saved forms.

3. Challenges

There were no challenges on supervisors' training.

Annex 2. Comorbidity of mental disorders

Table A2.1 Likelihood of comorbidity of mental disorders as classified by ICD-10

ICD-10 mental disorders	Post-traumatic stress disorder	Major depressive episode current	Major depressive episode recurrent	Major depressive episode with melancholic features current	Dysthymia current	Suicide risk current
	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)
Post-traumatic stress disorder	—	6.36 (4.52–9.01)***	7.89 (5.30–12.0)***	7.25 (4.89–10.9)***	NS	6.46 (4.40–9.61)***
Major depressive episode current	6.36 (4.52–9.01)***	—	NS	NS	NS	4.57 (3.16–6.65)***
Major depressive episode recurrent	7.89 (5.30–12.0)***	NS	—	68.0 (40.5–118)***	NS	4.76 (3.22–7.05)***
Major depressive episode with melancholic features current	7.25 (4.89–10.9)***	NS	68.0 (40.5–118)***	—	NS	4.58 (3.10–6.77)***
Dysthymia current	NS	NS	NS	NS	—	NS
Suicide risk current	6.46 (4.40–9.61)***	4.57 (3.16–6.65)***	4.76 (3.22–7.05)***	4.58 (3.10–6.77)***	NS	—
Hypomanic episode	4.64 (3.11–7.01)***	4.66 (3.14–6.98)***	5.24 (3.48–7.92)***	4.22 (2.80–6.35)***	NS	3.89 (2.59–5.85)***
Manic episode	8.32 (5.48–12.9)***	10.1 (6.63–15.5)***	10.9 (7.19–16.7)***	9.09 (6.03–13.8)***	0.33 (0.11–0.75)*	5.20 (3.49–7.78)***
Panic disorder lifetime	11.2 (6.64–20.1)***	13.9 (8.25–24.6)***	11.5 (7.20–18.7)***	10.2 (6.44–16.5)***	NS	6.03 (3.85–9.50)***
Limited symptom attacks lifetime	NS	13.0 (2.20–246)*	4.90 (1.07–25.1)*	NS	NS	4.78 (1.04–24.5)*
Panic disorder current	10.0 (5.32–20.6)***	22.6 (10.8–55.2)***	16.7 (9.26–31.9)***	9.06 (5.26–16.0)***	NS	6.44 (3.79–11.1)***
Panic disorder without agoraphobia current	3.40 (2.48–4.69)***	3.65 (2.63–5.09)***	4.96 (3.40–7.34)***	4.43 (3.04–6.51)***	NS	3.12 (2.17–4.51)***
Panic disorder with agoraphobia current	4.78 (3.43–6.71)***	5.23 (3.72–7.38)***	6.85 (4.67–10.2)***	6.85 (4.67–10.2)***	NS	3.23 (2.25–4.67)***
Agoraphobia current without history of panic disorder	5.99 (4.28–8.45)***	6.28 (4.45–8.91)***	8.65 (5.83–13.0)***	7.64 (5.18–11.4)***	NS	4.39 (3.03–6.38)***
Social phobia (social anxiety disorder) current	7.69 (5.02–12.1)***	11.1 (7.19–17.7)***	14.6 (9.42–22.8)***	12.5 (8.16–19.5)***	0.28 (0.08–0.70)*	6.28 (4.17–9.51)***
Obsessive–compulsive disorder current	5.17 (3.39–8.02)***	6.61 (4.33–10.3)***	7.57 (4.95–11.7)***	4.96 (3.26–7.58)***	NS	5.25 (3.45–8.01)***
Post-traumatic stress disorder current	5.29 (3.76–7.51)***	4.35 (3.10–6.15)***	3.93 (2.72–5.72)***	5.27 (3.62–7.73)***	NS	4.65 (3.21–6.77)***
Alcohol dependence current	15.6 (5.39–65.8)***	4.04 (1.87–9.25)***	3.86 (1.78–8.35)***	2.43 (1.08–5.25)*	NS	18.7 (7.56–56.6)***
Alcohol abuse current	6.16 (2.18–21.9)**	5.55 (2.07–17.5)**	3.67 (1.41–9.57)**	3.67 (1.41–9.57)**	NS	7.48 (2.85–21.8)***

Substance dependence current	7.08 (2.22–31.3)**	6.06 (2.05–22.0)**	7.63 (2.67–24.8)***	10.6 (3.56–38.6)***	NS	10.3 (3.47–37.6)***
Substance abuse current	15.9 (2.96–294)**	8.76 (2.17–58.4)**	8.81 (2.42–41.3)**	15.2 (3.77–102)***	NS	14.8 (3.67–99.1)***
Mood disorder with psychotic features lifetime	10.6 (7.05–16.4)***	10.7 (7.19–16.2)***	11.0 (7.33–16.7)***	12.0 (7.98–18.3)***	NS	3.95 (2.69–5.82)***
Mood disorder with psychotic features current	8.76 (6.16–12.6)***	10.8 (7.52–15.7)***	11.2 (7.46–17.1)***	12.3 (8.12–18.9)***	1.79 (1.05–3.01)*	3.96 (2.74–5.74)***
Psychotic disorder current	7.55 (5.27–10.9)***	9.26 (6.43–13.5)***	8.13 (5.51–12.1)***	9.98 (6.72–15.0)***	NS	4.05 (2.80–5.90)***
Psychotic disorder lifetime	9.48 (6.59–13.8)***	10.7 (7.43–15.7)***	8.35 (5.66–12.5)***	10.3 (6.90–15.5)***	NS	4.80 (3.31–7.00)***
Anorexia nervosa current	5.26 (3.45–8.15)***	5.58 (3.69–8.56)***	7.07 (4.63–10.9)***	5.34 (3.51–8.16)***	NS	5.64 (3.71–8.62)***
Bulimia nervosa current	9.59 (3.16–41.5)***	8.41 (3.01–29.8)***	8.42 (3.27–24.3)***	11.0 (4.13–34.4)***	NS	10.7 (4.02–33.5)***
Anorexia nervosa binge eating/purging type current	16.9 (5.91–71.4)***	11.7 (4.81–35.2)***	16.9 (7.19–46.2)***	11.4 (5.15–27.7)***	NS	11.1 (5.01–27.0)***
Generalized anxiety disorder current	5.22 (3.75–7.31)***	4.15 (2.98–5.81)***	3.60 (2.49–5.22)***	4.15 (2.87–6.05)***	NS	3.79 (2.63–5.49)***
Antisocial personality disorder lifetime	7.98 (5.49–11.8)***	4.19 (2.95–5.99)***	3.81 (2.61–5.57)***	3.53 (2.42–5.16)***	NS	4.91 (3.36–7.19)***

