

# Psychological consequences in victims of maritime piracy: the Italian experience

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## ABSTRACT

**Background and aim:** Maritime piracy is a worrying phenomenon. Its recurrence in the last few years is causing several problems to the safety of maritime routes. In spite of the number of seafarers kidnapped and maintained in captivity, psychological/mental disorders developed in victims of these criminal acts have not been investigated. This study has assessed psychological consequences of kidnapping in a group of Italian seafarers held in captivity from 7 to 10 months.

**Materials and methods:** Four Italian seafarers were examined at the 5<sup>th</sup> month after release. An initial, semi-structured interview was followed by 2 structured clinical evaluations for assessing the possible presence of psychopathological disorders. Instruments used were the Cognitive Behavioural Assessment (CBA 2.0) and the Clinician-Administered Post Traumatic Stress Disorder (PTSD) Scale (CAPS-DX).

**Results:** All victims showed high scores of state anxiety ( $56.00 \pm 3.36$ ) and social adjustment disorder ( $12.75 \pm 2.21$ ) to CBA 2.0. Moreover, 3 of them revealed traits of anxiety ( $58.75 \pm 8.50$ ) and emotional instability ( $8.25 \pm 2.50$ ). Two of them had somatic disorders ( $63.25 \pm 15.94$ ), depression ( $17.25 \pm 4.78$ ) and phobic problems ( $91.00 \pm 7.02$ ). In 3 of 4 victims examined, a PTSD diagnosis was made. Symptoms of recall resulted in higher CAPS-DX ( $13.00 \pm 4.05$ ) scores.

**Conclusions:** Traumatic experiences such as being kept in captivity by pirates could entail relevant psychopathological disorders in victims and their families. Quality care interventions, aimed to develop paradigms for resilience training, represent a priority. An international partnerships and collaboration between institutions, clinicians and seafarer organisations can be useful to evaluate psychological conditions of these workers.

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**Key words:** maritime piracy, seafarers, psychopathology, Post Traumatic Stress Disorder, kidnapping

## INTRODUCTION

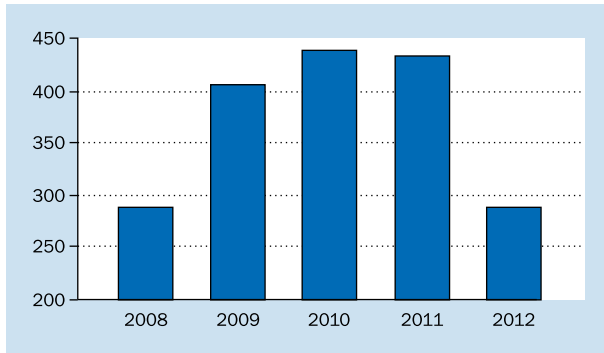
Piracy at sea, according to the United Nations Convention on the Law of the Sea, is defined as “any illegal acts of violence or detention, or any act of depredation, committed by individuals for private ends against a private ship or aircraft” [1]. In the contemporary world, piracy’s causative factors are essentially related to the socio-economical marginalisation of some groups, and the incapacity of countries to control their littoral areas. The main objective of modern pirates is to steal the entire ship and its cargo to ask for

a ransom. In 2012 the area facing Somalia towards the Gulf of Aden had the highest incidence of assaults, followed by Nigeria, Indonesia, Bangladesh, Philippines, Malaysia and Vietnam. Lowering of the attacks number has been observed recently, but maritime piracy still represents a problem [2]. Figure 1 lists the number of attacks between 2008 and 2012 in the confined areas from the Gulf of Aden and the Indian Ocean [3].

In the first 3 months of 2013, 4 vessels were hijacked, 51 vessels were boarded, 7 were fired upon and 4 reported



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**Figure 1.** Number of piracy attacks in confined areas from the Gulf of Aden and the Indian Ocean from 2008 to 2012

attempted attacks. Seventy five crew members were taken hostage, 14 kidnapped and 1 killed [4].

