



Adherence to planned risk management interventions in Swedish forensic care: What is said and done according to patient records



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ABSTRACT

Both structured and unstructured clinical risk assessments within forensic care aim to prevent violence by informing risk management, but research about their preventive role is inconclusive. The aim of this study was to investigate risk management interventions that were planned and realized during forensic care by analysing patient records. Records from a forensic clinic in Sweden, covering 14 patients and 526 months, were reviewed. Eight main types of risk management interventions were evaluated by content analysis: monitoring, supervision, assessment, treatment, victim protection, acute coercion, security level and police interventions. Most planned risk management interventions were realized, both in structured and clinical risk assessments. However, most realized interventions were not planned, making them more open to subjective decisions. Analysing risk management interventions actually planned and realized in clinical settings can reveal the preventive role of structured risk assessments and how different interventions mediate violence risk.

1. Background

The purpose of conducting risk assessments within forensic and other psychiatric in- care settings is to prevent adverse events and facilitate a safe environment for both patients and staff. The assessment is not preventive in itself and must be followed by adequate risk management interventions, i.e. the actions taken to reduce the identified risk.

Traditionally, risk assessments within forensic and in-psychiatric settings have been conducted by a so-called unguided or unstructured clinical judgement (UCJ), based on clinicians' own experience and evaluation of what they perceive to be relevant information. However, the nature of UCJ risk assessments mean that they may include subjective opinions, be subject to decision bias of the clinician, and may be difficult to evaluate due to insufficient or inconsistent documentation (Singh, Bjørkly, & Fazel, 2016). Evidence-based risk assessments with a structured professional judgement (SPJ) approach (Hart & Logan, 2011) have consistently been found to be more accurate than UCJ risk assessments and are now an integrated part of forensic care, albeit UCJ risk assessments are still commonly used (RättspsyK, 2016; Singh et al., 2016). A question has however been raised whether the SPJ approach is

also superior to UCJ assessments when assessing risk in the short term in inpatient settings, because aspects such as the patient's current state of mind could be more easily considered with the latter (Daffern, 2007).

SPJ risk assessments typically include a risk management plan or some type of recommendation on how to reduce the risk of future adverse events (Department of Health, 2007; Guy, Packer, & Warnken, 2012; Storey, Watt, & Hart, 2015), although such plans can differ in the degree of detail depending on the purpose and context of the risk assessment (Doyle & Logan, 2012). There are different approaches to measuring the outcome of implementation and clinical use of SPJ risk assessments. Previous research has mainly investigated links between estimation of risk and recidivism and actual incidents of violence (Vojt, Thomson, & Marshall, 2013), reductions in assessed risk over time (Olsson, Strand, Kristiansen, Sjöling, & Asplund, 2013), number of realized risk assessments, improved staff knowledge of risk and protective factors (Kroppan et al., 2011), perceived user friendliness (Nicholls, Petersen, Brink, & Webster, 2011), how and to what extent the risk assessment management plan has been translated into care plans (Gilbert, Adams, & Buckingham, 2011; Singh et al., 2014; Vojt et al., 2013), and the influence on specific local policies and procedures (Crocker et al., 2011). Storey et al. (2015) studied the frequency of the

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main types of risk management interventions (monitoring, treatment, supervision and victim safety planning) recommended for inclusion in a SPJ risk communication concept. Other studies report on what clinicians and patients perceive to be relevant risk management interventions (patient-related, staff-related and environment-related), however without considering whether such interventions were actually planned or realized (Hallett, Huber, & Dickens, 2014).

Research studies have found that SPJ risk assessments can contribute to a reduction of violence, presumably by means of the risk management plans and actions taken (Troquete, van den Brink, Beintema, Mulder, & van Os, 2013a, 2013b). However, numerous aspects can hamper adherence to a planned course of action (Levin, Nilsen, Bendtsen, & Bulow, 2015; Nonstad & Webster, 2011), regardless of how accurate the plan may be.