ICD-10 mental disorders	Hypomanic episode	Manic episode	Panic disorder lifetime	Limited symptom attacks lifetime	Panic disorder current	Panic disorder without agoraphobia current
	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)
Post-traumatic stress disorder	4.64 (3.11–7.01)***	8.32 (5.48–12.9)***	11.2 (6.64–20.1)***	NS	10.0 (5.32–20.6)***	3.40 (2.48–4.69)***
Major depressive episode current	4.66 (3.14–6.98)***	10.1 (6.63–15.5)***	13.9 (8.25–24.6)***	13.0 (2.20–246)*	22.6 (10.8–55.2)***	3.65 (2.63–5.09)***
Major depressive episode recurrent	5.24 (3.48–7.92)***	10.9 (7.19–16.7)***	11.5 (7.20–18.7)***	4.90 (1.07–25.1)*	16.7 (9.26–31.9)***	4.96 (3.40–7.34)***
Major depressive episode with melancholic features current	4.22 (2.80–6.35)***	9.09 (6.03–13.8)***	10.2 (6.44–16.5)***	NS	9.06 (5.26–16.0)***	4.43 (3.04–6.51)***
Dysthymia current	NS	0.33 (0.11–0.75)*	NS	NS	NS	NS
Suicide risk current	3.89 (2.59–5.85)***	5.20 (3.49–7.78)***	6.03 (3.85–9.50)***	4.78 (1.04–24.5)*	6.44 (3.79–11.1)***	3.12 (2.17–4.51)***
Hypomanic episode	—	19.8 (12.6–31.7)***	3.22 (2.01–5.11)***	NS	1.88 (1.03–3.31)*	3.61 (2.43–5.40)***
Manic episode	19.8 (12.6–31.7)***	—	7.45 (4.72–11.8)***	NS	7.18 (4.21–12.4)***	6.05 (4.04–9.23)***
Panic disorder lifetime	3.22 (2.01–5.11)***	7.45 (4.72–11.8)***	—	NS	241 (93.3–826)***	6.12 (3.80–10.2)***
Limited symptom attacks lifetime	NS	NS	NS	—	NS	NS
Panic disorder current	1.88 (1.03–3.31)*	7.18 (4.21–12.4)***	241 (93.3–826)***	NS	—	13.3 (6.58–30.6)***

Panic disorder without agoraphobia current	3.61 (2.43–5.40)***	6.05 (4.04–9.23)***	6.12 (3.80–10.2)***	NS	13.3 (6.58–30.6)***	—
Panic disorder with agoraphobia current	3.85 (2.60–5.74)***	7.78 (5.20–11.8)***	11.7 (7.05–20.2)***	NS	12.7 (6.71–26.0)***	22.4 (14.9–34.3)***
Agoraphobia current without history of panic disorder	5.84 (3.90–8.86)***	14.6 (9.34–23.5)***	12.0 (7.21–21.0)***	NS	12.2 (6.46–25.1)***	14.3 (9.82–21.1)***
Social phobia (social anxiety disorder) current	4.97 (3.25–7.60)***	11.8 (7.66–18.3)***	10.3 (6.48–16.6)***	NS	13.2 (7.58–23.7)***	5.57 (3.69–8.59)***
Obsessive–compulsive disorder current	4.97 (3.22–7.68)***	11.3 (7.30–17.8)***	5.32 (3.33–8.48)***	NS	6.55 (3.81–11.3)***	7.66 (4.86–12.4)***
Post-traumatic stress disorder current	3.31 (2.24–4.91)***	5.48 (3.72–8.14)***	5.29 (3.39–8.36)***	NS	6.78 (3.92–12.2)***	3.55 (2.55–4.97)***
Alcohol dependence current	NS	4.39 (2.03–9.52)***	3.17 (1.33–7.05)**	NS	NS	3.43 (1.57–8.07)**
Alcohol abuse current	NS	2.63 (0.95–6.82)*	3.17 (1.08–8.38)*	NS	NS	NS
Substance dependence current	NS	8.66 (3.02–28.2)***	10.3 (3.62–31.3)***	NS	9.84 (3.34–28.4)***	NS
Substance abuse current	NS	9.98 (2.74–46.8)***	15.9 (4.33–74.6)***	NS	17.0 (4.72–68.0)***	NS
Mood disorder with psychotic features lifetime	4.32 (2.88–6.50)***	11.0 (7.28–16.8)***	12.1 (7.58–19.8)***	NS	13.1 (7.40–24.3)***	5.78 (3.95–8.58)***
Mood disorder with psychotic features current	4.66 (3.14–6.98)***	12.2 (7.95–19.2)***	10.4 (6.38–17.7)***	5.38 (1.15–37.8)*	14.6 (7.60–31.1)***	4.21 (3.03–5.89)***
Psychotic disorder current	3.39 (2.29–5.03)***	7.89 (5.29–11.9)***	8.62 (5.42–14.0)***	NS	14.4 (7.75–29.0)***	4.63 (3.28–6.57)***
Psychotic disorder lifetime	4.17 (2.81–6.21)***	8.21 (5.49–12.4)***	9.57 (5.96–15.8)***	6.11 (1.31–42.9)*	15.1 (7.99–31.1)***	4.58 (3.26–6.48)***
Anorexia nervosa current	4.02 (2.60–6.20)***	5.85 (3.82–9.00)***	4.68 (2.92–7.46)***	NS	5.99 (3.49–10.3)***	4.04 (2.68–6.19)***
Bulimia nervosa current	3.41 (1.30–8.60)**	7.51 (2.96–20.5)***	6.12 (2.37–15.6)***	NS	8.29 (3.09–21.3)***	6.07 (2.18–21.5)**
Anorexia nervosa binge eating/purging type current	NS	10.9 (5.04–25.7)***	11.3 (5.30–24.9)***	NS	17.7 (8.15–39.3)***	6.67 (2.87–18.2)***
Generalized anxiety disorder current	3.21 (2.17–4.75)***	4.41 (3.00–6.53)***	3.38 (2.19–5.28)***	NS	4.40 (2.58–7.74)***	2.23 (1.63–3.06)***
Antisocial personality disorder lifetime	5.12 (3.43–7.68)***	5.57 (3.77–8.29)***	3.62 (2.33–5.64)***	NS	4.43 (2.62–7.56)***	2.45 (1.74–3.46)***