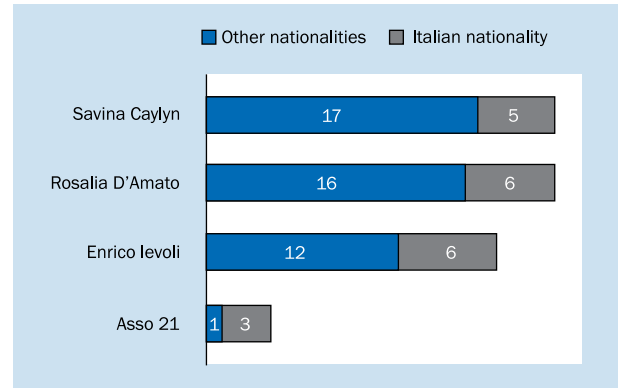
Piracy is, in itself, a phenomenon that may develop rapidly in insecure areas, and needs to be monitored constantly [5]. Prevention measures are of crucial importance, as well as therapeutic interventions that may relieve piracy consequences. These include different mental/psychological disorders suffered by the victims. Issues related to maritime piracy, including health and potential psychological problems affecting victims, were recently reviewed [6].

In spite of the number of seafarers kidnapped and maintained in captivity, health problems [7] and mental consequences of kidnapping were rarely investigated or evaluated in detail. No studies were published concerning psychological/mental consequences of piracy, neither analogies and differences with other forms of kidnappings were investigated.

Psychological consequences of maritime piracy are expected to fit in the broad category of Post Traumatic Stress Disorders (PTSD), however, only sparse information is available on the topic. More data could be useful for developing preventive interventions in favour of seafarers exposed to this risk, and/or for planning therapeutic actions.

From 2011 to 2012 there were 4 Italian ships kidnapped by pirates [8], and Italian crew member victims of these criminal acts were in total 20 (Fig. 2). The longest captivity in last 10 years was the kidnapping of Savina Caylyn and its crew, which lasted 316 days [9].

This paper summarises the results of psychological assessment of a group of Italian seafarers kidnapped and held in captivity from 7 to 10 months. The long time spent as prisoners, the absence of contacts with their own families, the area they were in captivity, which was far from the country of origin, the difficulties in communication even with pirates due to language differences, make this sample, even if small, a possible model of consequences of these criminal acts for their victims.



**Figure 2.** Italian ships kidnapped by pirates from 2011 to 2012. Ships had on board 66 seafarers, 20 of which were Italians

Global burden of psychological symptoms and their peculiar aspects were assessed through an accurate and multidimensional psychological evaluation.

## MATERIALS AND METHODS

### PARTICIPANTS

Subjects investigated were Italian seafarers victims of acts of maritime piracy. The group was composed of 4 subjects that were on board of the ships Rosalia D'Amato (IMO No. 9225201) and Savina Caylyn (IMO No. 9489285). The Rosalia D'Amato and the entire crew were kidnapped by Somali pirates on April 21, 2011 and released on November 21, 2011 (days of captivity: 214). The Savina Caylyn and the entire crew were kidnapped by Somali pirates on February 8, 2011 and released on December 21, 2011 (days of captivity: 316).

After the release, seafarers had a standard medical examination in the port/military basis reached. After return home, the control of their medical conditions went into the responsibility of their family doctors working for the Italian National Health Service (*Servizio Sanitario Nazionale*). The International Radio Medical Centre (CIRM), which is the Italian Telemedical Maritime Assistance Service and is headquartered in Rome, was in contact with families of seafarers during kidnapping. After the release of the victims, CIRM went in contact directly with them.

Individuals participating in our analysis were reached in their domiciles and were evaluated at the 5<sup>th</sup> month after the release.

### ASSESSMENT SCALES

The history of the traumatic experience and the description of psychological reactions in the various phases of the kidnapping and after the liberation were investigated in detail through a semi-structured interview. Subsequently,

the subjects were submitted to 2 structured clinical interviews for evaluating eventual psychopathological disorders.

