

# Mental health consequences of long-term stays in refugee camps: Preliminary evidence from Moria

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## Research article

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## Abstract

**Background** Over the last decade, millions of refugees have arrived in Europe. Upon arrival refugees reside in designated refugee camps which, even though originally designed to home refugees on a short stay basis only, developed into long-stay facilities. Some of these camps have detention-like characteristics and dire living conditions. One such example is Moria camp on the island of Lesbos, Greece, which has been repeatedly reported for being overcrowded, unhygienic, and unsafe. This study explores the incidence of acute mental health crises and their relationship with the length of stay in the camp.

**Methods** A cross-sectional study was conducted using routinely collected data on 857 consultations during 90 nights at an emergency night clinic in Moria camp. Logistic regression analysis was used to explore whether the length of stay in the camp was predictive of the occurrence of acute mental health crises.

**Results** Of all consultations (n=857), 25.5% (n=219) were related to mental health problems; 17.4% (n=38) of these met the study's case definition of acute mental health crisis. Such crises were positively associated with the length of stay in the camp (p=0.044); the odds ratio increases with 1.03 for every 10% increase in days of residence. This is notable when considering the average length of stay in the camp (71 days).

**Conclusion** Acknowledging that this study does not provide causal effects on the relation between length of stay and mental health crises, the established link can hardly be related to anything else but the inhumane living conditions in the camp, its inhabitants' lack of future expectations, and the scarce provision of mental health services. This form of neglect urgently calls for attention of the medical world and Europe's policy makers.

## Background

Over the last decade millions of refugees have arrived in Europe, often by crossing the Mediterranean by boat or by traveling by land via Turkey, through Greece and the Balkans to Western Europe.<sup>1</sup> While immigration decreased following the EU-Turkey agreement in March 2016, the length of stay for a refugee at the entry locations drastically increased due to a prolonged administrative process. Upon arrival, refugees reside in camps, which, even though originally designed as short-stay residence, developed into long-stay facilities. Some of these camps have detention-like characteristics and dire living conditions.<sup>2</sup> One such example is the Moria camp on the island of Lesbos, Greece. Lesbos was, and still is a key entry point in Greece.<sup>3</sup> Hence Lesbos houses several refugee camps of which includes Moria camp, which has been repeatedly reported for being overcrowded, unhygienic, and unsafe<sup>4-6</sup> notwithstanding EU funding and the efforts of privately-funded non-governmental organizations.<sup>7</sup> Charlie Yaxley, a spokesman for the UN High Commissioner for Refugees (UNHCR), reported the following about the camp in August 2018: "We are particularly concerned about woefully inadequate sanitary facilities, fighting amongst frustrated communities, rising levels of sexual harassment and assaults, and the increasing need for medical and psycho-social care".<sup>9</sup> In accordance with the EU-Turkey deal containment policy, refugees are confined to the island on which they arrive until their asylum claims are adjudicated. Those who are deemed vulnerable (e.g., elderly, sick, pregnant, severe mental health conditions) should be exempt from this policy and be able to await the outcome of their asylum procedure on mainland Greece, where facilities are better.<sup>(9)</sup> However, the lack of accommodation on the mainland, and delays in the vulnerability assessment procedure leave thousands of eligible individuals and families trapped on the island,<sup>(9)</sup> with most medical care provided by NGOs.

Moria Medical Support (MMS), a Dutch registered NGO, was one of those NGOs, temporarily providing emergency medical care from 21:00 to 08:00 hrs, seven days per week. As expected, working conditions were challenging as a result of limited resources and a lack of safety. See Box 1.