ICD-10 mental disorders	Panic disorder with agoraphobia current	Agoraphobia current without history of panic disorder	Social phobia (social anxiety disorder) current	Obsessive–compulsive disorder current	Post-traumatic stress disorder current	Alcohol dependence current
	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)
Post-traumatic stress disorder	4.78 (3.43–6.71)***	5.99 (4.28–8.45)***	7.69 (5.02–12.1)***	5.17 (3.39–8.02)***	5.29 (3.76–7.51)***	15.6 (5.39–65.8)***
Major depressive episode current	5.23 (3.72–7.38)***	6.28 (4.45–8.91)***	11.1 (7.19–17.7)***	6.61 (4.33–10.3)***	4.35 (3.10–6.15)***	4.04 (1.87–9.25)***
Major depressive episode recurrent	6.85 (4.67–10.2)***	8.65 (5.83–13.0)***	14.6 (9.42–22.8)***	7.57 (4.95–11.7)***	3.93 (2.72–5.72)***	3.86 (1.78–8.35)***

Major depressive episode with melancholic features current	6.85 (4.67–10.2)***	7.64 (5.18–11.4)***	12.5 (8.16–19.5)***	4.96 (3.26–7.58)***	5.27 (3.62–7.73)***	2.43 (1.08–5.25)*
Dysthymia current	NS	NS	0.28 (0.08–0.70)*	NS	NS	NS
Suicide risk current	3.23 (2.25–4.67)***	4.39 (3.03–6.38)***	6.28 (4.17–9.51)***	5.25 (3.45–8.01)***	4.65 (3.21–6.77)***	18.7 (7.56–56.6)***
Hypomanic episode	3.85 (2.60–5.74)***	5.84 (3.90–8.86)***	4.97 (3.25–7.60)***	4.97 (3.22–7.68)***	3.31 (2.24–4.91)***	NS
Manic episode	7.78 (5.20–11.8)***	14.6 (9.34–23.5)***	11.8 (7.66–18.3)***	11.3 (7.30–17.8)***	5.48 (3.72–8.14)***	4.39 (2.03–9.52)***
Panic disorder lifetime	11.7 (7.05–20.2)***	12.0 (7.21–21.0)***	10.3 (6.48–16.6)***	5.32 (3.33–8.48)***	5.29 (3.39–8.36)***	3.17 (1.33–7.05)**
Limited symptom attacks lifetime	NS	NS	NS	NS	NS	NS
Panic disorder current	12.7 (6.71–26.0)***	12.2 (6.46–25.1)***	13.2 (7.58–23.7)***	6.55 (3.81–11.3)***	6.78 (3.92–12.2)***	NS
Panic disorder without agoraphobia current	22.4 (14.9–34.3)***	14.3 (9.82–21.1)***	5.57 (3.69–8.59)***	7.66 (4.86–12.4)***	3.55 (2.55–4.97)***	3.43 (1.57–8.07)**
Panic disorder with agoraphobia current	—	107 (63.4–186)***	12.0 (7.71–19.3)***	8.26 (5.34–13.1)***	3.96 (2.82–5.58)***	3.96 (1.83–9.06)***
Agoraphobia current without history of panic disorder	107 (63.4–186)***	—	11.4 (7.35–18.3)***	7.90 (5.11–12.5)***	3.86 (2.75–5.43)***	3.27 (1.52–7.30)**
Social phobia (social anxiety disorder) current	12.0 (7.71–19.3)***	11.4 (7.35–18.3)***	—	11.1 (7.12–17.5)***	6.43 (4.29–9.74)***	3.08 (1.37–6.67)**
Obsessive–compulsive disorder current	8.26 (5.34–13.1)***	7.90 (5.11–12.5)***	11.1 (7.12–17.5)***	—	12.3 (7.82–20.0)***	22.5 (9.43–62.4)***
Post-traumatic stress disorder current	3.96 (2.82–5.58)***	3.86 (2.75–5.43)***	6.43 (4.29–9.74)***	12.3 (7.82–20.0)***	—	12.0 (4.86–36.1)***
Alcohol dependence current	3.96 (1.83–9.06)***	3.27 (1.52–7.30)**	3.08 (1.37–6.67)**	22.5 (9.43–62.4)***	12.0 (4.86–36.1)***	—
Alcohol abuse current	NS	NS	NS	10.8 (4.12–31.8)***	6.45 (2.40–20.3)***	191 (59.5–759)***
Substance dependence current	3.20 (1.14–9.63)*	3.09 (1.10–9.32)*	7.15 (2.53–21.7)***	15.2 (5.09–55.6)***	6.75 (2.28–24.6)**	28.2 (9.14–86.1)***
Substance abuse current	4.98 (1.37–23.3)*	8.26 (2.05–55.0)**	4.66 (1.28–17.0)*	12.6 (3.43–58.9)***	5.66 (1.56–26.4)*	18.8 (4.57–70.4)***
Mood disorder with psychotic features lifetime	7.47 (5.09–11.1)***	7.38 (5.03–11.0)***	14.1 (9.17–22.1)***	8.18 (5.34–12.7)***	8.18 (5.57–12.2)***	5.01 (2.33–11.1)***
Mood disorder with psychotic features current	7.15 (5.05–10.2)***	8.11 (5.71–11.6)***	12.4 (7.93–19.8)***	8.07 (5.22–12.7)***	6.77 (4.77–9.69)***	10.7 (4.34–32.2)***
Psychotic disorder current	7.24 (5.07–10.4)***	7.54 (5.28–10.9)***	9.46 (6.23–14.6)***	5.86 (3.87–8.97)***	6.15 (4.31–8.83)***	3.07 (1.43–6.68)**
Psychotic disorder lifetime	7.29 (5.12–10.5)***	8.66 (6.05–12.5)***	12.9 (8.31–20.4)***	6.84 (4.49–10.6)***	7.17 (5.02–10.3)***	6.51 (2.92–16.0)***
Anorexia nervosa current	4.96 (3.29–7.57)***	4.35 (2.89–6.60)***	7.24 (4.69–11.2)***	13.0 (8.23–20.7)***	7.46 (4.88–11.6)***	6.45 (2.98–14.1)***
Bulimia nervosa current	11.8 (3.88–51.1)***	11.4 (3.76–49.4)***	27.1 (8.86–118)***	15.9 (5.94–50.0)***	9.39 (3.36–33.3)***	NS
Anorexia nervosa binge eating/purging type current	15.1 (5.78–51.5)***	14.5 (5.58–49.7)***	27.5 (11.2–83.0)***	20.3 (8.91–52.5)***	10.5 (4.48–28.6)***	NS
Generalized anxiety disorder current	2.77 (2.00–3.84)***	2.41 (1.74–3.33)***	4.44 (2.99–6.66)***	9.32 (5.92–15.1)***	10.7 (7.44–15.7)***	6.01 (2.64–15.5)***

Antisocial personality disorder lifetime 3.93 (2.77–5.61)*** 5.20 (3.64–7.47)*** 7.55 (5.01–11.5)*** 9.21 (5.99–14.4)*** 7.32 (5.07–10.7)*** 5.72 (2.64–13.1)***