Instruments used were the Cognitive Behavioural Assessment (CBA 2.0) and the Clinician-Administered PTSD Scale (CAPS-DX). The CBA 2.0 provides a general overview of the psychological problems in the individual and social domain [10]. It is divided into 10 scales in sequence to measure the following clinical-psychological constructs and includes:

- Scale 1 (Data collection). It has a practical utility.
- Scale 2 (State-Trait Anxiety Inventory – STAI X-1). It evaluates the temporary emotional state of an individual in a particular situation, defined as “state anxiety”.
- Scale 3 (State-Trait Anxiety Inventory – STAI X-2). It evaluates the almost stable characteristic of personality, defined as “trait anxiety”.
- Scale 4 (Personal and clinical history). It is not a standardised scale.
- Scale 5 (Eysenck Personality Questionnaire reduced form – EPQ/R). It is articulated into 4 sub-scales that explore different dimensions of the personality: introversion (EPQ/R-E), emotional instability (EPQ/R-N), social maladjustment (EPQ/R-P); lie (EPQ/R-L).
- Scale 6 (Questionnaire Psychophysiological – QPF/R). It evaluates somatic disorders.
- Scale 7 (Inventory of Fears – IP/R). It evaluates specific fears.
- Scale 8 (Questionnaire D – QD). It measures depressive symptoms.
- Scale 9 (Maudsley Obsessional-Compulsive Questionnaire MOCQ/R). It evaluates the presence of intrusive thoughts and compulsive behaviours.
- Scale 10 (State-Trait Anxiety Inventory – STAI X-1/R). It is an useful tool for assessing the accuracy and validity of the instrument.

Data from scales 1 and 4 were excluded from further analysis as not related to the psychological/mental status assessment of subjects under evaluation.

The symptoms of PTSD were measured by the CAPS-DX structured clinical interview [11]. This instrument considers 17 symptoms of PTSD according to Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) and 8 other characteristics related to this disorder. It has been developed to assess the frequency and severity of each symptom, their impact on social and working life, the global severity of the disorder and the validity of the measurements [11]. The CAPS-DX evaluates the wide range of reactions: intrusive recollection (intrusive memories, distressing dreams, sense of reliving the experience, distress and physiological reactivity), avoidance/numbing (avoidance of thoughts, feelings, activities, places and people associated with trauma, inability to recall aspects of trauma, reduced interest, restricted range of affect and sense of a foreshortened future), and

**Table 1.** Socio-demographic characteristics of subjects investigated

	Subject 1	Subject 2	Subject 3	Subject 4
Sex/Age [years]	Male/64	Male/63	Male/45	Male/29
Education (years of school attendance)	13	13	8	13
Marital status	Married	Married	Married	Single

hyperarousal symptoms (sleep disturbances, irritability, anger, difficulty in concentrating, hypervigilance, exaggerated alarm response). Moreover, CAPS-DX includes aspects related to the traumatic event, such as feelings of guilt for having committed or omitted something during the event, loss of emotional involvement in environmental events, derealisation and depersonalisation.

Each subject was also asked to refer the symptoms experienced in the month preceding our analysis and their frequency and severity on a Likert scale of 4 points. The total score for each symptom results from the sum of 2 dimensions. Data in the text are expressed as means  $\pm$  standard deviation.

## RESULTS

The subjects investigated were 4 kidnapped victims, remaining in the hands of pirates for a mean of 265 days ( $265 \pm 72.12$ ), 3 subjects for 214 days and 1 subject for 316 days. Socio-demographic characteristics of subjects examined are summarised in Table 1.

CBA 2.0 scores of all psychopathological scales were higher than normal means [12], except the scores of the sub-scale EPQ/R-L (lie) and STAI-X1/R (accuracy and validity) (Table 2).