Violence prevention within public health care can be focused on primary prevention strategies aimed at preventing violence before it happens, secondary prevention aimed at early detection and prevention of imminent violence, and tertiary prevention aimed at reducing the impact of and/or minimize the harm of violence (Hallett et al., 2014). Different clinical and legal contexts, populations, gender and levels of assessed risk might affect which type of violence prevention perspective and risk management interventions that are used, warranted, allowed and available (Kaunomäki et al., 2017; Maguire, Daffern, Bowe, & McKenna, 2017). Violence prevention within forensic and in-psychiatric settings can include addressing all three types of these violence prevention perspectives, even though the extent to which this is done or the effectiveness of such strategies have not been investigated (Hallett et al., 2014). A wide range of risk management interventions usually need to be considered (Allnut et al., 2013). Medication is a commonly used risk management intervention, but also reassurance, observation, distraction, limit-setting, 1–1 nursing and de-escalation are used (Maguire et al., 2017). Seclusion, medication and focused discussion with a nurse are common risk management strategies for patients assessed to have a high risk of violence (Kaunomäki et al., 2017). There is, however, a lack of research evidence about the effectiveness of different risk management interventions to prevent violence and other adverse events (Maguire et al., 2017). Some risk management interventions have also been found to potentially increase the risk of violence (Maguire et al., 2017) and other adverse events such as preventing reintegration in the community (Coffey, 2012) and even causing harm to patients and staff (Knox & Holloman, 2012). The effectiveness of risk management interventions might also differ depending on which intervention is used for which patient (male or female), the level or risk assessed, the timing of application and in which way an intervention is used (Maguire et al., 2017). There is a lack of clear definitions of risk management interventions (Maguire et al., 2017), which can hamper research.

The actual preventive role of SPJ assessments in reducing violence is hence not yet fully understood (Troquete et al., 2013a, 2013b; Wand & Large, 2013). The importance of further research on the link between recommended and realized risk management interventions following risk assessments has been emphasized by numerous researchers (Daffern, 2007; Singh et al., 2014; Singh, Desmarais, Hurducas, et al., 2014; Storey et al., 2015; Sturup, Forsman, Haggård, Karlberg, & Johansson, 2013; Vojt et al., 2013). Such research is necessary to clarify the preventive role of risk assessments, given the impact such assessments and interventions might have on time of care and restrictions on patient freedom. Considering the time and resources usually required to complete and communicate structured risk assessments in clinical practice, it is also warranted to ask whether and how such assessments and risk management plans actually contribute to improved care and prevention of adverse events.

Few studies have studied the actual clinical use of risk assessments by comparing planned risk management with interventions actually realized in clinical practice. Singh, Desmarais, Sellers, et al. (2014) found that risk assessors, after having conducted a structured risk

assessment, claimed to receive feedback on whether their recommended risk management plan was realized or not in 50% of cases. In one in three cases, the proposed risk management plans were not realized. However, the study did not include an investigation of the type of risk management interventions that were said to be realized in a specific clinical context or a follow-up of the accuracy of the feedback provided to the risk assessors. No previous research on risk management interventions following UCJ risk assessments and no studies comparing such assessments with an SPJ risk assessment were found.

The aim of this study was to investigate risk management interventions that are planned and actually realized in forensic psychiatric care, but also to investigate whether the interventions that were conducted were planned or not, by analysing patient records. Such interventions can be part of unstructured clinical assessments and/or structured clinical assessments with a structured judgement approach. The study addresses three research questions: (a) to what extent are realized risk management interventions planned in structured risk assessments and unstructured clinical assessments, according to patient records?; (b) to what extent do risk management interventions planned in structured risk assessments overlap with those planned in unstructured clinical assessments, according to patient records?; (c) to what extent are realized risk management interventions unplanned, according to patient records?

2. Methods

2.1. Patient records

Two wards, housing 24 patients, were recruited from a regional forensic psychiatric clinic in Sweden with a total of 6 wards and 72 patients. The two wards were selected because they were part of a pilot implementation project evaluating risk assessment procedures at the clinic. Even though the participants were recruited when staying in the two wards, they could move to other wards during the study period. All 24 patients were informed about the study at morning meetings in the ward and asked about agreement to have their patient records reviewed. Both written and oral information was then provided to the patients individually. Nine patients declined, 7 on one ward and 2 on the other. Fifteen patients agreed to have their records reviewed, 5 from one ward and 10 from the other. One consenting patient died before the data collection started and was therefore excluded from the study. The study population demographics are reported in Table 1. Only the main psychiatric diagnosis at the time of the index offence is recorded, but most of the study population had two to five different diagnoses. The index offence with the strongest penal value is recorded in Table 1, however half of the study population had two to five offences when sentenced to forensic care. Because of the limited number of participants, a more detailed description was not appropriate to retain anonymity. To allow for assessment of the representativeness of the study sample, demographic data from the national forensic quality register (Annual Forensic Report, 2016) covering the total population of forensic patients in Sweden the year 2016, are also included in Table 1.