ICD-10 mental disorders	Alcohol abuse current	Substance dependence current	substance abuse current	Mood disorder with psychotic features lifetime	Mood disorder with psychotic features current	Psychotic disorder current
	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)
Post-traumatic stress disorder	6.16 (2.18–21.9)**	7.08 (2.22–31.3)**	15.9 (2.96–294)**	10.6 (7.05–16.4)***	8.76 (6.16–12.6)***	7.55 (5.27–10.9)***
Major depressive episode current	5.55 (2.07–17.5)**	6.06 (2.05–22.0)**	8.76 (2.17–58.4)**	10.7 (7.19–16.2)***	10.8 (7.52–15.7)***	9.26 (6.43–13.5)***
Major depressive episode recurrent	3.67 (1.41–9.57)**	7.63 (2.67–24.8)***	8.81 (2.42–41.3)**	11.0 (7.33–16.7)***	11.2 (7.46–17.1)***	8.13 (5.51–12.1)***
Major depressive episode with melancholic features current	3.67 (1.41–9.57)**	10.6 (3.56–38.6)***	15.2 (3.77–102)***	12.0 (7.98–18.3)***	12.3 (8.12–18.9)***	9.98 (6.72–15.0)***
Dysthymia current	NS	NS	NS	NS	1.79 (1.05–3.01)*	NS
Suicide risk current	7.48 (2.85–21.8)***	10.3 (3.47–37.6)***	14.8 (3.67–99.1)***	3.95 (2.69–5.82)***	3.96 (2.74–5.74)***	4.05 (2.80–5.90)***
Hypomanic episode	NS	NS	NS	4.32 (2.88–6.50)***	4.66 (3.14–6.98)***	3.39 (2.29–5.03)***
Manic episode	2.63 (0.95–6.82)*	8.66 (3.02–28.2)***	9.98 (2.74–46.8)***	11.0 (7.28–16.8)***	12.2 (7.95–19.2)***	7.89 (5.29–11.9)***
Panic disorder lifetime	3.17 (1.08–8.38)*	10.3 (3.62–31.3)***	15.9 (4.33–74.6)***	12.1 (7.58–19.8)***	10.4 (6.38–17.7)***	8.62 (5.42–14.0)***
Limited symptom attacks lifetime	NS	NS	NS	NS	5.38 (1.15–37.8)*	NS
Panic disorder current	NS	9.84 (3.34–28.4)***	17.0 (4.72–68.0)***	13.1 (7.40–24.3)***	14.6 (7.60–31.1)***	14.4 (7.75–29.0)***
Panic disorder without agoraphobia current	NS	NS	NS	5.78 (3.95–8.58)***	4.21 (3.03–5.89)***	4.63 (3.28–6.57)***
Panic disorder with agoraphobia current	NS	3.20 (1.14–9.63)*	4.98 (1.37–23.3)*	7.47 (5.09–11.1)***	7.15 (5.05–10.2)***	7.24 (5.07–10.4)***
Agoraphobia current without history of panic disorder	NS	3.09 (1.10–9.32)*	8.26 (2.05–55.0)**	7.38 (5.03–11.0)***	8.11 (5.71–11.6)***	7.54 (5.28–10.9)***
Social phobia (social anxiety disorder) current	NS	7.15 (2.53–21.7)***	4.66 (1.28–17.0)*	14.1 (9.17–22.1)***	12.4 (7.93–19.8)***	9.46 (6.23–14.6)***
Obsessive–compulsive disorder current	10.8 (4.12–31.8)***	15.2 (5.09–55.6)***	12.6 (3.43–58.9)***	8.18 (5.34–12.7)***	8.07 (5.22–12.7)***	5.86 (3.87–8.97)***
Post-traumatic stress disorder current	6.45 (2.40–20.3)***	6.75 (2.28–24.6)**	5.66 (1.56–26.4)*	8.18 (5.57–12.2)***	6.77 (4.77–9.69)***	6.15 (4.31–8.83)***
Alcohol dependence current	191 (59.5–759)***	28.2 (9.14–86.1)***	18.8 (4.57–70.4)***	5.01 (2.33–11.1)***	10.7 (4.34–32.2)***	3.07 (1.43–6.68)**
Alcohol abuse current	—	28.2 (7.79–94.3)***	18.9 (3.80–75.6)***	3.51 (1.35–9.15)**	7.85 (2.78–28.0)***	NS
Substance dependence current	28.2 (7.79–94.3)***	—	NS	5.43 (1.93–16.4)**	6.06 (2.05–22.0)**	5.27 (1.85–17.1)**
Substance abuse current	18.9 (3.80–75.6)***	NS	—	5.38 (1.52–21.3)**	8.76 (2.17–58.4)**	10.5 (2.62–70.3)**

Mood disorder with psychotic features lifetime	3.51 (1.35–9.15)**	5.43 (1.93–16.4)**	5.38 (1.52–21.3)**	—	71.9 (39.6–142)***	30.7 (19.4–50.0)***
Mood disorder with psychotic features current	7.85 (2.78–28.0)***	6.06 (2.05–22.0)**	8.76 (2.17–58.4)**	71.9 (39.6–142)***	—	66.9 (40.7–114)***
Psychotic disorder current	NS	5.27 (1.85–17.1)**	10.5 (2.62–70.3)**	30.7 (19.4–50.0)***	66.9 (40.7–114)***	—
Psychotic disorder lifetime	3.92 (1.52–10.8)**	3.71 (1.32–11.2)*	5.78 (1.59–27.0)*	39.2 (24.0–66.3)***	67.3 (41.3–114)***	121 (69.9–217)***
Anorexia nervosa current	5.30 (2.03–13.9)***	4.58 (1.58–13.0)**	5.21 (1.43–19.0)**	7.28 (4.77–11.2)***	5.85 (3.85–8.99)***	5.72 (3.78–8.73)***
Bulimia nervosa current	NS	10.7 (2.27–37.7)***	18.4 (3.71–73.1)***	14.2 (5.07–50.4)***	12.0 (3.96–52.2)***	14.6 (4.79–63.1)***
Anorexia nervosa binge eating/purging type current	NS	6.21 (1.36–21.0)**	10.7 (2.22–40.9)***	16.1 (6.86–44.1)***	15.4 (5.90–52.6)***	11.3 (4.86–31.0)***
Generalized anxiety disorder current	9.71 (3.17–42.2)***	5.32 (1.80–19.3)**	4.46 (1.23–20.9)*	5.63 (3.87–8.27)***	4.15 (2.98–5.81)***	3.72 (2.65–5.24)***
Antisocial personality disorder lifetime	3.75 (1.46–9.97)**	NS	4.48 (1.27–17.7)*	6.96 (4.74–10.3)***	6.06 (4.23–8.77)***	4.96 (3.46–7.14)***