## Text Box 1

*The clinic consisted of a container with three small consultation rooms. Unable to gain medical access during the day, patients of all ages and nationalities would line up well before opening hours. A triage system was used to ensure that the worst cases were addressed, adding to desperation and anxiety in those turned away. Inside the clinic, there was often agitation and noise; earplugs were sometimes handed to patients to prevent panic and/or dissociation being triggered. MMS staff had to lock themselves in and call the police on a regular basis, mostly because of threatening or aggressive patients. On one occasion, twenty armed men attacked the clinic trying to assault a patient that was inside. The night watch of the police was outnumbered and could not prevent the clinic being demolished and patients and staff inside being assaulted. It marked the end of the clinic activities.*

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This study aims to explore the relation between living in the camp and mental health problems in Moria camp. We hypothesized that given the stressors of poor living conditions, lack of care, safety and perspective, greater length of stay in the camp would negatively impact mental health.

No ethical approval was required for this study, as it only made use of routinely collected, anonymized information on patients.

## Methods

### Study site, period and sample

The night clinic of MMS provided emergency medical care in Moria camp from January to April 2018. During this period the camp population size fluctuated between 5,560 and 6,429 people.<sup>10</sup> An anonymized database was provided by MMS, comprising routinely collected information on 1,206 clinical consultations with 937 unique visitors. For some patients, relevant data were missing, meaning that the final sample comprised 857 consultations from 635 unique patients.

### Data

Apart from medical data (problem, diagnosis, and treatment), information had been documented on patients' sex, age, country of origin, and length of stay in the camp at the time of consultation.

Categorization of raw medical data was done in retrospect by the first author of this article. 'Acute mental health crisis' was chosen as the indicator of an exacerbated mental health condition. The reason for investigating exacerbations rather than the actual disorders themselves (i.e., depression, anxiety, PTSD, psychosis, substance abuse) is threefold. First, the setting of the clinic (see Box 1) did not allow standard psychiatric interviewing. Second, few of the volunteer medical staff were qualified to adequately differentiate between the underlying psychiatric disorders in patients presenting an acute crisis. Lastly, the association between the presentation rate of acute mental health crises at the clinic and the incidence of such crises in the camp is likely to be stronger than the association between the presentation rate of general mental health problems at the clinic and the prevalence of such problems in the camp. To clarify, given the nature (emergency) and opening hours of the clinic, the larger part of patients with non-urgent mental health problems were expected to stay at their designated living space within the camp, whereas patients with serious suicide attempts, significant self-harm, and severe panic/agitation/dissociation/psychosis tended to be brought to the clinic by bystanders if they would not come on their own accord.

## Case definition

'Acute mental health crisis' was operationalized as a concept encompassing three conditions: a) self-harm as constituted by a non-accidental self-inflicted wound, the majority being skin cutting; b) a suicide attempt as constituted by an action with suicidal intent, in which either the seriousness of the intent or the resulting injuries warranted immediate referral to (in-hospital) specialized care; c) a severe state of panic and/or agitation and/or dissociation and/or psychosis as constituted by anxiety, nervous agitation, undirected aggression, alienation or disturbed reality testing, causing disturbed behavior resistant to non-invasive treatment (i.e., adequate psychological approach, relaxation and grounding techniques, or/and oral psychotropic medication) and thus requiring intra-muscular psychotropic medication. The additional criterion 'resistant to non-invasive treatment' was added to differentiate between relatively mild or possibly self-limiting crises and more serious cases. E.g., three patients presenting with an acute psychosis who accepted oral medication were not included in the sample.

## Data analysis

Main demographic and displacement characteristics were described, as well as a general overview of the mental health consultations. Logistic regression was conducted with duration of stay as an independent variable, and the manifestation of any of the conditions covered by this study's case definition as dependent variables (value of one if present, zero otherwise). The regression also included country of origin as displacement characteristic and, as prevalence rates of mental health disorders vary with gender<sup>11</sup> and are non-linear through individuals' lifespan,<sup>12,13</sup> also gender, age, and age squared as sociodemographic characteristics.