2.2. Data collection and analysis

To gather information about planned and realized risk management interventions within a clinical forensic psychiatric context, a review of patient records using directed content analysis, applying so-called deductive categories, was used. A directed approach is suitable to validate or extend a previously described theory or phenomenon. The previously described phenomena are drawn upon and used to guide and focus the research questions and variables of interest. Data can be meaningfully reported in terms of frequencies and incidences of the defined categories (Hsieh & Shannon, 2005; Mayring, 2000). Counting frequencies and reporting results in percentages was deemed suitable and sufficient to provide data of occurrences and allowing for comparisons to address

Table 1
Population demographics and clinical data.

	Study population, N = 14 (number of patients in percent of the total study population of 14 patients)	Forensic population in Sweden 2016, N = 1694 (Annual Forensic Report, 2016) (number of patients in percent of the total population of 1694)
Gender		
Female	29%	17%
Male	71%	83%
Mean age	31 years	42 years
Index offence		
Arson	36%	11%
Physical assault	21,5%	36%
Verbal threats	7%	13%
Murder/manslaughter	21,5%	14%
Sexual offences	7%	8%
Other	7%	18%
Psychiatric diagnosis		
Schizophrenia, psychosis	29%	61%
Delusion syndrome	0%	4%
Neuropsychiatric disorders	43%	12%
Personality disorders	7%	6%
Affective disorders	7%	5%
Developmental dysfunctions	14%	4%
Disorder caused by substances	0%	4%
Other	0%	4%
Mean time in forensic care	2 years 6 months	4 years 5 months

the research questions. Considering the SPJ assessments to be a necessary addition to aid and improve clinical care decisions and risk management, the SPJ assessments were taken as a frame of reference to the unstructured clinical assessments when calculating the percentages.

Definitions and concepts were drawn from previous definitions of risk management interventions, summarized in a coding scheme, applied directly to code the initial data, and then revised based on the findings (division and addition of main categories and subcategories) throughout the analysis process.

A preliminary coding scheme was constructed based on the four main areas of risk management following a SPJ approach described by Douglas, Hart, Webster, and Belfrage (2013) and by Doyle and Logan (2012): monitoring, supervision, treatment and victim safety planning. Although risk management interventions might be conceptualized in different ways by patients and clinicians (Hallett et al., 2014), currently the SPJ approach is recommended as best practice standard (Department of Health, 2007; National Board of Health and Welfare, Sweden, 2008<http://www.socialstyrelsen.se>).

Monitoring includes surveillance interventions and plans to continuously monitor risk factors and early warning signs to prevent relapse, such as scenario planning, self-observation, observation by others, meeting/face-to-face interaction with care providers, visitation/inspection of belongings, and/or control of substance use/drug testing. Supervision includes control and involuntary restriction of the environment or setting, rights and freedom of the patient to limit exposure or access to circumstances related to risk of adverse events. Limitation of patients' activities, movements, associations and/or communications is an example of a supervision intervention. Treatment includes, for example, different habilitative and rehabilitative interventions, psychopharmacological interventions, psychotherapy, psychosocial rehabilitation, as well as different types of assessments. Victim safety planning includes plans, recommendations and interventions to protect and support a potential victim (past and/or future) from harm. Examples include the use of emergency safety procedures, personal alarms, regulating interactions, as well as providing information about assessed risk and risk management.

The preliminary coding scheme was piloted on two patient records by the first author. The two pilot records were selected after the first author had read all the records and noted a wide variety of interventions in the selected samples. Notes were then discussed by the first author, PSB, PB and PN. Based on findings from the pilot analysis, some additions were made to the coding scheme. Revisions were done to

reduce overlapping headings, and a heading of "Treatment, other" was added. Subsections of the four major areas outlined in Douglas et al. (2013) and in Doyle and Logan (2012) were specified, keeping definitions of categories close to the examples already described there. Some previously described examples of monitoring (scenario planning, self-observation) and victim safety planning (use of emergency safety procedures, personal alarms) were not found in the review records and not given a subcategory. Victim safety planning was labelled victim protection.