ICD-10 mental disorders	Psychotic disorder lifetime	Anorexia nervosa current	Bulimia nervosa current	Anorexia nervosa binge eating/purging type current	Generalized anxiety disorder current	Antisocial personality disorder lifetime
	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)	COR (95% CI)
Post-traumatic stress disorder	9.48 (6.59–13.8)***	5.26 (3.45–8.15)***	9.59 (3.16–41.5)***	16.9 (5.91–71.4)***	5.22 (3.75–7.31)***	7.98 (5.49–11.8)***
Major depressive episode current	10.7 (7.43–15.7)***	5.58 (3.69–8.56)***	8.41 (3.01–29.8)***	11.7 (4.81–35.2)***	4.15 (2.98–5.81)***	4.19 (2.95–5.99)***
Major depressive episode recurrent	8.35 (5.66–12.5)***	7.07 (4.63–10.9)***	8.42 (3.27–24.3)***	16.9 (7.19–46.2)***	3.60 (2.49–5.22)***	3.81 (2.61–5.57)***
Major depressive episode with melancholic features current	10.3 (6.90–15.5)***	5.34 (3.51–8.16)***	11.0 (4.13–34.4)***	11.4 (5.15–27.7)***	4.15 (2.87–6.05)***	3.53 (2.42–5.16)***
Dysthymia current	NS	NS	NS	NS	NS	NS
Suicide risk current	4.80 (3.31–7.00)***	5.64 (3.71–8.62)***	10.7 (4.02–33.5)***	11.1 (5.01–27.0)***	3.79 (2.63–5.49)***	4.91 (3.36–7.19)***
Hypomanic episode	4.17 (2.81–6.21)***	4.02 (2.60–6.20)***	3.41 (1.30–8.60)**	NS	3.21 (2.17–4.75)***	5.12 (3.43–7.68)***
Manic episode	8.21 (5.49–12.4)***	5.85 (3.82–9.00)***	7.51 (2.96–20.5)***	10.9 (5.04–25.7)***	4.41 (3.00–6.53)***	5.57 (3.77–8.29)***
Panic disorder lifetime	9.57 (5.96–15.8)***	4.68 (2.92–7.46)***	6.12 (2.37–15.6)***	11.3 (5.30–24.9)***	3.38 (2.19–5.28)***	3.62 (2.33–5.64)***
Limited symptom attacks lifetime	6.11 (1.31–42.9)*	NS	NS	NS	NS	NS
Panic disorder current	15.1 (7.99–31.1)***	5.99 (3.49–10.3)***	8.29 (3.09–21.3)***	17.7 (8.15–39.3)***	4.40 (2.58–7.74)***	4.43 (2.62–7.56)***
Panic disorder without agoraphobia current	4.58 (3.26–6.48)***	4.04 (2.68–6.19)***	6.07 (2.18–21.5)**	6.67 (2.87–18.2)***	2.23 (1.63–3.06)***	2.45 (1.74–3.46)***
Panic disorder with agoraphobia current	7.29 (5.12–10.5)***	4.96 (3.29–7.57)***	11.8 (3.88–51.1)***	15.1 (5.78–51.5)***	2.77 (2.00–3.84)***	3.93 (2.77–5.61)***

Agoraphobia current without history of panic disorder	8.66 (6.05–12.5)***	4.35 (2.89–6.60)***	11.4 (3.76–49.4)***	14.5 (5.58–49.7)***	2.41 (1.74–3.33)***	5.20 (3.64–7.47)***
Social phobia (social anxiety disorder) current	12.9 (8.31–20.4)***	7.24 (4.69–11.2)***	27.1 (8.86–118)***	27.5 (11.2–83.0)***	4.44 (2.99–6.66)***	7.55 (5.01–11.5)***
Obsessive–compulsive disorder current	6.84 (4.49–10.6)***	13.0 (8.23–20.7)***	15.9 (5.94–50.0)***	20.3 (8.91–52.5)***	9.32 (5.92–15.1)***	9.21 (5.99–14.4)***
Post-traumatic stress disorder current	7.17 (5.02–10.3)***	7.46 (4.88–11.6)***	9.39 (3.36–33.3)***	10.5 (4.48–28.6)***	10.7 (7.44–15.7)***	7.32 (5.07–10.7)***
Alcohol dependence current	6.51 (2.92–16.0)***	6.45 (2.98–14.1)***	NS	NS	6.01 (2.64–15.5)***	5.72 (2.64–13.1)***
Alcohol abuse current	3.92 (1.52–10.8)**	5.30 (2.03–13.9)***	NS	NS	9.71 (3.17–42.2)***	3.75 (1.46–9.97)**
Substance dependence current	3.71 (1.32–11.2)*	4.58 (1.58–13.0)**	10.7 (2.27–37.7)***	6.21 (1.36–21.0)**	5.32 (1.80–19.3)**	NS
Substance abuse current	5.78 (1.59–27.0)*	5.21 (1.43–19.0)**	18.4 (3.71–73.1)***	10.7 (2.22–40.9)***	4.46 (1.23–20.9)*	4.48 (1.27–17.7)*
Mood disorder with psychotic features lifetime	39.2 (24.0–66.3)***	7.28 (4.77–11.2)***	14.2 (5.07–50.4)***	16.1 (6.86–44.1)***	5.63 (3.87–8.27)***	6.96 (4.74–10.3)***
Mood disorder with psychotic features current	67.3 (41.3–114)***	5.85 (3.85–8.99)***	12.0 (3.96–52.2)***	15.4 (5.90–52.6)***	4.15 (2.98–5.81)***	6.06 (4.23–8.77)***
Psychotic disorder current	121 (69.9–217)***	5.72 (3.78–8.73)***	14.6 (4.79–63.1)***	11.3 (4.86–31.0)***	3.72 (2.65–5.24)***	4.96 (3.46–7.14)***
Psychotic disorder lifetime	—	5.06 (3.36–7.70)***	13.7 (4.52–59.6)***	13.5 (5.51–40.3)***	4.23 (3.02–5.96)***	6.14 (4.27–8.89)***
Anorexia nervosa current	5.06 (3.36–7.70)***	—	30.6 (9.98–133)***	57.8 (19.9–246)***	7.63 (4.93–12.1)***	8.54 (5.58–13.2)***
Bulimia nervosa current	13.7 (4.52–59.6)***	30.6 (9.98–133)***	—	1023 (189–19 167)***	16.9 (4.80–107)***	17.0 (5.57–73.6)***
Anorexia nervosa binge eating/purging type current	13.5 (5.51–40.3)***	57.8 (19.9–246)***	1023 (189–19,167)***	—	18.7 (6.51–78.8)***	22.0 (8.40–75.3)***
Generalized anxiety disorder current	4.23 (3.02–5.96)***	7.63 (4.93–12.1)***	16.9 (4.80–107)***	18.7 (6.51–78.8)***	—	14.1 (9.42–21.4)***
Antisocial personality disorder lifetime	6.14 (4.27–8.89)***	8.54 (5.58–13.2)***	17.0 (5.57–73.6)***	22.0 (8.40–75.3)***	14.1 (9.42–21.4)***	—

ICD-10: International Classification of Diseases 10; COR: crude odds ratio; CI: confidence interval; NS: not significant.