All subjects showed scores beyond the cut-off in the STAI X-1 (state anxiety) and sub-scale EPQ/RP (social maladjustment). The majority of individuals had scores beyond the normal mean in the STAI X-2 (trait anxiety) and sub-scale EPQ/RN (emotional instability). Half of them had pathological scores in QPF/R (somatic disorders), QD (depressive symptoms) and IP/R (fears) scale. No pathological scores in control scales EPQ/R-L and STAI X-1/R were noticeable. Figure 3 summarises the prevalence of problematic areas of the CBA 2.0 in the group of victims.

Frequency and severity of the symptoms were also considered. Those of intrusive recollection were most frequent ( $M 1.63 \pm 0.32$ ), but less severe ( $M 2.01 \pm 1.04$ ), whereas symptoms of avoidance/numbing were the least frequent of all ( $M 1.33 \pm 0.96$ ). Figure 4 shows the frequency and severity means of the symptoms.

Finally, subject had feelings of guilt, anhedonia, derealisation and depersonalisation.

## DISCUSSION

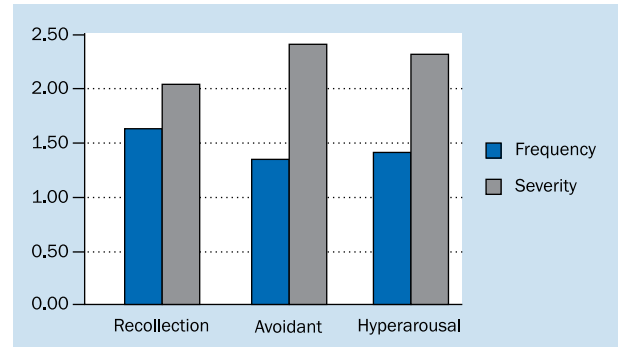
This work has investigated in detail a small group of Italian seafarer victims of maritime piracy and the psychopathological effects emerging from the trauma of kidnapping. For practical and ethical reasons the long term effects of

kidnapping are poorly reported [13]. Published data essentially refer to political conflicts, including prisoners of war and to terrorism acts [14–18]. The only scientific publication referring to the crew of a ship reports the experience of a Norwegian vessel seized upon arrival in Libya by local authorities as suspected of being enemies of the country [19]. These studies mention the higher incidence of short and long term consequences in victims. After the immediate

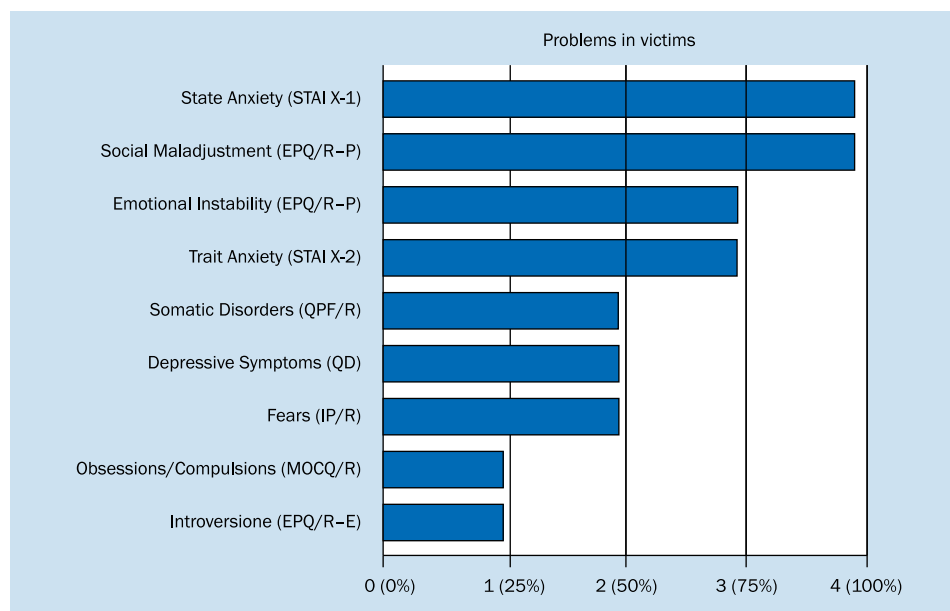
**Table 2.** Results of Cognitive Behavioural Assessment (CBA 2.0)

