

Violence in forensic psychiatric facilities. A risk management perspective

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SUMMARY

Violence against healthcare workers is a global phenomenon. Psychiatric settings are among the places at greatest risk of being a victim of aggression. Several strategies aimed at preventing violence in healthcare settings and implement protective measures have been proposed. Nevertheless, forensic psychiatric settings have been poorly investigated from the point of view of clinical risk management, especially in Italy. The recent process of deinstitutionalization of forensic psychiatric patients in Italy, with the replacement of former forensic psychiatric hospitals with small regional-based community structures (REMS), deserves particular attention in terms of clinical risk management. We propose in the following contribution a methodology that allows to measure the risk of violent behavior in different psychiatric forensic settings, from the point of view of clinical risk management. This includes a proposed adaptation of the Modified Overt Aggression Scale (MOAS) for the specific purpose. The use of such approach, including the calculation of a structure's "risk score" could allow comparisons between different facilities as well as the implementation of strategies aimed at minimizing the frequency of violent acts, as well as activating the most suitable measures to prevent them.

Received: December 12, 2020
Accepted: January 4, 2021

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Conflict of interest

The Authors declare no conflict of interest

Key words: violence prevention, REMS; MOAS, clinical risk management, forensic psychiatry

Violence in healthcare settings

Violence perpetrated against healthcare workers, often by patients, their relatives or less often by visitors, is a ubiquitous phenomenon and one that has increased in frequency over the last few years. The American National Institute of Occupational Safety and Health (NIOSH) defines violence in the workplace as "the act or threat of violence, ranging from verbal abuse to physical assaults directed toward persons at work or on duty"¹.

Acts of violence in healthcare setting are rarely fatal, most often they consist of physical or verbal aggression or threats. The rate of incidents involving hospital workers is equal to 9.3 per 10.000².

A recent systematic review and meta-analysis of the literature has shown that of 333,000 participants included in the review, 61.9% reported experiencing at least one violent episode in a health care setting, 42.5% of these were not physical and 24.4% were physical. Verbal abuse was the most common form of non-physical violence (57,6%), followed by threats (33.2%) and sexual assault (12.4%)³.

According to the World Health Organisation, violence in healthcare settings is a global phenomenon. Between approximately 8% and 38% of healthcare workers are subjected to physical violence over the course of their career and the country with the largest number of violent episodes is India⁴. As such, it has been necessary to try to prevent violence in health-

How to cite this article: Ferorelli D, Mandarelli G, Zotti F, et al. Violence in forensic psychiatric facilities. A risk management perspective. Journal of Psychopathology 2021;27:40-50. <https://doi.org/10.36148/2284-0249-419>

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care settings and implement protective measures with the objective of creating a safer workplace, increasing awareness of the need for political action in this area and facilitating the exposure and reporting of violence in the workplace⁵.

The situation in Italy is not different to that in the rest of the world, a survey conducted in 2018 found that of 1280 doctors surveyed around 65% had been the victim of workplace violence. This was even more prevalent in the regions of the south of Italy (72.1%). Of those interviewed, 66.2% reported that they had suffered verbal aggression and 33.8% physical aggression. Looking at the location of these incidents more closely, it was found that 34.1% occurred in psychiatric facilities and 20.3% in emergency rooms⁶.

This evidence is consistent with that of Magnavita et al. who through medical surveillance of workers exposed to risk in 2005-2011 found that on average, every year one healthcare worker in ten was physically abused and one in five suffered verbal abuse. In this case also, the locations of increased risk were found to be psychiatry (11.1-59.6%) and accident and emergency (3.8-20.5%)⁷.

A further survey of nursing staff was conducted in Italy in 2017⁸. 61.1% of the sample interviewed declared that they had been attacked or threatened by service users and that trend is on the increase compared to a similar survey in 2013. 48.1% of the nurses reported having experienced verbal aggression and 6.4% physical aggression. 45.5% said that they had experienced both physical and verbal aggression. Another national survey conducted with more than 15,000 nurses supported this, bringing Italian healthcare workers in line with those in other countries in this respect⁹.

