International Journal of Mental Health Systems

RESEARCH

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Italian Evaluation and Excellence in REMS (ITAL-EE-REMS): appropriate placement of forensic patients in REMS forensic facilities

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Abstract

Background We set out to assess the appropriateness of current placement of mentally disordered offenders allocated by the courts in Italy to REMS or to forensic community residences. We hypothesised that as in other countries, the match between a standardised assessment and the decision of the court would be imperfect.

Methods The DUNDRUM Toolkit was translated into Italian. The translation had good psychometric properties. In order to compare the current level of therapeutic security with a calculated safest current placement, we compared the DUNDRUM-1 triage security assessment of need for therapeutic security prior to treatment, with evidence for progress made in treatment (DUNDRUM-3) and forensic recovery (DUNDRUM-4). The more conservative of these two would be taken as the safe current level of need for therapeutic security.

Results The Italian translation of the DUNDRUM Toolkit had good internal consistency and mean scores had a Reliable Change Index less than one unit. 3.7% of those in REMS (medium security) were assessed as needing high security and 38% were ready to move to a less secure place. In low secure places, 56% were assessed as needing a higher level of therapeutic security and 6% could have moved to open non-secure places.

Conclusions The Italian translation of the DUNDRUM Toolkit allows an assessment of the current working of the model of care for forensic psychiatry following the reforms of 2015. Most patients are safely placed. A small but important proportion needed high secure places that are not currently available. (3.7% of 604 nationally, 95% Confidence Interval 1.2% to 8.4%, 7 to 50). A greater use of such measures would enable better health gains and safer outcomes.

Trial registration ClinicalTrials.gov ID: NCT06018298 Unique Protocol ID: ITAL-EE-REMS.

Keywords Italy, Reform, Forensic Psychiatry, Mental health, Therapeutic security, Model of care, DUNDRUM

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Background

Italy has in recent years completely reorganised the delivery of forensic psychiatric care in secure hospitals and the community. The six large secure forensic hospitals (OPGs) provided by the Department of Justice have been closed. Each of the 20 regions in Italy has opened at least one residence for the execution of security measures (REMS) limited to no more than 20 beds each, provided directly or indirectly by regional departments of public health while also developing stepdown community residences (CRPs) [2, 4, 5]. The REMS are provided broadly in keeping with medium secure standards of therapeutic security [26] while forensic community residences are variable but generally correspond to low secure provision.

Courts and psychiatrists have found themselves having to deal with the process of giving expert evidence and making judgments regarding social dangerousness when a mentally disordered offender appears before the court [3]. The problem then arises of deciding whether to send such a person for treatment to a REMS (broadly equivalent to medium security in other countries), to a low secure forensic community residence or to reside at home or in some other other, non-secure setting. It is important to respect the rights of the mentally disordered offender by detaining them in the least restrictive setting compatible with safety. It is necessary also for the protection of the public and for the safe working environment of care staff and clinicians that mentally disordered offenders should not represent a level of dangerousness and risk that exceeds the capacity of the centre to which they are sent by the court. There is also some evidence that allocating a patient to a lower level of security than is safe may lead to failure to complete treatment successfully, mainly due to breaches of therapeutic security with disruptive behaviour [23].

In other jurisdictions models of care for forensic psychiatry have been tested and can be shown broadly to allocate forensic patients to the correct level of care required in Ireland for a forensic hospital using the DUNDRUM Toolkit as a guide [14, 15] or from a remand prison to a range of levels of therapeutic security [15, 36] in an English medium secure unit [16] or an English high secure hospital [43] and in other countries [1, 19, 22, 25]. The value of correctly allocating to an appropriate level of therapeutic security arises from the possibility that treatment in an inappropriately low level of therapeutic security may result in failure to complete treatment [23] and may arise from heuristic bias in the absence of a structured professional judgement approach [31]. Allocating a patient with a history of very dangerous behaviour (serios violence) to a low level of therapeutic security may endanger other patients, staff and the patient themselves.