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

Annex 3. WHO ASSIST lifetime and current substance use

Table A3.1 WHO ASSIST lifetime and current substance use stratified by sex, community versus clinic, internal displacement and study site (*n* = 713)

Substance use	Sex			Community versus clinic			Internal displacement			Study site			
	Males	Females	<i>P</i>	Community	Clinic	<i>P</i>	No	Yes	<i>P</i>	Baidoa	Dolow	Kismayo	<i>P</i>
	No. (%)	No. (%)		No. (%)	No. (%)		No. (%)	No. (%)		No. (%)	No. (%)	No. (%)	
Overall lifetime	303 (72.7)	77 (26.0)	< 0.001	320 (50.2)	60 (78.9)	< 0.001	355 (59.4)	25 (21.7)	< 0.001	139 (61.8) ^a	29 (12.6) ^b	212 (82.2) ^c	< 0.001
Overall current	289 (69.3)	72 (24.3)	< 0.001	307 (48.2)	54 (71.1)	< 0.001	337 (56.4)	24 (20.9)	< 0.001	136 (60.4) ^a	25 (10.9) ^b	200 (77.5) ^c	< 0.001
Tobacco lifetime	263 (63.1)	14 (4.7)	< 0.001	241 (37.8)	36 (47.4)	0.107	256 (42.8)	21 (18.3)	< 0.001	122 (54.2) ^a	19 (8.36) ^b	136 (52.7) ^a	< 0.001
Alcohol lifetime	86 (20.6)	3 (1.0)	< 0.001	80 (12.6)	9 (11.8)	0.858	87 (14.5)	2 (1.7)	< 0.001	77 (34.2) ^a	1 (0.4) ^b	11 (4.3) ^c	< 0.001
Cannabis lifetime	115 (27.6)	5 (1.7)	< 0.001	104 (16.3)	16 (21.1)	0.298	118 (19.7)	2 (1.7)	< 0.001	94 (41.8) ^a	1 (0.4) ^b	25 (9.7) ^c	< 0.001
Cocaine lifetime	5 (1.20)	0 (0.0)	0.059	4 (0.6)	1 (1.3)	0.497	5 (0.84)	0 (0.0)	0.325	1 (0.4) ^a	0 (0.0) ^a	4 (1.5) ^a	0.105
Amphetamine lifetime	140 (33.6)	13 (4.4)	< 0.001	126 (19.8)	27 (35.5)	0.002	147 (24.6)	6 (5.22)	< 0.001	93 (41.3) ^a	1 (0.4) ^b	59 (22.9) ^c	< 0.001
Inhalants lifetime	72 (17.3)	2 (0.7)	< 0.001	67 (10.5)	7 (9.2)	0.724	74 (12.4)	0 (0)	< 0.001	61 (27.1) ^a	0 (0.0) ^b	13 (5.0) ^c	< 0.001
Sedatives lifetime	203 (48.7)	62 (20.9)	< 0.001	217 (34.1)	48 (63.2)	< 0.001	255 (42.6)	10 (8.7)	< 0.001	110 (48.9) ^a	7 (3.0) ^b	148 (57.4) ^a	< 0.001
Hallucinogens lifetime	89 (21.3)	18 (6.1)	< 0.001	87 (13.7)	20 (26.3)	0.003	105 (17.6)	2 (1.7)	< 0.001	54 (24.0) ^a	5 (2.2) ^b	48 (18.6) ^a	< 0.001
Opioids lifetime	15 (3.6)	10 (3.4)	0.876	21 (3.3)	4 (5.3)	0.378	24 (4.0)	1 (0.9)	0.093	17 (7.6) ^a	0 (0.0) ^b	8 (3.1) ^c	< 0.001
Khat lifetime	36 (8.6)	0 (0.0)	< 0.001	29 (4.5)	7 (9.2)	0.08	31 (5.28)	5 (4.3)	0.708	0 (0.0) ^a	14 (6.1) ^b	22 (8.5) ^b	< 0.001
Tobacco current	249 (59.7)	14 (4.7)	< 0.001	232 (36.4)	31 (40.8)	0.456	242 (40.5)	21 (18.3)	< 0.001	122 (54.2) ^a	17 (7.4) ^b	124 (48.1) ^a	< 0.001
Alcohol current	84 (20.1)	2 (0.7)	< 0.001	78 (12.2)	8 (10.5)	0.664	84 (14.0)	2 (1.7)	< 0.001	77 (34.2) ^a	1 (0.4) ^b	8 (3.1) ^c	< 0.001
Cannabis current	113 (27.1)	4 (1.3)	< 0.001	101 (15.9)	16 (21.1)	0.248	115 (19.2)	2 (1.7)	< 0.001	93 (41.3) ^a	1 (0.4) ^b	23 (8.9) ^c	< 0.001
Cocaine current	4 (1.0)	0 (0.0)	0.091	3 (0.5)	1 (1.3)	0.351	4 (0.7)	0 (0.0)	0.379	0 (0.0) ^a	0 (0.0) ^a	4 (1.5) ^a	0.029
Amphetamine current	129 (30.9)	11 (3.7)	< 0.001	117 (18.4)	23 (30.3)	0.014	134 (22.4)	6 (5.2)	< 0.001	86 (38.2) ^a	1 (0.4) ^b	53 (20.5) ^c	< 0.001

Inhalants current	67 (16.1)	1 (0.34)	< 0.001	62 (9.7)	6 (7.9)	0.606	68 (11.4)	0 (0.0)	< 0.001	59 (26.2) ^a	0 (0.0) ^b	9 (3.5) ^c	< 0.001
Sedatives current	197 (47.2)	60 (20.3)	< 0.001	214 (33.6)	43 (56.6)	< 0.001	247 (41.3)	10 (8.7)	< 0.001	108 (48.0) ^a	7 (3.0) ^b	142 (55.0) ^a	< 0.001
Hallucinogens current	84 (20.1)	16 (5.4)	< 0.001	81 (12.7)	19 (25.0)	0.004	98 (16.4)	2 (1.7)	< 0.001	50 (22.2) ^a	5 (2.2) ^b	45 (17.4) ^a	< 0.001
Opioids current	12 (2.9)	9 (3.0)	0.899	17 (2.7)	4 (5.3)	0.206	20 (3.3)	1 (0.9)	0.151	15 (6.7) ^a	0 (0.0) ^b	6 (2.3) ^c	< 0.001
Khat current	30 (7.2)	0 (0.0)	< 0.001	24 (3.8)	6 (7.9)	0.09	26 (4.3)	4 (3.5)	0.671	0 (0.0) ^a	10 (4.3) ^b	20 (7.7) ^b	< 0.001

WHO: World Health Organization; ASSIST: Alcohol, Smoking, and Substance Involvement Screening Test.