## Results

There was no significant difference between included and excluded consultations in terms of incidence of acute mental health crises. Table 1 shows the socio-demographic and displacement characteristics for the refugees in the study sample (n=635). The majority were men (59.4%) of Syrian (31.5%) or Afghan (26.5%) origin, while the average age was 23.2 years [0–71]. The average length of stay in the camp until consultation was 71.1 days [0–532]. A total of 144 individuals presented with mental health problems. Those with an acute mental health crisis (n=26) were mostly Iraqi (42.3%) men (88.5%), with an average age of 23.1 years [4–36]. The average length of stay until consultation for this group was 108.2 days [2–471]. Individuals presenting with non-acute mental health problems (n=118) were mostly from Congo (52.5%), male (69.5%), with an average age of 24.9 [0–66], and an average length of stay until consultation of 67.9 days [1–532].

Some individuals presented more than once with mental health problems, whether or not acute. Regards separate mental health consultations (n=219, 25.5 % of all consultation) (Table 2), acute mental health crises represented 17.4% (n=38), with self-harm (7.3%) and severe panic/agitation/dissociation/psychosis (6.4%) being the most common, followed by suicide attempt (3.7%). The most relevant other mental health consultations (82.7%) were trauma related symptoms (28.8%) and mild to moderate panic/agitation/dissociation/psychosis (23.3%).

Logistic regression analysis (Table 3) shows that age and age squared are significantly associated with increased odds of acute mental health crisis. The increased odds for each additional year is 1.264 (p=0.006), while for age squared the odds decreased by 0.5% (p=0.009). The length of stay in Moria camp is significantly associated with increased odds of 1.367 (p=0.044). A 10% increase in the number of days spent at the camp increases the odds ratio by 1.03.

## Discussion

This cross-sectional study among refugees in Moria camp in Lesvos, Greece, examined the incidence of acute mental health crises and their relationship with the length of stay in the camp. The data used were collected from 857 consultations during 90 nights at an emergency night clinic in the camp. While 24.4% (n=219) of the consultations were related to mental health problems, 17.4% (n=38) of these met the study's case definition of acute mental health crisis. Such crises were significantly associated with the length of stay in the camp ( $p=0.044$ ). The established association implies that the odds ratio of experiencing such crisis increases with 1.03 for every 10% increase in days of residence. This is significant when considering the average length of stay in the camp (71 days).

Taking into account that patients were visiting the clinic at night and constituted the most alarming cases selected through a strict triage, the number of mental health problems presented is substantial. With on average 2.3 presentations per night it would compare to 40-50 patients visiting a small European hospital (with a target population of 100,000) per night for psychiatric problems. This finding suggests that the prevalence of mental health problems in the camp population was high and that access to mental health care during the day remained limited.

This study's findings are in line with previous research, showing an increased risk of mental health conditions in refugees from war-torn countries.<sup>14-16</sup> In addition, there is ample evidence of the detrimental mental health effects of a prolonged asylum process in Greece and other countries,<sup>17-19</sup> and of residing in Moria camp in particular.<sup>20</sup> Furthermore, while the current policy detains refugees in Lesvos, detention practices have been shown to have negative mental health implications<sup>21</sup> which continue after release,<sup>22</sup> eventually affecting successful integration in future host societies.<sup>23</sup>

Our findings extend the existing evidence, as they do not relate to mental health disorders as such, but rather to exacerbations of a range of these (e.g., PTSD, depression, anxiety, psychosis, and substance abuse). Such crises not only add to the suffering of the affected individuals, but also to 'collateral damage' in various forms, ranging from serious destabilization of the social environment to physical harm to others in the person's environment, all of which may traumatize an already vulnerable population, children in particular.<sup>24</sup>

This study has several limitations, mostly related to data availability. First, neither the overall prevalence of mental health problems in the camp nor the average length of stay could be quantified, as no data could be collected on population level, which might lead to an unavoidable selection bias. The overall average length of stay, however, was not a designated study outcome. A second limitation is that there is likely a higher incidence of acute mental health crises than the one estimated in this study. As described in Box 1, data collection was problematic due to difficult working conditions for example patients being too aggressive and/or intoxicated, meaning that not all refugees suffering an acute mental health crisis were included. This resulted in 349 of all consultations not being included in the study sample. Furthermore, acute mental health crises that were professionally addressed during the daytime clinic hours were not seen by MMS, thus not included in the study sample. Lastly, no data exists on actual suicides. Given the serious nature of some attempts reported or identified at the night clinic, one might assume other attempts to have resulted in death. Relevant data, however, were not available.