In other jurisdictions, such needs assessment work for 'legacy' forensic mental healthcare systems has often been carried out with a view to ascertaining the need for reform and planning that reform [6, 21, 35, 37, 40, 41]. More recently there has been a move away from expert panel consensus assessments to the use of structured professional judgement instruments to support such service evaluation [6, 32, 34, 38]. A further progression in this method has been the combination of static measures of need for therapeutic security (DUNDRUM-1) and dynamic measures of progress in need for therapeutic security (DUNDRUM-3 therapeutic programme completion and DUNDRUM-4 forensic recovery) to provide service-wide estimates of the extent to which current placements match current needs [1, 10, 12]. It has been shown that placing a forensic patient in a setting of higher therapeutic security than they need may delay treatment responses, delay recovery and lead to prolonged lengths of stay [8, 12, 39, 43] while placing a patient in a setting less therapeutically secure than needed may lead to failure to complete treatment with shortened lengths of stay [23] and greater risk of disruptive behaviour, restraint and seclusion [24].

Objectives

We set out to assess the appropriateness of current placement of mentally disordered offenders allocated by the courts in Italy to REMS or to forensic community residences. We hypothesised that as in other countries, the match between a standardised assessment and the decision of the court would be imperfect.

Methods

Study design

This is a cross-sectional survey using criterion measures to compare placement at current level of therapeutic security with assessed need for therapeutic security, at the time of admission and currently. The research was approved by the Ethics Committee of the University Hospital of Bari (N. 66510/AA. GG of 09.16.2020).Signed written consent was obtained from all participants.

Setting

At the time of the research between November 2020 and May 2021, there were 31 REMSs active throughout Italy, providing medium secure care and treatment for 604 offenders were detained who had been found not guilty by reason of insanity and made subject to a definitive or provisional psychiatric security detention measure. In addition to these offenders, there was an unspecified number but estimated to be lower than the previous one, with non-custodial psychiatric security measures placed in community residences. Some Italian regions, such as

Puglia, had at the time identified specifically forensic community residences. In other regions the community residences accepted both forensic and non-forensic patients.

Participants

The invitation to participate in this research project was formally addressed to all Italian REMS and forensic psychiatry. Not all REMSs responded to the request and so the selection criteria used for enrolling patients were (i) geographical: presence in the regions of the north, centre, south and islands, therefore patients from Lombardy, Piedmont, Veneto, from the north; Lazio, Tuscany, from the centre; Basilicata, Calabria, Campania, Puglia from the south; Sicily, for the islands; (ii) willingness to participate; (iii) and direct knowledge of the forensic and non-forensic communities that had patients with non-custodial security measures; included in the sample were offenders found to be completely without criminal responsibility (Article 88 Italian penal code) or reduced responsibility (Article 89 Italian penal code) and socially dangerous (article 203) who gave their written consent to participate.

From November 2020 to May 2021 a cross-sectional sample was recruited throughout the services in scope in Italy made up of 193 offenders affected by mental disorders, from different contexts: Italian REMS (medium secure), other community residences CRP (low secure), and forensic patients in non-secure community places. The Covid pandemic placed constraints on the ability to access the units and to interview residents at times.

The REMS and mental health facilities of Piedmont, Lombardy, Veneto, Tuscany, Lazio, Campania, Puglia, Basilicata, Calabria and Sicily participated in the research. All patients in the participating units were approached and those who consented were included in the sample reported here.

Measures

The DUNDRUM Toolkit is a set of four different structured professional judgement and assessment tools consisting of five specific scales used with forensic patients for evaluation and treatment purposes (Structured Professional Judgment Tools for Admission, Urgency, Treatment Completion and Recovery Evaluation Triage, and self-rating versions). In particular, the DUNDRUM Toolkit has been validated as matching best practice for levels of therapeutic security in Ireland [8–10, 36], the UK [17, 32, 43], Belgium [19, 20, 22], Australia [1], Aotearoa New Zealand [24, 42] and Canada [25, 30] and now in progress in Italy. The DUNDRUM Toolkit was translated into Italian by bilingual clinicians trained in the use of the DUNDRUM toolkit by HGK.