Notes: *P* from the chi-squared test or Fisher's exact test when appropriate. Each subscript letter (a,b,c) denotes a subset of study site categories whose column proportions do not differ significantly from each other at the 0.05 level.

Annex 4. Peacebuilding response pattern

Table A4.1. Peacebuilding response pattern by sex, community versus clinic, internal displacement and study site

Peacebuilding initiative	Mean (standard deviation)									
	Total (n = 713)	Sex		Network		Internal displacement		Study site		
		Male	Female	Community	Clinic	No	Yes	Baidoa	Doolow	Kismayo
<i>Employment opportunities</i>										
B3. How often do you worry about meeting your and your family's basic needs?	3.12 (1.38)	3.12 (1.35)	3.14 (1.43)	3.15 (1.40)	2.88 (1.18)	3.12 (1.39)	3.12 (1.34)	2.68 (1.12)	3.43 (1.42)	3.23 (1.46)
B4. How do you expect your economic situation to be in a year, compared to now?	2.14 (0.78)	2.12 (0.79)	2.17 (0.77)	2.12 (0.78)	2.33 (0.70)	2.16 (0.78)	2.06 (0.79)	2.04 (0.72)	2.16 (0.81)	2.21 (0.79)
B5. How likely is it for you to remain unemployed after the end of the programme?	2.38 (1.01)	2.31 (0.99)	2.47 (1.03)	2.40 (1.01)	2.20 (0.98)	2.33 (1.03)	2.66 (0.85)	2.35 (0.89)	2.45 (1.07)	2.34 (1.05)
B5. How likely is it for you to do further skills development after the end of the programme?	2.06 (0.90)	2.12 (0.91)	1.96 (0.88)	2.03 (0.89)	2.26 (0.98)	2.02 (0.91)	2.25 (0.84)	2.28 (0.90)	2.03 (0.84)	1.88 (0.92)
B5. How likely is it for you to do a job without contract or social security after the end of the programme?	1.85 (0.80)	1.88 (0.80)	1.81 (0.80)	1.86 (0.79)	1.80 (0.86)	1.78 (0.79)	2.23 (0.73)	2.13 (0.84)	1.81 (0.76)	1.65 (0.73)
B5. How likely is it for you to do self-employment after the end of the programme?	2.42 (0.97)	2.48 (0.97)	2.33 (0.96)	2.40 (0.97)	2.57 (0.97)	2.38 (0.98)	2.62 (0.86)	2.76 (0.98)	2.30 (0.88)	2.22 (0.95)
B5. How likely is it for you to do part time employment after the end of the programme?	2.08 (0.90)	2.11 (0.89)	2.04 (0.92)	2.09 (0.89)	1.97 (0.97)	2.01 (0.90)	2.43 (0.84)	2.38 (0.97)	1.91 (0.81)	1.97 (0.85)
B5. How likely is it for you to do full time employment after the end of the programme?	2.06 (0.93)	2.14 (0.93)	1.96 (0.92)	2.06 (0.92)	2.05 (1.02)	2.02 (0.94)	2.30 (0.83)	2.48 (0.97)	1.95 (0.83)	1.81 (0.85)
<i>Contact and intergroup relations</i>										
C1. In the last 3 months, did you personally interact with people from Community?	0.25 (0.43)	0.27 (0.45)	0.22 (0.41)	0.24 (0.43)	0.34 (0.48)	0.25 (0.44)	0.22 (0.41)	0.27 (0.45)	0.23 (0.42)	0.24 (0.43)
C2. If YES, how did you interact?										
Social events	0.67 (0.47)	0.67 (0.47)	0.66 (0.48)	0.68 (0.47)	0.62 (0.50)	0.66 (0.47)	0.68 (0.48)	0.52 (0.50)	0.65 (0.48)	0.82 (0.39)

Cultural events	0.28 (0.45)	0.28 (0.45)	0.27 (0.45)	0.30 (0.46)	0.15 (0.37)	0.24 (0.43)	0.48 (0.51)	0.26 (0.44)	0.44 (0.50)	0.15 (0.36)
Religious events	0.29 (0.46)	0.30 (0.46)	0.28 (0.45)	0.33 (0.47)	0.08 (0.27)	0.27 (0.45)	0.44 (0.51)	0.16 (0.37)	0.59 (0.50)	0.16 (0.37)
Sporting events	0.12 (0.33)	0.17 (0.38)	0.05 (0.21)	0.12 (0.33)	0.15 (0.37)	0.14 (0.35)	0.00 (0.00)	0.02 (0.13)	0.20 (0.41)	0.16 (0.37)
Trading activity	0.06 (0.24)	0.04 (0.21)	0.09 (0.29)	0.07 (0.25)	0.04 (0.20)	0.06 (0.24)	0.08 (0.28)	0.03 (0.18)	0.13 (0.34)	0.03 (0.18)
Political event	0.02 (0.13)	0.03 (0.16)	0.00 (0.00)	0.01 (0.11)	0.04 (0.20)	0.02 (0.14)	0.00 (0.00)	0.03 (0.18)	0.00 (0.00)	0.02 (0.13)
Livelihood association	0.05 (0.21)	0.05 (0.23)	0.03 (0.18)	0.05 (0.21)	0.04 (0.20)	0.05 (0.22)	0.00 (0.00)	0.03 (0.18)	0.06 (0.23)	0.05 (0.22)
Borrowing or lending money	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
At work	0.07 (0.26)	0.08 (0.27)	0.06 (0.24)	0.08 (0.27)	0.04 (0.20)	0.08 (0.27)	0.04 (0.20)	0.05 (0.22)	0.06 (0.23)	0.11 (0.32)
Education	0.07 (0.25)	0.09 (0.29)	0.03 (0.18)	0.07 (0.26)	0.04 (0.20)	0.08 (0.27)	0.00 (0.00)	0.03 (0.18)	0.09 (0.29)	0.08 (0.27)
Other	0.21 (0.41)	0.25 (0.43)	0.14 (0.35)	0.15 (0.36)	0.54 (0.51)	0.20 (0.40)	0.28 (0.46)	0.30 (0.46)	0.06 (0.23)	0.26 (0.44)
C3. If yes, how often did you interact?	2.66 (0.99)	2.68 (1.01)	2.61 (0.97)	2.71 (1.02)	2.35 (0.75)	2.66 (0.98)	2.60 (1.08)	2.77 (0.94)	2.48 (0.95)	2.69 (1.08)
C4. Would you feel comfortable working alongside a member of the community?	2.38 (0.81)	2.41 (0.80)	2.34 (0.82)	2.38 (0.80)	2.33 (0.89)	2.38 (0.81)	2.37 (0.81)	2.25 (0.83)	2.38 (0.78)	2.49 (0.80)
C-G1. Would you feel comfortable working alongside a member of the opposite sex?	2.45 (0.78)	2.46 (0.78)	2.43 (0.79)	2.48 (0.77)	2.21 (0.81)	2.44 (0.78)	2.52 (0.80)	2.41 (0.79)	2.48 (0.72)	2.46 (0.83)
C5. How would you describe your relationships with members of the community?	2.53 (0.76)	2.52 (0.77)	2.55 (0.75)	2.54 (0.76)	2.47 (0.77)	2.51 (0.78)	2.63 (0.67)	2.42 (0.77)	2.50 (0.75)	2.66 (0.74)
C-G2. How would you describe your relationships with members of the opposite sex?	2.64 (0.72)	2.67 (0.73)	2.61 (0.69)	2.64 (0.71)	2.64 (0.81)	2.65 (0.72)	2.63 (0.72)	2.60 (0.74)	2.51 (0.69)	2.80 (0.70)
C6. How much do you trust members of the community?	2.26 (0.74)	2.27 (0.76)	2.24 (0.73)	2.26 (0.75)	2.21 (0.68)	2.24 (0.75)	2.35 (0.70)	2.08 (0.72)	2.23 (0.71)	2.43 (0.75)
C7. To what extent do you agree with the following statement? "My community is a place where people from different backgrounds get on well together".	2.55 (0.76)	2.58 (0.75)	2.50 (0.76)	2.55 (0.76)	2.54 (0.72)	2.54 (0.77)	2.59 (0.65)	2.37 (0.77)	2.54 (0.74)	2.71 (0.72)
<i>Inequality and citizen-state relations (grievances)</i>										
D1. In general, how do you rate your living conditions (including conditions of housing, water, sanitation, access to electricity, access to road and transport) compared to those of other country	2.25 (0.88)	2.31 (0.85)	2.17 (0.92)	2.25 (0.88)	2.32 (0.87)	2.24 (0.85)	2.34 (0.99)	2.38 (0.94)	2.26 (0.98)	2.14 (0.70)