## Conclusion

To date, facilities for refugees on Lesvos and other Greek islands have not improved since the EU-Turkey deal was signed. And while acknowledging that this study does not provide causal effects on the relation between length of stay and mental

health crises, the established link can hardly be related to anything else but the living conditions in the camp, its inhabitants' lack of future expectations, and the scarce provision of mental health services in the camp. This form of neglect urgently calls for attention of the medical world and Europe's policy makers.

## Abbreviations

MMS	Moria Medical Support (a Dutch registered Medical NGO)
EU	European Union
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
NGO	Non-governmental organization
PTSD	Post-traumatic stress disorder

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## Declarations

Ethics approval and consent to participate

A written permission to use the datasets for this study was provided by MMS. As data used were retrieved from an existing anonymous database only comprising data that had routinely been collected within the framework of patient care, there was no need for ethical approval. This was confirmed by the Ethics Committee of Santiago's Universidad del Desarrollo, Chile. Therefore, no local ethics committee was approached for approval.

Consent for publication:

Not applicable

Availability of data and materials:

Datasets analyzed for the current study were provided by MMS. Requests for data sharing can be directed to the corresponding author, who will discuss the meeting of requests with MMS board members.

Competing interests:

The authors declare that they have no competing interests

Funding:

None

Authors' contributions:

WW had the original idea for the paper as she was connected with the NGO. She categorized the data and was involved in the literature research and writing the of paper. CCL and FUI were jointly responsible for the study design, the data analysis, and compiling the tables. Further, they have also supported the literature search and article writing. MF supported the data categorization and conducted the final edit. As the expert in the field, WFS contributed to the writing and supervision of the writing process. All authors have read and approved the final manuscript.

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## Tables

**Table 1**

Refugee demographic and displacement characteristics

Refugee characteristics	Total (n=635)	Acute mental health crisis (n=26)	Other mental health presentations (n=118)
Nationality (%)			
Syria	31.5%	19.2%	16.1%
Afghanistan	26.5%	11.5%	12.7%
Iraq	20.6%	42.3%	16.9%
Congo	15.8%	7.7%	52.5%
Iran	3.8%	7.7%	0.8%
Other	1.9%	11.5%	0.8%
Male	59.4%	88.5%	69.5%
Age (years)	23.2	23.1	24.9
Stay until consultation (days)	71.1	108.2	67.9

**Table 2**

Type and Frequency of Mental Health Consultations

Type	Total (n=219)
Acute mental health crisis	17.4%
Severe Panic/Agitation/Dissociation/Psychosis	6.4%
Self-harm	7.3%
Suicide attempt	3.7%
Other mental health presentations	82.6%
Trauma related symptoms	28.8%
Mild to moderate Panic/Agitation/Dissociation/Psychosis	23.3%
Low mood and/or suicidal ideation	11.9%
Other	18.7%

**Table 3**

Logistic regression odds ratios (OR), 95% confidence intervals [in brackets] and p-values for various refugee characteristics (left column) as predictors of major psychiatric disorder (right columns)

Refugee characteristics	Major psychiatric disorder odds ratio, [95% confidence limits], p value		
Male	3.728	[0.658 - 21.124]	0.137
Age	1.264	[1.071 - 1.491]	0.006
Age squared	0.995	[0.991 - 0.999]	0.009
Length of stay until consultation (days in log)	1.367	[1.009 - 1.852]	0.044
Country of origin (dummies)	Yes	..	..

## Supplementary Files

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