		Mean ± SD	Cut off
Scale 2	STAI X-1	56.00 ± 3.36	50
Scale 3	STAI X-2	58.75 ± 8.50	50
Scale 5	EPQ/R		
	EPQ/R-E	4.50 ± 2.51	4
	EPQ/R-N	8.25 ± 2.50	5
	EPQ/R-P	12.75 ± 2.21	8
	EPQ/R-L	4.75 ± 0.95	5
Scale 6	QPF/R	63.25 ± 15.94	50
Scale 7	IP/R	91.00 ± 7.02	90
Scale 8	QD	17.25 ± 4.78	15
Scale 9	MOCQ/R	11.50 ± 2.64	10
Scale 10	STAI X-1/R	1.75 ± 0.50	4

STAI X-1 – State-Trait Anxiety Inventory; STAI X-2 – State-Trait Anxiety Inventory; EPQ/R – Eysenck Personality Questionnaire reduced form; EPQ/R-E – Introversion; EPQ/R-N – Emotional instability; EPQ/R-P – Social maladjustment; EPQ/R-L – Lie; QPF/R – Questionnaire Psychophysiological; IP/R – Inventory of Fears; QD – Questionnaire D; MOCQ/R – Maudsley Obsessional-Compulsive Questionnaire; STAI X-1/R – State-Trait Anxiety Inventory. The cut-off scores of the scales represent the dividing line between “illness” and “healthy”. Scores exceeding this value are associated with the presence of specific psychological problems; SD – standard deviation



**Figure 4.** Frequency and severity of the 3 main clusters of PTSD assessed by CAPS-DX. Intrusive recollection (intrusive memories, distressing dreams, sense of reliving the experience, distress and physiological reactivity), avoidance/numbing (avoidance of thoughts, feelings, activities, places and people associated with the trauma, inability to recall aspects of trauma, reduced interest, restricted range of affect and sense of a foreshortened future), and hyperarousal symptoms (sleep disturbances, irritability, anger, difficulty of concentrating, hypervigilance, exaggerated alarm response)



**Figure 3.** Psychological problems of individuals examined per symptom/subject and as percentage of the sample examined. Data were derived from the CBA 2.0 analysis

reaction of euphoria and optimism at the release, most victims exhibit symptoms of anxiety [20]. A Dutch study on 168 prisoners of war [21] refers strong anxiety in 94% of them in the first 4 weeks, which decreases in 2/3 of cases after the 2<sup>nd</sup> month. Other studies reported durable anxiety and sleep disorders, although their intensity tends to lower as a function of time and is accompanied by the occurrence of psychosomatic symptoms [15]. One study examining 381 hostages of the Persian Gulf War at 5 months from the release (many of them had been used as “human shield”) concluded, that half of the cases reported emotional instability, guilt and difficulty in making decisions [22].

If the kidnapping period is very long, relationship difficulties, resulting from the persistence of behaviour’s patterns learned during imprisonment, may be present [20]. The gradual readjustment to normal activities of daily life has a primary role in rehabilitation, because elements of depression, apathy and social withdrawal are very common at this stage. Sometimes suicidal behaviours were reported, mainly in victims that have suffered torture and violence during the period of captivity [23].