Legislative framework

The increase in violence in healthcare settings has prompted a change in the law and for the Italian Ministry of Health to give more attention given to this matter. Consequently, in 2007, it issued a recommendation for the prevention of acts of violence towards healthcare workers¹⁰. In so doing, such events were accorded the status of *watch list events* (i.e. “a patient safety event that results in death, permanent harm, or severe, temporary harm”)¹¹.

The objective of this recommendation is to prevent acts of violence against healthcare workers through the implementation of measures that allow for the elimination or reduction of conditions of risk and allows for training of the workforce in evaluation and management of such events when they occur. It should be the Health Service to identify risk factors to its personnel and to put in place the most effective strategies¹².

In the last ministerial report of *watchlist events*, violent acts against healthcare workers made up 8.6% of the

total number of events reported. However, 50% of the doctors interviewed as part of the 2018 survey stated that they were not aware that these aggressions constituted *watchlist events* which should be reported not only to the Director of the local healthcare trust, but also through the SIMES system (a monitoring system for reporting *watchlist events*) for which an investigation of the event is obligatory¹². This suggests that the true number of violent events could be significantly higher than indicated by the ministerial figures, which has also emerged as part of a prior investigation¹³.

In Italy, from a legislative perspective, presidential decree number 547/1955 is the first step towards adopting workplace safety measures and making them obligatory, whereas the current point of reference for health and safety measures in the workplace is legal Act number 81/2008 which represents the legislative elaboration and evolution extended to all occupational sectors and every type of risk¹⁴.

In the light of the increase of violent episodes in healthcare settings and the growing public awareness of it, two recent laws have been enacted which are particularly relevant for the prevention of the risk of violence in healthcare settings. Law number 113/2020 sets out the “*Arrangements with regard to the safety of those working in the medical professions and community healthcare*” and it establishes severe punishments for aggression towards healthcare professionals which can mean up to a 16 year prison sentence and fines of up to € 5,000 for verbal threats. Moreover, it expects the institution to establish working procedures with police support to guarantee timely intervention. The 113/2020 law also provides for the National Centre for the Safety of those working in the Medical Professions and Community Healthcare¹⁵.

Law number 24/2017 sets out the “*Arrangements with regard to safety of care and of the person being cared for, and also the professional responsibility of those who exercise healthcare professions*” and has brought about pertinent changes in the conception of safety of care both in terms of its culture and application, ring-fencing it as a “constitutive part of the right to health”¹⁶. The management of clinical risk, therefore, means a crucial coming together in healthcare settings of actions aimed at identifying risks and formulating clinical/administrative countermeasures as well as planning surveillance mechanisms, prevention and management of errors. Essentially, with law number 24/2017 all healthcare workers are expected to contribute to activities regarding the prevention and the management of risk that are connected to providing a healthcare service. Moreover, they should be able to intervene in an active or proactive manner in the event of an adverse event. Given that violence in healthcare settings is a *watchlist*

event and one of the most frequent negative events, it would seem logical that healthcare organisations are required to provide the means for containment of these events for all the reasons detailed above.

Violence in mental healthcare settings

The identification of risk factors for workplace violence according to setting has brought to light the fact that level of risk varies according to the type of setting and the characteristics of the patients treated there; in fact the risk of violence is higher in mental health settings, in accident and emergency, in paediatrics and in surgery and in particular during night shifts¹⁷.

According to the United States Justice Department, the second highest annual average of episodes of workplace violence is in mental healthcare settings. The total rate for episodes of verbal aggression was 0.60 and for physical aggression 0.19¹⁸.

Saeki et al., whose data come instead from Japan, confirm that the possibility of a doctor meeting with a WRAV (work-related aggression and violence) is once every 3.5 years which is about 10 times over the course of a career. The highest incidence of WRAV is found in those who work in mental health care facilities, especially in hospital¹⁹.

Nurses are the first and moreover the most frequent target for aggression by psychiatric patients²⁰. Ridenour et al.¹⁸ found that almost 20% of psychiatric nurses had suffered physical aggression, 43% had been frightened by physical aggression and 55% were verbally assaulted at least once during the equivalent of a single work week.