We used DUNDRUM-1 (triage security) to evaluate need for therapeutic security at the time of committal by the courts. The DUNDRUM-1 was used in its nine item form. This is a 'lifetime ever' rating which is relatively static. Each item relates to an aspect of need for therapeutic security. Each item is rated on a tethered scale from 0 to 4, where a score of '0' indicates no need for therapeutic security or could live safely in the community, '1' indicates that the patient could be managed safely in a local open ward or subject to a supervision order in the community, '2' indicates a need for low secure unit, 3 indicates a need for a medium secure unit such as REMS, and '4' indicates a need for a high secure unit such as exists in other countries. These meaningful units of change are a particular advantage of this type of instrument. For research and audit purposes the nine items are summed and divided by 9 to yield a mean score ranging from 0 to 4, where a mean DUNDRUM-1 score in the range 0–0.9 indicates placement in an open supervised community placement ward or open ward, 1.0 to 1.9 indicates placement in a low secure unit, 2.0 to 2.9 indicates a need for placement in a medium secure unit such as REMS, 3.0 to 4 indicates need for a high secure placement.

The DUNDRUM-3 programme completion scale is a seven item scale that assesses progress in treatment domains relevant to mental disorder and offending. These include physical health, mental health, substance misuse, offending behaviour, self-care and activities of daily living, education occupation and creativity, and family and intimacy. Each is rated on a scale from 0 to 4, where 4 indicates that the patient is not yet ready to move from a high secure place to medium secure; 3 indicates readiness to move from a high secure place to medium secure; 2 for readiness to move from medium secure to low secure; 1 indicates readiness for movement from low secure to open wards or community places and 0 indicates no longer needs therapeutic security of any sort. Adding the scores for the seven items and dividing by seven yields a score from 0 to 4 that can be used for clinical, research and audit purposes as for the DUNDRUM-1.

The DUNDRUM-4 forensic recovery scale is a seven item scale also rating readiness to move to less secure settings as for the DUNDRUM-3. The items are stability, insight, rapport and working alliance, leave, dynamic risk, victim sensitivities, and hope. Each item is rated in the same way as the DUNDRUM-3.

Italian translation

The Italian translation was first drafted by FC. The translation was back-translated and checked in English between FC and HGK during training sessions until a satisfactory translation was arrived at.

Safest current placement

In order to compare the current level of therapeutic security with a calculated safest current placement, we compared the DUNDRUM-1 triage security assessment of need for therapeutic security prior to treatment, with evidence for progress made in treatment (DUNDRUM-3) and forensic recovery (DUNDRUM-4). Starting with the DUNDRUM-1 static rating of level of therapeutic security needed at the time of the making of the security measure by the court, an algorithm was used to manually check this against the DUNDRUM-3 and DUNDRUM-4 ratings of current need and the more conservative of these was adopted as the safest current placement. For example if a patient had a mean DUNDRUM-1 score of 2.5 (in the range 2.0 to 2.9), that would indicate need for medium security (REMS). If the current DUNDRUM-3 rating was a mean score of 1.5 (in the range 1.0 to 1.9) that would indicate readiness to move to low security (forensic low secure facility) and a DUNDRUM-4 mean score of 0.8 (in the range 0 to 0.9) would indicate readiness to move to an open or independent setting. The more conservative of these two (1.5, ready to move to low security) would be taken as the current level of need for therapeutic security that was the safest current placement.

Data sources

Resident patients in the participating REMS (medium secure units) and CRPs (low secure units) were approached by the two clinical psychologists trained in the use of the instruments and asked to give signed, informed consent. All interviews were carried out face to face by experienced clinical psychologists trained in the use of the research instruments who also had access to the medical and psychiatric records.

Bias

Bias may have arisen due to geographical variation in practices. However the units approached and included were balanced for various parts of Italy as described above. There is always a risk that research in forensic psychiatry may be biased by the exclusion of potential participants who are too unwell to take part or because of abnormal mental states, unwilling to give consent.

Study size

In the absence of a pilot study in the Italian forensic psychiatry population, Reliable Change Index [13] was calculated for the Italian translation of the DUNDRUM Toolkit. Confidence intervals based on sample size and variance are given for estimates.

Statistics methods

All data, anonymised, were entered into Excel files then SPSS-28 [7]. Continuous variables were compared using analysis of variance. Other data were analysed using Chi squared. Internal consistency was measured using Cronbach's alpha coefficient and this was used to calculate the Reliable Change Index. Concordance between actual current level of therapeutic security and assessed safest current level of therapeutic security was tested with the Intra Class Correlation Coefficient (ICC).