Different coercion interventions, dealing with an imminent risk, did not really fit the description of the other major categories, and were subsequently placed in a separate category. Different forms of assessments and investigations have previously been described as a treatment intervention, but as there were clinically relevant distinctions between these interventions, the assessments were recorded as separate categories. Regulation of security level and police interventions were other examples that did not really fit the categories previously described and were hence recorded as a new category (Table 2). After the revision of the initial coding scheme, the continued coding of the rest of the records did not yield any new main categories, but a few more examples of different types of limitation of freedom, assessments and coercion were found and given a separate subcategory. Record notes that were difficult to code, or not fitting into any existing category, were discussed by the first author with the other authors and any revisions to the coding scheme were agreed upon. When all records had been analysed, the last version of the coding scheme was discussed by all authors, before being used by the first author to re-analyse all the records a second time.

The type of risk management intervention was registered as (1) planned but not realized, (2) planned and realized or (3) realized (Appendix 1). However, the number of times each intervention was planned and/or realized clinically was not registered. If, for example, a psychotherapy treatment was planned three times and then realized by 30 psychotherapy sessions, this was recorded in this study as one risk management intervention: one time planned and one time realized.

Repeated documentation of the same event was not included; administrative routines and communications, interventions directed at exclusive somatic symptoms, calls from the patient's social network outside the clinic, or if the patient expressed a preference for an intervention that was not supported by staff and not followed through were also not included.

Unstructured clinical assessments were broadly defined as any

Table 2
Coding scheme.

CATEGORY (MAIN AND SUB-CATEGORY)	DEFINITION
RISK MANAGEMENT INTERVENTION	The preventive measure taken to mitigate an identified risk of an adverse event
Monitoring	
Observation	Surveillance interventions and plans to monitor risk factors, to detect early warning signs to prevent relapse, continuous follow-up/control of identified signature risk signs. Scenario planning, self-observation and/or observation by others to detect early warning signs, meeting/face-to-face interaction with staff/professionals, observation of psychiatric symptoms etc., visitation/inspections, and control of substance use/drug testing
Visitation of room, clothes, body, belongings	
Control of substance use	
Supervision	
Limitation of movement outside the ward	Control and involuntary restrictions of the environment or setting, rights and freedom, to limit exposure or access to circumstances related to risk of adverse events. Limitation/restriction of patients' activities, movements, associations and/or communications, and or access to resources (financial and other) and belongings
Limitation of movement on the ward	
Limitation of social interaction	
Limitation of electronic communication	
Limitation of access to resources and belongings	
Assessment	
Psychological	Assessments and investigations to gather vital information to make further assessments and decisions about risk management and treatment interventions, such as psychological, psychosocial, occupational and structured risk assessments
Occupational	
Psychosocial/financial	
Structured risk assessment, consultation of risk	
Treatment	
Medication, revision of medical treatment, administration of on need medication	Bio-psychosocial interventions intended to restore deficits in functioning (for example, substance use, interpersonal, cognitive, behavioural, emotional and social deficits) linked to risk of adverse events and used to enhance protective factors. Psychopharmacological interventions/medication; psychotherapy treatment; psychosocial interventions/rehabilitation, environmental therapy/nursing care, meetings with psychiatrist/medical assessment and follow-up, occupational activities
Psychotherapy	
Psychoeducation	
Environmental treatment, nursing care, meeting ward staff, nurse, social worker	
Medical assessment and treatment by meetings with psychiatrist	
Occupational activities	
Treatment: Other	
Victim protection	
Interventions	Plans, recommendations and interventions to protect and support a potential victim (past and/or future) from harm (past victims, family members of patients, past/current partner, children, and care providers). Emergency safety procedures, personal alarms, regulating interactions between offender and possible victim. Providing information to potential victim about assessed risk and relevant/possible risk management. Removing staff from the ward, staff not interacting with patients alone
Acute coercion	
100% supervision	Acute coercion interventions to deal with an imminent risk and to prevent escalation, when previous de-escalation interventions fail and the patient cannot be persuaded to cooperate, such as 100% supervision, forced medication (injections), placement in isolation/seclusion (automatically 100% supervision) and/or physical restraints such as belting or being held down
Medical treatment, injections	
Isolation, seclusion	
Physical restraint, use hand cuffs and belting	
Security level	
Change of security level, change of ward/clinic, level/form of care	Matching the assessed risk with placement of clinical setting, type of ward at the clinic (level of security, number of staff, number of patients) or in another clinical setting.
Police interventions	
Police intervention	Use of the police as an external source to gather information and/or deal with an identified risk (for example, assistance from the police to take a violent patient to another hospital for somatic treatment, reporting crimes committed on the wards, etc.)