There is a limited number of studies that examine the frequency and characteristics of violent behaviours experienced by workers in psychiatric care settings²¹⁻²². Most of the studies have focussed on hospitals (SPDC, psychiatric intensive care units), moreover, there are few studies of violent episodes taking place locally, in community healthcare settings²³⁻²⁴. It is worth noting the work of Magnavita & Heponiemi²⁵ who looked at all the healthcare workers employed in the Civitavecchia area (hospital and community healthcare) over a 12-month period and found that 9.2% of healthcare workers experienced physical aggression, 19.6% verbal aggression and 5.5% reported having been stalked. The author had conducted similar studies at different times (2005, 2007, 2009) and concluded from a comparison of the data that the percentages showed a stable trend. Almost half of the violent episodes took place in two settings: psychiatry and emergency. In particular, the risk of physical violence for those that work in mental health services appeared 22 times higher than the average.

Among the few Italian contributions to the field is the research of Catanesi et al.¹³ which involved a survey sent

to all Italian psychiatrists, from the responses which numbered more than 1200, it emerged that experiencing verbal aggression over a lifetime was very common (90%) and the percentage of psychiatrists who reported physical aggression (64%) was also noteworthy. Moreover, working in the psychiatric intensive care unit was among the main risk factors.

Essentially, the literature suggests that working in a psychiatric setting is a risk factor for victimisation^{19,26-28}. The evidence for this seems to derive from a convergence of various complex systems, for example, individuals may become violent or aggressive as a direct consequence of psychotic symptoms and/or the abuse of psychotropic substances able to alter the perception of reality, state of consciousness or behaviour²⁹. Aggressive or violent behaviour can occur as a reaction to restrictions and requirements of the hospital environment and can become an expression of anger, retaliation or desire to assert one's status³⁰. There is evidence to suggest that violent behaviour comes more readily to those who have behaved violently in the past²¹.

Taking all this into consideration, it is important to ask oneself what the effect of chronic exposure to a protracted climate of apprehension and fear is upon psychiatrists, nurses and healthcare workers. How prepared do psychiatrists and other staff feel to deal with violence in the workplace? How much does violence, stress and fear of violence affect the health of healthcare workers or the quality of the service? Catanesi et al.'s study²⁶ reported that almost all the Italian psychiatrists who participated felt that they were professionally underprepared in this area and argued strongly for more training (97%). This is even more important today given the fact that community healthcare workers are forced to work with criminal psychiatric patients due to the closure of secure hospitals.

Violence perpetrated against workers in forensic psychiatry units

Forensic psychiatry units represent a very particular type of workplace context. The international literature details research on similar target populations in hospital departments³¹, in high secure forensic psychiatry settings³² or secure environments³³ which are far from the community-based model which is used in Italy. A recent work by Kelly³¹ explored, for example, a group of workers (n = 348) employed caring for patients in a forensic psychiatry hospital. These workers reported that verbal conflict with patients was "very common" (99%) and they described as "high" the incidence of experiencing physical aggression in the last twelve months (70%)³¹. In Italy, there has been a process of deinstitutionalization of the forensic psychiatry system which has in-

volved the Department of Mental Health taking responsibility for the treatment of psychiatric patients who have committed crimes and are considered a danger to society. This has meant the closure of the old psychiatric secure units and the creation of new community structures present over the entire country. These are known as Residences for the Execution of Security Measures (REMS)³⁴.

Residences for the Execution of Security Measures (REMS)

REMS are residential psychiatric detention centres. Judicial authorities send patients who suffer from mental disorders to these centres, the patients have usually committed violent crime and have been judged to be a *danger to society*. Moreover, an expert has usually established that they are likely to reoffend. In order for a patient to be admitted to a REMS, the level of *danger to society* needs to be considerable, where that level is lower the Judge may decide upon less restrictive measures which do not involve detention. This could mean probation with conditions set for rehabilitation (for example, attending a residential therapeutic community). Inside the Italian REMS, the patients are treated using a model of individualised rehabilitative therapeutic programmes which are defined by the psychiatric team in the patient's residential region (Mental Health Centre – Centro di salute mentale, CSM), under the auspices of the Department of Mental Health (Dipartimento di salute mentale, DSM)³⁵. Inside the REMS, security is wholly managed by the mental health teams, according to Italian Law (L. 17.02.12 n.9, art. 3-ter) "Management of the psychiatric structure is delegated to the Psychiatrist Medical Director"³⁵. There are no prison officers present inside the REMS, there are, however, security guards who by law can – but do not have to – become involved exclusively in "activities involving perimeter security and external surveillance"³⁵.