Results

Italian translation of DUNDRUM toolkit

The Italian translation showed psychometric properties as for the original English version. Internal consistency was measured using Cronbach's alpha, For DUNDRUM-1 alpha = 0.843, DUNDRUM-3 alpha = 0.746, DUNDRUM-4 alpha = 0.842. The Reliable Change Index (RCI) for the DUNDRUM-1 was 0.77, for DUNDRUM-3 was 0.89 and for DUNDRUM-4 was 0.79. Because the RCI was less than 1 unit for the DUNDRUM scales, and because these are calibrated in units of meaningful change, it follows that for an individual patient any change of one whole unit in the mean score of each scale is reliable. It follows also that changes in group means of more than one whole unit, indicating a change from high to medium secure need, or medium to low secure need, or to open conditions, is also reliable.

Participants

There were 140 in scope in six REMS with smaller numbers from three other REMS. The sample included 137 resident in REMS (medium security). The sample also included 55 resident in seven CRP (low security forensic) facilities.

There were in total 179 males and 14 (7.2%) females included. Mean Age was 43.5 (S.D. 11.5, range 18–85, 95% CI 41.9 to 45.2), mean years of education 9.6 (S.D. 3.1) and mean months since admission 14.9 (S.D. 10.2). Age, years of education and time since admission did not differ significantly between males and females or between REMS (medium security) and CRP (low security).

The most common diagnosis (Table 1) was schizophrenia (48.4% in medium security, 36.5% in low security), with personality disorder in the absence of an axis I disorder in 18.9% of medium security and 11.5% of low security residents. Intellectual disability as primary diagnosis was more common in low security (15.4% vs 3.3%).

A personality disorder (including co-morbid personality disorders) was diagnosed in 30 (24.5%) of medium secure residents and 16 (30.8%) of low secure residents. Substance misuse was noted in 25 (20.5%) of medium

Table 1 Axis 1 diagnosis for 174 patients, by placement

	Total n	organic		SCZ		SCZ-aff		Del. Dis		Bipolar		PD only		MHIDD	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%
REMS	122	8	6.6	59	48.4	14	11.5	7	5.7	7	5.7	23	18.9	4	3.3
Low secure Forensic facilities	52	2	3.8	19	36.5	5	9.6	5	9.6	7	13.5	6	11.5	8	15.4

Difference between medium security (REMS) and low security (CRP) $X^2 = 14.1$, df = 6, p = 0.028

SCZ schizophrenia, *SCZ-aff* schizoaffective, *Del. Dis.* delusional disorder, *PD only* personality disorder only, *MHIDD* mental health intellectual disability

secure residents and 12 (23.1%) of low secure residents. Both of these diagnostic categories are likely to be under-recorded.

Need for therapeutic security

Mean DUNDRUM-1 triage security scores did not differ between medium secure units (REMS) and low secure units (CRP) (REMS n = 137, mean nine item DUNDRUM-1 score 2.21, SD 0.65, 95% CI 2.09 to 2.32, range 0.44 to 3.78; CRP n = 49, 2.07, SD 1.09, 95% CI 1.86 to 2.29, range 0.36 to 3.78, ANOVA F = 1.4, df = 1, p = 0.242). Although patients in low secure community residences (CRP) tended to have lower DUNDRUM scores than in medium secure residences (REMS), the range was very wide and overlapped extensively.

Based on DUNDRUM-1 triage criteria at time of admission, 18 (13%) currently in medium security (REMS) and 7 (14%) currently in low security (CRP) should have commenced their admissions in high security; 53% of those currently in medium security and 45% of those in low security should have started their admissions in medium security while 52% of those in medium security and 35% of those in low security should have started their admissions in low security. For open placement, 2% of patients currently in medium secure and 6% of patients currently in low security could have started their admissions in open placements (Table 2).

Table 2 also shows that when progress in treatment (DUNDRUM-3) or progress in forensic recovery (DUNDRUM-4) are considered, the match between current placement and assessed need for therapeutic security is less discordant. For those currently in medium security, only between 2.2 and 3.8% currently needing high security, about the same proportion (53.7% and 49.6%) is correctly allocated to medium security and about 40% should have progressed to low security. For those currently in low security, 8% appeared to still need high security, about 46% needed medium security and 37.5% appeared to be correctly placed in low security.