documentation from weekly round meetings, care plan meetings (every 6 months), nursing care plan follow-ups and daily notes made by staff on the ward. Structured risk assessments (SPJ assessments) included documentation of HCR-20, Historical, Clinical and Risk management – 20 (Webster, Douglas, Eaves, & Hart, 1997), START, Short Term Assessment of Risk and Treatability, (Webster, Martin, Brink, Nicholls, & Middleton, 2004), SVR-20, Sexual Violence Risk – 20 (Boer, Hart, Kropp, & Webster, 1997), SRP, Stalking Risk Profile (MacKenzie et al., 2009) and/or RSVP, The Risk of Sexual Violence Protocol (Hart et al., 2003) assessments.

Triangulation of inter-rater reliability was carried out by a review of two patient records. PB and the first author separately gathered data according to the coding scheme from 2 patients over a 6-month period (randomly selected from the specified time interval). Notes were then compared and discussed until agreement was reached on how to code the data. The first author then continued to review the rest of the patients' computer journals based on the predefined coding scheme, from December 2009 to June 2013 (3.5 years).

The study applied a mixed-method approach in terms of qualitatively extracting and analysing the type of risk management interventions documented in the records and quantitatively presenting the data in frequencies of each category. The approach was deductive in the use

of predefined descriptions of risk management interventions and inductive by allowing new categories to emerge from the data.

3. Results

3.1. Review of records

Fourteen patient records covering 526 months were reviewed. Some of the patients were committed to forensic care after the start of the study period, others were transferred to other forensic psychiatric clinics during the study period, transferred to open forensic psychiatric care outside the clinic, and some were definitely discharged. This resulted in differences in the amounts of time reviewed for different patient records, ranging from 14 to 42 months. The participants had one to four START assessments (37 registered in total), 11 had one HCR-20 assessment, two had an RSVP assessment, two an SVR-20 assessment and one an SRP assessment. The study population differed from the total forensic psychiatric population in Sweden regarding the main diagnosis and the main index offence, which can be explained by the psychiatric profile of the wards included in the study.

Table 3
Risk management interventions.