The REMS were conceived to be located regionally and each one of them holds a maximum of 20 patients. Currently, there are 31 REMS in Italy. A recent observational investigation by Catanesi et al. of all the REMS³⁶ described the clinical, criminological and treatment characteristics of the patient population. For the most part, cases involve patients with schizophrenia spectrum disorders (60.7%) who are already in the care of the mental health services (82.2%) have long clinical histories (11.5 years) and often a difficult course of disease characterised by hospital admissions (71.1%, 4 or more admissions 13.3%) and compulsory health treatment (54.8% and more than 4 compulsory hospitalisations 7.9%). In the general population of 730 patients, personality disorder was diagnosed in 32.3%, that is

almost one patient in three, associated disorders relating to substance abuse are seen in 27.5%, that is one in four patients. It is possible to say therefore, that the REMS have, in fact, absorbed the same target population of patients that were at one time sent to secure hospitals, that being patients with multiple problems in which along with a long term psychotic disturbance, personality disorder and substance abuse disorder is often associated. This means, difficult patients with a long history of treatment failure who have committed violent crimes (one in four has committed homicide or attempted homicide and one in two violent acts against others) and for which an expert has estimated that it is probable that the patient will reoffend.

Given the evidence detailed herein, it is clear that the characteristics of the patients admitted in the REMS mean significant consideration needs to be given to the correct management of risk and security due to the fact that in such structures it is necessary to guarantee high standards in the clinical management of patients as well as the security of healthcare workers³⁶.

REMS are defined as places requiring highly complex management. The appropriate management of the patients, considering the specific characteristics of the healthcare personal who work with them, should proceed recognising the behavioural risk factors associated with each one of the psychiatric patients inside the structure. This is necessary in order to manage the patients appropriately and to guarantee both security and the specific care required³⁷.

In total, the 31 REMS in Italy can guarantee about 612 beds. This limited number of places has meant that a waiting list has been drawn up by the Ministry of Justice which does not take into consideration the evaluation of clinical risk.

From a legislative perspective, the most relevant Law is number 81/2014, which sets out "Urgent arrangements regarding the replacement of secure hospitals" and which signalled the definitive replacement of secure hospitals; structures which had the highest level of security. Regional legislative autonomy over the organisational structure of the REMS in each region has resulted in regional differences both in the number of patients admitted (from a minimum of 2 in the REMS in Friuli, to the pluri-modal structure in Castiglione delle Stiviere which has 8 modules with 20 patients each) and the level of security guaranteed. Some are classified as structures with a medium level of security and some with a lower level of security^{38,39}.

In 2012, through a legislative decree, the Ministry of Health, together with the Ministry of Justice, identified the minimum structural, technological and organisational requirements of the REMS. The full details can be found in the text, however, here we highlight that it

refers to ‘minimum requirements’ that each local health authority is duty bound to adopt in order to allow “that the health and rehabilitation objectives are reached by those who are placed in their care, through the adoption of therapeutic rehabilitation programmes and social inclusion practices proven to be efficacious”. It is also specifically required that “in consideration of significantly variable psychopathological profiles [omission] implementation is adequately diversified also in structural, organisational, security and external surveillance terms as well as in levels of protection, with the ability to respond to diverse psychopathological characteristics and their evolution”.

Setting aside, for now, our views on the role potentially played by the structures themselves, here we limit ourselves to that which concerns the personnel that should make up the multi-professional team of the setting. According to the legislation cited, the team should consist of at least 2 full-time psychiatrists available day and night and during public holidays, 1 psychologist, 12 nurses, 6 community healthcare workers, 1 educator or a mental health professional. There are significant differences in this regard between each individual region. A regional comparison between such different structural and organisational norms would naturally provide precise indications about the preventative efficacy of the choices made.

The institution of the REMS has meant that the National Health Service has taken full responsibility for psychiatric patients who have committed criminal acts and are dangerous to society, introducing, therefore a further level of complexity into the course of their care. The judgement of being a danger to society is the responsibility of the Judge, but the Health Service and particularly Psychiatric Services are responsible not only for the strictly health related aspects – care and rehabilitation of the perpetrator of the crime, but also for protection of society in general (prevention of reoffending). All in a healthcare management setting under the auspices of the Department for Mental Health.