Although only one patient was currently living in the community while subject to an order, DUNDRUM-1 triage security indicated that 6 (3.1%) could have started their treatment there while treatment progress (DUNDRUM-3) indicated that 8 (4.1%) were ready for a

Table 2 DUNDRUM-1 triage security score indication of safest placement at the time of committal; assessed need for therapeutic security DUNDRUM-1 offset by progress in treatment DUNDRUM-3; assessed need for therapeutic security DUNDRUM-1 offset by progress in forensic recovery DUNDRUM-4

	Assessed need	DUNDRUM-1 level Assessed need at time of admission		DUNDRUM-1/DUNDRUM-3 Current assessed need based on DUNDRUM-3 progress		DUNDRUM-1/DUNDRUM-4 Current assessed need based on DUNDRUM-3 progress	
		n	%	n	%	n	%
Actual current placement medium security	High security	18	13.1	3	2.2	5	3.8
	Medium security	72	52.6	73	53.7	65	49.6
	Low security	44	52.1	56	41.2	53	40.5
	Open placement	3	2.2	4	2.9	8	6.1
	total	137		136		131	
Actual current placement low security	High security	7	14.3	4	8.3	4	8.3
	Medium security	22	44.9	23	47.9	22	45.8
	Low security	17	34.7	18	37.5	18	37.5
	Open placement	3	6.1	3	6.3	4	8.3
	total	49		48		48	

Table 3 Actual current placements compared to safest current placement (DUNDRUM-1 level offset by current DUNDRUM-3 or DUNDRUM-4 level); safest current place by current site. Note that there were no current high secure places

Current placement	Safest current placement								Total n
	Open		Low Secure		Medium Secure		High Secure		
	N	%	n	%	n	%	n	%	
Medium secure (REMS)	3	2.2	49	36	79	58.1	5	3.7	136
Low secure Forensic facilities (CRP)	3	6.3	18	37.5	23	47.9	4	8.3	48
Community order (CFS)	0	0	0	0	1		0	0	1

$X^2 = 4.9$, df = 6, p = 0.563; Intra-class correlation coefficient (ICC) measure of agreement ICC = − 0.039, F = 0.962, df = 184, p = 0.914

Table 4 Current placement compared to appropriateness of placement (safest current placement)

	Higher than safe		Safe		Lower than safe		Total
	n	%	n	%	n	%	N
Current placement							
Medium secure (REMS)	52	38.2	79	58.1	5	3.7	136
Low secure (CRP)	3	6.3	18	37.5	27	56.3	48

Currently in medium secure v currently in low secure $X^2 = 71.4$, df = 2, p < 0.001

community placement and forensic recovery (DUNDRUM-4) indicated that 13 (6.7%) were ready for a community placement.

Table 3 shows the rating of safest current placement compared with actual current placement. There was little concordance between actual and safest current placement as assessed by the DUNDRUM Toolkit ($X^2 = 4.9$, df = 6, p = 0.563; Intra-class correlation coefficient (ICC) measure of agreement ICC = − 0.039, F = 0.962, df = 184, p = 0.914).

Although currently no high secure places are available, the medium secure sample included 5, (3.7% of all medium secure patients assessed) and the low secure sample included 4 (8.3% of low secure patient assessed) who currently needed a high secure placement. In medium security, 79 (58.1% of REMS patients assessed) were currently rated as correctly placed in medium security. Twenty three patients currently in low secure places were assessed as needing medium security (47.9% of low secure patients assessed). Of those currently in medium security 49 (36% of all REMS patients assessed) were assessed as currently needing only low security as their safest current place. There were 18 of the 48 in low secure units (37.5% of those assessed in low secure units) who were assessed as correctly placed in low security. Three currently in medium security and 3 more in low secure units could have been safely accommodated in non-secure settings the community.

Patients currently in medium security (REMS) were more likely to need a less secure placement, while patients currently in low secure units (CRP) were more likely to need a higher level of therapeutic security. There were patients in both REMS and CRP who were assessed as needing a higher level of therapeutic security however patients in medium security were more likely to be in a safe or more than safe placement, while those in low security were more likely to be in a less than safe level of therapeutic security ($X^2 = 71.4$, df = 2, p < 0.001) (Table 4).

Discussion

We have shown that the Italian translation of the DUNDRUM Toolkit has good psychometric properties including good internal consistency and a Reliable Change Index less than one unit of mean change in each of the sub-scales DUNDRUM-1 triage security, DUNDRUM-3 treatment programme completion and DUNDRUM-4 forensic recovery.