Many of the reactions of kidnapping victims correlated to the wide spectrum of post-traumatic disorders, such as PTSD, major depression, dissociative experiences, use/abuse of illicit substances, panic attacks, social phobias and generalised anxiety disorder [24]. A recent review on psychological disorders, which appear after a kidnapping [25], has classified 6 conditions: 1. stress disorders (usually PTSD), 2. depression disorders, 3. cognitive defect states, 4. psychotic states, 5. personality disorders, 6. somatoform disorders. PTSD represents the most frequent psychopathological consequence in these cases [14, 18, 25–28]. PTSD is characterised by reliving the traumatic event with deep feelings of fear, helplessness and horror. It can become chronic and has significant consequences on the well-being and capabilities of the individual. Their main symptoms include: intrusive recollection (flashbacks, distressing dreams, sense of reliving the experience, illusions, hallucinations, etc.), avoidance/numbing (efforts to avoid thoughts, feelings, activities or places associated with trauma, inability to recall important aspects of trauma, restricted range of affect, etc.), and hyperarousal (sleep disorders, exaggerated startle response, hypervigilance, etc.). As above indicated, studies on mental consequences of kidnapping due to maritime piracy acts are sparse in spite of the incidence of the phenomenon.

A main weakness of this work was the extremely limited size of the sample investigated. However, if we consider that in years 2011–2012 there were in total 20 Italians in the hands of pirates, we actually examined 20% of Italian victims of these criminal acts. It should be mentioned that it was extremely difficult to get the availability of the victims to

be examined. The captivity shocked them, and many victims preferred to avoid any contact that could re-evolve kidnapping.

Obviously, seafarers are not the only victims of maritime piracy, but they are the only exposed to long freedom deprivation, reclusion in precarious conditions, isolation and uncertainty. The development of significant psychological consequences is therefore predictable, but has not been measured through a comprehensive approach. In our study involving seafarers experiencing a long period of captivity, subjects referred anxiety symptoms indicating a condition characterised by apprehension, tension and fear in particular situations, or activities involving an extreme arousal. Severe difficulties, both in the individual and social domains and also environmental maladjustments were found as well. These aspects clearly entail the risk of more serious disturbances in the future [29], and we plan to investigate the time-course of psychological/psychopathological profile of our sample after 1 year from the analysis here reported.

In 2 of 4 subjects emotional instability and trait of anxiety were also found. This suggests the presence of more stable characteristics, usually associated with sleep and somatoform disorders. It is interesting to highlight that these aspects are also present in war prisoners [15, 21], but were much more evident in our sample. This is probably due to the fact that armed attacks represent events to which seafarers are unprepared. In 2 out of 4 subjects, depressive symptoms, less interest in previous activities and fatigue, together with cognitive distortions, abandonment beliefs, and pessimism were also noticeable. As people showing these symptoms are at risk for suicidal behaviour during the re-adaptation phase, this aspect should deserve particular attention [23]. The majority of the subjects showed a PTSD, with main symptoms as intrusive recollections, hyperarousal and avoidance. Victims reported sleep disorders, avoidant behaviours, difficulties of concentration, as disabling symptoms. This aspect is in agreement with the findings of a recent study which correlates PTSD symptoms of kidnapped subjects with intra-family problems [30]. PTSD has an impact not only on the direct victims of trauma, but also on the surrounding environment, and in particular on family members. This is confirmed by the studies showing that in veterans with PTSD relational disorders in the family context may occur [31]. Other studies emphasised that even family members might develop psychopathological problems such as depression, PTSD and alcohol abuse after the release [32, 33]. This suggests that an instability related to these events can emerge in the family. Psychopathological problems developed in the families of seafarers in relation to piracy acts are the topic of 1 ongoing study. To summarise, there is no doubt that traumatic experiences, such as those under discussion, could entail relevant psychopathological disorders in individuals and their families.

## CONCLUSIONS

Studies on kidnapping due to maritime piracy are few and apparently none has explored in detail psychological consequences of these criminal events. Our work demonstrates that the psychopathological effects emerging from the trauma of kidnapping by pirates are relevant and could entail severe disorders in individuals.

Seafarers are not the only victims of maritime piracy, but they are the only ones exposed to long freedom deprivation, reclusion in precarious conditions, isolation and uncertainty. Quality care interventions, aimed to develop paradigms for resilience training in seafarers, represent a priority. An international partnerships and collaboration among institutions, clinicians and seafarer organisations can contribute to evaluate the psychological condition of those workers, and to implement prevention and, if needed, rehabilitation programs.

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