Risk score for violent behaviour: instrument and methodology

During the transfer of patients who are mentally ill and a danger to society from the justice to the health system, it is important to identify and establish in a preventive and proactive way the level of security necessary for each patient. This is important to guarantee good clinical outcomes and adequate levels of protection for healthcare workers. With the introduction of the legislation detailed above, the function of risk management as well as being dictated by clinical logic has acquired a form of legislative obligation. In fact, all healthcare workers are

expected to contribute to prevention activities and the management of risk connected to the delivery of healthcare and are duty bound to intervene in any process which could lead to an adverse event.

Violence perpetrated against healthcare workers is, moreover, a *watchlist* event; an adverse event of particular gravity, which it is an obligation to report. As has been said before, in the psychiatric setting, aggression is one of the most frequent adverse event. It is therefore necessary for healthcare organisations have with instruments to manage aggression towards healthcare workers. This offers a new perspective on the evaluation of risk of violence to healthcare workers.

The first step, in our opinion, is to identify an instrument which will be useful in quantifying a risk score for violence against healthcare workers in psychiatric settings and this is a prerequisite to prevention activities. The use of a proactive instrument in the management of clinical risk would represent a departure point also for future statistical elaborations which are necessary to evaluate how much the factors which are at the fundamental base of care (the characteristics of the population in care, type, composition and number of healthcare workers, logistical and organisational elements) can influence risk score and therefore different levels of security for healthcare workers.

The risk score (R) is defined by this formula:

$$R = P \times I \text{ (Risk score = Probability} \times \text{Impact)}$$

Applied to the problem of violence experienced by healthcare workers in psychiatric settings, P indicates probability, that is the frequency with which a violent event occurs, while I indicates the extent of the damage, that is the consequences of the events.

Adhering to the recent scientific evolution in terms of security and management of clinical risk, in Italy the obligation of evaluation of workplace risk has been inserted into the Text on Health and Security at Work (Law n. 81/2008). The directions to be followed supplied by the specific rule of law on the evaluation of risk are contained in the risk evaluation document for workers. In this document the scale of probability (P) refers to the existence of a noted correlation between the type of activity under consideration and/or the negative effects which could arise from any damage.

The scale of probability (P) that results from this, classifies the events from “improbable” to “highly probable” on a scale of 4 values in relation to the noted risk of the occurrence of the event in question, as is succinctly noted in this table from the Institute for Prevention and Safety at work (Tab. I).

The scale for extent of impact (I) in the risk evaluation document refers to the consequences (in terms of injury

TABLE I

P = 1: improbable	The noted risk could cause damage in conjunction with other unlikely events There have not been other noted episodes Damage resulting from this would cause disbelief
P = 2: unlikely	The noted risk could cause damage only in an unfortunate circumstances Previous episodes are very rare Damage resulting would cause great surprise
P = 3: likely	The noted risk could cause damage, even if not automatically and directly Damage has followed some episodes of this risk Damage resulting from this would cause moderate surprise
P = 4: Highly probable	There are correlations between the noted risk and damage Damage has resulted from this same risk in the same business or similar businesses or in similar working environments Resulting damage would not cause any surprise

TABLE II

I = 1: light	Injury or episode of acute exposure with a rapidly reversible effect Chronic exposure with rapidly reversible effects
I = 2: medium	Injury or episode of acute exposure with reversible effects Chronic exposure with reversible effects
I = 3: serious	Injury or episode of acute exposure with partial invalidity Chronic exposure with irreversible effects and/or partial invalidity
I = 4: very serious	Injury or episode of acute exposure with lethal effects or total invalidity Chronic exposure with lethal effects and/or total invalidity

or exposure) produced by the event in question and to their reversibility whether total or partial. The classification, also on a scale of 4 levels, is from “light” (injury or episode with rapidly reversible effects) to “very serious” (injury or episode with effects which are either lethal or lead to serious invalidity), as in the following Table II.