The use of the DUNDRUM-1 to estimate need for therapeutic security at the time of admission has been documented elsewhere and has recently been used to estimate system wide need for high secure capacity in a national model of care that currently lacked high secure provision [24].The use of DUNDRUM-3 and DUNDRUM-4 to off-set this in the light of progress in measured treatment completion and recovery is also well established [1, 11, 12, 30, 32, 34] but has been applied here for the first time as a combined estimate of safest current placement.

We have shown that as expected, 58% of those in REMS were appropriately placed there, and 37.5% of those in

low secure units were appropriately paced. Small but clinically significant numbers were placed in a lower level of therapeutic security than seemed to be required, 5 of those in medium secure REMS (3.7% of total) needed high security and 4 (8%) of those in low security CRP placements needed high security, thereby leaving an unmanaged risk to themselves, to other residents and to staff. But 37.5% of those currently in medium security needed only low security.

Limitations

It is important to bear in mind that this is a cross-sectional sample—many of those who have responded well to treatment since 2015 had already been successfully discharged to independent living. It is the similarity of profiles of those remaining that is significant. Anomalies included a small number who appeared to require a higher level of therapeutic security than is currently possible, and a larger number who were ready for a move from medium to low security.

Another limitation is that this analysis relied on the use of mean scores for DUNDRUM-1. This can lead to an under-estimate of need for therapeutic security, since one or two high scoring items may be subsumed by the averaging process [24]. In practice, the DUNDRUM-1 is used as a structured professional judgement tool in admission panels or when advising courts. When used case by case in individual patients or defendants as part of a judgement support framework to guide but not bind decision making, such factors are taken into account qualitatively as well as quantitatively [24, 27, 28]. Risk assessment instruments are also routinely used in these processes. It must follow however that the number currently requiring high secure placement for safe and effective treatment has been under-estimated, and the risk of serious violence to other residents and to staff may be insufficiently managed.

There is a possibility of bias arising from the possible exclusion of the most severely mentally disturbed who may have been unable or unwilling to give consent to participate. It is also possible that the small number of women in the sample, in keeping with forensic psychiatry samples in many countries, may have had different patterns of need.

Interpretation

If these findings are extrapolated to the 604 who were in medium secure (REMS) places at the time of the study,, there is a current need for approximately 22 high secure beds to accommodate current medium secure (REMS) patients (3.7% of 604 nationally, 95% Confidence Interval 1.2% to 8.4%, 7 to 50) and a larger but unknown number of high secure beds to accommodate current low secure (CRP) patients who need high security.

Generalisation

Given the lack of concordance between the assessed current need for therapeutic security and the current placement, a model of care is required in which decisions about placement are guided by measured need for therapeutic security [27]. This decision making is a central part of the exercise of clinical skill and clinical governance in secure forensic services everywhere, whether relying on unstructured clinical judgement or the combination of structured professional judgement and judgment support frameworks within a mode of care [18, 30]. The availability of relevant structured professional judgement instruments in Italian enables such development. Achieving excellence, the continuous improvement of health gains for patients as the measured outcome of the model of care [29], will be facilitated by the use of measures of static and dynamic need for therapeutic security as well as improved academic links for forensic psychiatry services and the generalisation of linked pathways between levels of therapeutic security [33]. A greater use of such measures would enable better health gains and safer outcomes.

Acknowledgements

The authors wish to acknowledge the assistance of colleagues in the REMS and CRP residences included in the study. The authors wish to thank to patients who agreed to take part and generously gave their time to be interviewed.

Author contributions

The project was designed and supervised by FFC who is the principal investigator. LP wrote the first draft, managed the data base and analysis. FC and FFC translated the DUNDRUM Toolkit into Italian with HGK. LP and DLT ascertained the sample, gathered the data and interviewed patients. MD and HGK provided training and designed the algorithm for assessing safest placement. HGK carried out the main analysis with LP and FFC. All authors contributed to the final draft.

Funding

No specific research grant was obtained for this project. The research was supported in part by University of Bari as part of the PhD thesis work of LP and FC.

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available due to the sensitive nature of the data concerning forensic mental health services and patients but are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The research was approved by the Ethics Committee of the University Hospital of Bari (N. 66510/AA. GG of 09.16.2020). Signed written consent was obtained from all participants.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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Received: 17 October 2023 Accepted: 28 August 2024
Published online: 02 November 2024

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