(wo)men?											
D2. Think about the conditions of people from your community. Are their economic conditions worse, the same as or better than those members of the community	2.56 (0.90)	2.55 (0.85)	2.57 (0.97)	2.56 (0.91)	2.58 (0.87)	2.54 (0.86)	2.66 (1.08)	2.52 (0.95)	2.63 (1.03)	2.54 (0.71)	
D-G1. Do you think women's economic conditions are worse, same as or better than those of men?	2.47 (0.93)	2.51 (0.86)	2.42 (1.01)	2.48 (0.93)	2.41 (0.93)	2.46 (0.91)	2.54 (1.02)	2.66 (1.04)	2.54 (1.02)	2.25 (0.65)	
D3. How often, if ever, are people of your community treated unfairly by the government?	1.81 (0.80)	1.85 (0.78)	1.74 (0.83)	1.84 (0.81)	1.57 (0.66)	1.79 (0.78)	1.90 (0.90)	2.18 (0.86)	1.63 (0.78)	1.64 (0.65)	
D4. Think about the condition of people living in this region. Are their economic conditions worse, the same as or better than for those living in other regions in this country?	2.56 (0.85)	2.56 (0.83)	2.56 (0.88)	2.54 (0.85)	2.72 (0.79)	2.52 (0.83)	2.76 (0.93)	2.71 (0.91)	2.56 (0.91)	2.43 (0.70)	
D5. How often, if ever, are people living in this region treated unfairly by the government?	1.89 (0.86)	1.94 (0.86)	1.82 (0.86)	1.90 (0.87)	1.84 (0.86)	1.90 (0.85)	1.87 (0.92)	2.35 (0.94)	1.57 (0.74)	1.79 (0.73)	
D-G2. How often, if ever, are women treated unfairly by the state government because they are women?	1.77 (0.85)	1.80 (0.85)	1.72 (0.85)	1.78 (0.85)	1.70 (0.83)	1.76 (0.85)	1.79 (0.83)	2.11 (0.91)	1.60 (0.86)	1.62 (0.69)	
D6. How much do you trust the government?	2.65 (0.90)	2.61 (0.92)	2.71 (0.88)	2.64 (0.91)	2.78 (0.87)	2.68 (0.91)	2.53 (0.88)	2.25 (0.77)	2.85 (0.93)	2.83 (0.87)	
D-G3. How much do you think community leaders also defend women's needs and aspirations?	2.19 (0.78)	2.21 (0.78)	2.17 (0.79)	2.20 (0.79)	2.08 (0.74)	2.17 (0.79)	2.31 (0.75)	2.08 (0.71)	2.43 (0.80)	2.07 (0.79)	

Notes: Binary response scale scored from 0 to 1 (C1, C2); Response scale scored from 1 to 3 (B4); Response scale scored from 1 to 4 (B5, C3, C4, C-G1, C5, C-G2, C6, C7, D3, D5, D-G2, D6, DG-3); Response scale scored from 1 to 5 (B3, D1, D2, D-G1, D4). The lower the mean score the worse the perception about peacebuilding.

Key:

0 = No (C1, C2).

1 = Yes (C1, C2)/Never (B3, D3, D5, D-G2)/Worse off (B4)/Very likely (B5)/Less than once a month (C3)/Very uncomfortable (C4, C-G1)/Very bad (C5, C-G2)/To a small extent (C6, D6, D-G3)/Strongly disagree (C7)/Much worse (D1, D2, D-G1, D4).

2 = Rarely (B3)/Sometimes (D3, D5, D-G2)/About the same (B4)/Unlikely (B5)/Several times a month (C3)/Rather uncomfortable (C4, C-G1)/Rather bad (C5, C-G2)/To a rather small extent (C6, D6, D-G3)/Disagree (C7)/Worse (D1, D2, D-G1, D4).

3 = Sometimes (B3)/Often (D3, D5, D-G2)/Better off (B4)/Likely (B5)/Several times a week (C3)/Rather comfortable (C4, C-G1)/Rather good (C5, C-G2)/To a rather great extent (C6, D6, D-G3)/Agree (C7)/Same (D1, D2, D-G1, D4).

4 = Most of the time (B3)/Always (D3, D5, D-G2)/Very likely (B5)/Daily (C3)/Very comfortable (C4, C-G1)/Very good (C5, C-G2)/To a great extent (C6, D6, D-G3)/Strongly agree (C7)/Better (D1, D2, D-G1, D4).

5 = Always (B3)/Much better (D1, D2, D-G1, D4).

Annex 1. Training pictures