The evaluation of the level of risk (R) brings with it the adoption of preventative and protective measures in proportion to the risk value, according to this Table III.

In order to apply the concepts listed above in residential structures for the mentally ill who have also committed crimes, it is necessary to understand not only the frequency (P) of the violent episodes that occur in these settings, but also the consequences, both physical and mental that result from them. Currently, we do not have reliable data, given that the data presented are generic, re-

ferring either i) to exclusively clinical psychiatric contexts where the population in question is clinically different, or in a different clinical phase; or ii) to forensic settings but with organisation, security levels and more which are not comparable. Neither is it possible to use data for accidents registered with The Italian National Institute for Accidents at Work because it is well known that the number of reports of violent incidents at work is decidedly lower than the episodes that occur daily in psychiatric settings. This is because Italian psychiatrists manage violence as part of the therapeutic relationship²⁶.

Therefore, we need, data which shows the true number of episodes of violent events that healthcare workers in the REMS deal with daily.

To collect such data, an instrument is needed which has as part of its internal structure characteristics that coin-

TABLE III

R > 8	Corrective actions without delay	Priority 1
R = 4-7	Urgent corrective actions to be planned	Priority 2
R = 2-3	Corrective actions and/or improvement measures to be planned for the short/medium term	Priority 3
R = 1	Improvement measures to be planned no immediate intervention required	Priority 4

cide both with the definition of frequency and also the severity of events. One of these, in our opinion, is the *Modified Overt Aggression Scale* (MOAS) ⁴⁰.

We consider the MOAS to be suitable because it is an instrument which is very simple to use and which is recognised both internationally and in Italy ⁴¹, it is already used in psychiatry for the evaluation of episodes of aggression in the hospital context ⁴². The MOAS registers – on a scale – both the episodes of aggression (physical and verbal) and their severity ⁴¹. Therefore, it is able to determine both the frequency and severity of violent behaviours.

The scale has four sections (verbal aggression, physical aggression towards objects, physical auto aggression and physical hetero aggression) each of these contains descriptions of actions which allow, in relation to the seriousness of the event, the scoring of points from 0-4 (where 0 means no aggression and 4 is a serious aggressive act). A coefficient of increasing value (1x, 2x, 3x, 4x) is applied to each raw score per category in each of the four sections, with verbal aggression having the lowest score and physical aggression the maximum. As an example, the threat of violence towards others is value 3 of section 1 (raw score 3 x coef.1 = 3), physical aggression towards others that produces serious injuries is value 4 of section 4 (raw score 4 x coef.4 = 16).

The four categories of aggression (verbal, towards objects, auto- and hetero-directed) express therefore, considered overall, a weighted score between 0 and 40 which indicates the “seriousness” of the behaviour. However, regarding this, we believe that some methodological adjustments are necessary.

A superficial reading could take the maximum score to be an indication of maximum severity which is true, but not sufficiently fine-grained from the perspective of risk management. A maximum score of 40 is only reached, in fact, by calculating the sum of the 4 categories (verbal violence max 4 points; violence towards objects max 8 points, violence against oneself max 12 points and violence against others max 16 points). This would be a very exceptional event. Physical aggression against a healthcare worker which results in serious injury is certainly very significant but obtains a score of only 16.

From the perspective of safety of personnel, it is also evident that showing aggression towards oneself or towards objects is one case of affairs, showing aggression towards other people is quite another. From our point of view, even if we accept that all of these behaviours are expressions of aggression, some of these are certainly more important than others.

Moreover, an objectively less serious episode, like the threat of violent action towards a healthcare worker, is evaluated to have a relatively low score (3 or 4), but if said behaviour is repeated systematically towards a

single worker, it can have profound consequences for their mental health.

We do not believe that the raw MOAS score, therefore, can be used as a definitive indicator with the objective of managing clinical risk. It only becomes relevant when analysed by each single category (verbal, against objects, against oneself and against other people) and above all this needs to be evaluated in relation to the episode frequency.

This leads on to our second point. On hospital wards, the MOAS is usually used to register violent behaviour in single patients. This is also done with the aim of assessing how a patient's behaviour responds to the therapy given and how well the patient adapts to the new context. In this way, it is possible to obtain signs of tendency to aggressive behaviour for each patient. This has helped us to understand, for example, that more aggression and therefore more risk is observable in the first days of hospitalisation, with a tendency to reduce or normalise over the course of a week ⁴¹.

The REMS, however, are typically a context of long-term care, where patients are resident for periods which range from many months to more than a year. In Italy, the clinical management of any acute phases of illness are typically delegated to the Psychiatric Intensive Care Units within which is it possible to initiate compulsory health treatment. In the REMS, violent behaviour in patients, which can become acute without warning, is for the most part chronic/habitual.

However, longitudinal evaluations are necessary, and we believe that for this particular care setting the MOAS should be used on a weekly basis. On the other hand, in the original paper, the author of the MOAS scale, Kay ⁴⁰ evaluated patient behaviour with a retrospective survey of five consecutive days, there are number of different studies that support the use of the MOAS in this way ^{42,43}.

We suggest that data collected in the REMS using the MOAS proceeds as described here. The MOAS points related to each single episode should be noted for each patient on a weekly basis, see the example below (Tab. IV).

The weekly total, 16 in this example, results in a daily value of 2.28 (16:7 days) only for verbal aggression. This calculation should be made for each of the four categories of the MOAS (verbal, against objects, against oneself and against other people). The following examples relate to the three forms of physical aggression. The patient manifested two episodes of physical aggression without serious consequences (raw weekly score 12, daily 1.71), no episodes of self-harm (0 points), damage to objects on two occasions (raw weekly score 6, daily 0.85) and these over and above the number of verbal aggressions stated earlier (Tabb. V-VII).

Making the calculation in this way will give a result which is a comprehensive assessment of the level of aggres-

TABLE IV

Verbal aggression - week 1	Score	Weekly frequency	Raw score	Coeff.	Total
Screaming with rage, mild cursing or personal insults	1	5	5	1	5
Cursing with violence, serious insults with the aim of provoking anger	2	2	4	1	4
Threatens violent actions with rage against other people or against himself	3	1	3	1	3
Repeatedly threatens violent actions against other people or against himself	4	1	4	1	4
Tot = 16					

sion in the patient and indirectly, therefore, the risk that the healthcare workers could face while working with them. If this is repeated for a period of 3 months (therefore a total of 12 MOAS per patient) it could be said to be reasonably indicative both of the risk score for each patient and the change over time. Consequently, this could also give an indication of susceptibility to treatment. The objective is, of course, to bring this number as close to 0 as possible (Tab. VIII).

The average of the sum of the scores for all the patients in a certain setting will be indicative of the collective risk for the entire structure as it contains those specific patients.

As stated, however, not all aggressive behaviour is of equal risk to the safety of personnel.

Using the MOAS as suggested would provide the clinical risk expert with enough data to obtain distinct values of frequency (P) for verbal aggression (certainly more common) and physical aggression (less common). The evaluation of the frequency of these behaviours would make it easier to correlate them with the consequences of exposure to this risk. These will certainly depend not only on the seriousness of the conduct but also on its repetition over time.

Limiting the evaluation of these consequences only to those that result in physical compromise, which are im-

TABLE V

Aggression towards objects - week 1	Score	Weekly frequency	Raw score	Coeff.	Total
Slams doors with rage, tears clothes, urinates on the floor	1	0	0	2	0
Throws objects to the floor kicks the furniture, ruins the walls	2	0	0	2	0
Breaks objects, breaks the windows	3	2	6	2	12
Starts fires, hurls objects violently	4	0	0	2	0
Tot = 12					

TABLE VI

Auto aggression - week 1	Score	Weekly frequency	Raw score	Coeff.	Total
Pinches themselves or pulls at their skin, pulls their hair, hits themselves without causing injury	1	0	0	3	0
Hits their head against the wall or punches the wall, throws themselves to the ground	2	0	0	3	0
Gives themselves minor cuts, burns, grazes or bruises	3	0	0	3	0
Harms themselves seriously or commits suicide	4	0	0	3	0
Tot = 0					

TABLE VII

Aggression towards others – week 1	Score	Weekly frequency	Raw score	Coeff.	Total
Pushes people, grabs their clothes	1	1	1	4	4
Pinches, kicks, scratches, pulls hair (without causing injury)	2	2	4	4	16
Attacks others causing light injury (e.g. contusions, distortions or bruises)	3	0	0	4	0
Attacks others causing serious injury (e.g fractures, breaking teeth, deep wounds, loss of consciousness etc.)	4	0	0	4	0
Tot = 20					

TABLE VIII

Category – week 1	MOAS average daily score
Verbal aggression	2.28
Aggression toward objects	1.71
Auto-aggression	0
Aggression towards others	2.85
Total	6.84

portant but not the only consequences, is not possible. It is also necessary to shed light on the psychological effects on healthcare workers themselves. Once again, to achieve this it will not be enough to use the data regarding the *accidents* registered with The Italian National Institute for Accidents at Work. For the reasons stated above, a clinical evaluation of all the workers is necessary, which can pick up levels of psychological suffering measurable using the DSM-5 criteria and those below the surface which present a risk in the medium term. In order to do this, we recommend using simple instruments such as the Beck Depression Inventory (BDI) ⁴⁴, State-Trait Anxiety Inventory (STAI) ⁴⁵ e General Health Questionnaire (GHQ) ⁴⁶.

Having obtained these results, we will be able to make a substantial scientific contribution to the techniques used to predict risk in Clinical Risk Management, contributing to the creation of a risk score which is reliable in the psychiatric-judicial sphere.

Systematic registration of all of the episodes of aggression by patients in a REMS within a predetermined period of three months, allows for the calculation of a risk score, both of the single patients (useful for the choice of containment measures) and in a general sense to determine the structure's risk level in order to fully understand the measures necessary to protect the people who work there.

From safety to wellbeing

Safeguarding the mental and physical health of those who work inside REMS does not end by addressing the problem of workplace violence, nor by the simple calculation of a risk score, but it does offer a starting point. Without studies that can define seriousness and frequency of adverse events, not only in REMS, but also in community structures that take patients who have committed crimes, it is not possible to put preventative measures in place that can be said to be considered and proportionate.

We know, however, that other factors (type of population, structural and environmental conditions, organisation models, therapeutic and rehabilitation protocols) are potentially able to condition the patients' behaviours and they themselves can become risk factors for violent acts ⁴². These also, therefore, should be the object of further study. As mentioned before, however, the objective is not only to reduce the frequency of violent acts to the minimum, activating the most suitable measures to prevent them, but also to return the healthcare staff who work in these settings to a state of wellbeing ⁴⁷.

Working in a climate of fear and worry, not being sure that all of the necessary security measures are in place, not having delineated procedures for the management of violence all represent risk factors and at the same time sources of stress. We must not undervalue the effect that these stressors may have on workers. This is the same for those that are victims of violent episodes or single traumatic incidents and those that live day after day with the fear of becoming a victim (chronic stress), or even those who fear being called to testify to violent acts committed by a patient or for that which a patient could have done after leaving the REMS ⁴⁸.

A perception of safety does not arise only from low values on the risk score. The subjective conviction that the context is organised and protective, as much as possible, and that a worker would receive feedback and acknowledgement in the advent of an adverse event

also helps to increase the perception of safety. In the management of clinical risk, the levels of safety can be implemented in a continuously monitored *virtuous cycle* of identification, evaluation and dealing with risk. This is important because it is not the reporting of risk that improves safety, but the response to it that brings change^{49,50}.

This is even more true in relation to how much psychiatrists and staff feel prepared to deal with violence in the workplace. Indeed, the subject of training is bound up definitively with organization and structure. In the investigation by Catanesi et al.²⁶ a few years ago almost all of the Italian psychiatrist who participated in the study (97%) reported that there was insufficient training in this area. The psychiatrists asked forcefully for training strategies. We imagine that this is even more pertinent

today, as community mental health teams have been forced to deal with criminal patients since the closure of secure hospitals.

Without data, it is hard to develop effective preventative measures, unsound to think of reducing the risks, difficult to inform and train workers and therefore create good clinical practices and reliable guidelines.

In REMS, worker safety must be based on an analytical and systematic collection of empirical data.

This need also derives from the absence of historical data and strictly comparable forensic psychiatric systems on an international level.

We are hopeful that soon we will be able to provide the first results of our research in the field, and also be able to offer a working protocol.

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