Research aim	To what extent are realized risk management interventions planned in structured risk assessment (SPJ) and unstructured clinical assessment (UCJ) respectively? N = number	To what extent do SPJ planned risk management interventions overlap with those planned in UCJ? N = number	To what extent are realized risk management interventions unplanned? N = number	Are there any differences between different types of risk management interventions?
Risk management interventions	% Realized of UCJ planned interventions	% SPJ planned interventions that are also planned in UCJ	% Unplanned interventions of all realized interventions	Comment
Monitoring				
Observation				
35% N Realized: 19 N Planned: 55	50% N Realized: 18 N Planned: 36	19% N Planned UCJ: 7 N Planned SPJ: 36	63% N Realized not planned: 63 N Realized: 100	35% of clinically planned observation interventions were recorded as realized and 63% of the realized observations were not recorded as planned. Half of the observation interventions planned in SPJ assessments were realized. 19% of the SPJ planned observations, were also planned clinically 89% of the planned visitation interventions were realized, even though most realized visitations (80%) were not planned. This type of intervention was not mentioned in SPJ assessments
Visitation of room, clothes, body, belongings	89% N Realized: 8 N Planned: 9		80% N Realized not planned: 33 N Realized: 41	Control of substance use is often realized according to plan, both in clinical (62%) and SPJ assessments (75%). 76% of the realized interventions were however not planned. All interventions planned in SPJ assessments were also planned clinically
Control of substance use	62% N Realized: 8 N Planned: 13	100% N Planned UCJ: 4 N Planned SPJ: 4	76% N Realized not planned: 35 N Realized: 46	45% of the clinically planned and 53% of the SPJ planned were realized. 28% of the SPJ and clinically planned monitoring interventions overlapped. 70% of all realized monitoring interventions were not planned at all. Monitoring interventions were noted 187 times
All monitoring interventions	45% N Realized: 35 N Planned: 77	28% N Planned UCJ: 11 N Planned SPJ: 40	70% N Realized not planned: 131 N Realized: 187	
Supervision				
Limitation of movement outside the ward	72% N Realized: 235 N Planned: 325	86% N Planned UCJ: 18 N Planned SPJ: 21	25% N Realized not planned: 84 N Realized: 337	Most planned interventions regarding restriction of movement outside the ward were realized according to plan, both in clinical (72%) and SPJ assessments (86%). 86% of the planned SPJ interventions were also planned clinically and 25% of these interventions were not planned at all
Limitation of movement on the ward	50% N Realized: 4 N Planned: 8		92% N Realized not planned: 47 N Realized: 51	Limitation of movement on the ward, was only planned clinically, and realized in half of the cases. 92% of the realized interventions were not planned
Limitation of social interaction	69% N Realized: 27 N Planned: 39	100% N Planned UCJ: 5 N Planned SPJ: 5	54% N Realized not planned: 37 N Realized: 69	Clinically planned limitation of social interactions was realized in 69% of cases, and in 100% of the cases in SPJ assessments. There was a 100% overlap between SPJ planned and clinically planned interventions. However, 54% of the realized interventions were not planned
Limitation of electronic communication	40% N Realized: 10 N Planned: 25	100% N Planned UCJ: 4 N Planned SPJ: 4	70% N Realized not planned: 33 N Realized: 47	Clinically planned interventions related to limitation of electronic communication were realized in 40% of cases and in 100% of the SPJ assessments. 70% of the realized interventions were not planned. There was 100% overlap between SPJ planned and clinically planned interventions
Limitation of access to resources and belongings	70% N Realized: 12 N Planned: 17	100% N Planned UCJ: 1 N Planned SPJ: 1	59% N Realized not planned: 19 N Realized: 32	70% of the clinically planned interventions related to limitation of access to resources and belongings were realized and 100% of the SPJ planned. 59% of the realized interventions were not planned. All SPJ planned interventions were also planned clinically
All supervision interventions	70% N Realized: 288 N Planned: 414	90% N Planned UCJ: 28 N Planned SPJ: 31	41% N Realized not planned: 220 N Realized: 536	70% of the clinically planned supervision interventions were realized, and 90% of the SPJ planned. There was a large overlap between SPJ and clinically planned supervision interventions

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Table 3 (continued)

Research aim	To what extent are realized risk management interventions planned in structured risk assessment (SPJ) and unstructured clinical assessment (UCJ) respectively? N = number	To what extent do SPJ planned risk management interventions overlap with those planned in UCJ? N = number	To what extent are realized risk management interventions planned in structured risk assessment (SPJ) and unstructured clinical assessment (UCJ) respectively? N = number	To what extent are realized risk management interventions planned in structured risk assessment (SPJ) and unstructured clinical assessment (UCJ) respectively? N = number	To what extent are realized risk management interventions planned in structured risk assessment (SPJ) and unstructured clinical assessment (UCJ) respectively? N = number	To what extent are realized risk management interventions planned in structured risk assessment (SPJ) and unstructured clinical assessment (UCJ) respectively? N = number	Are there any differences between different types of risk management interventions?	Comment
Risk management interventions	% Realized of UCJ planned interventions	% Realized of UCJ planned interventions	% Realized of SPJ planned intervention	% SPJ planned interventions that are also planned in UCJ	% Unplanned interventions of all realized interventions	% Unplanned interventions of all realized interventions		
Assessment								
Psychological	61% N Realized: 14 N Planned: 23	67% N Realized: 4 N Planned: 6	83% N Planned UCJ: 5 N Planned SPJ: 6	5% N Realized not planned: 1 N Realized: 19			interventions (90%), 41% of the realized supervision interventions were not planned	61% of the clinical and 67% of the SPJ planned psychological assessments was realized and there was 83% overlap between SPJ and clinically planned interventions of this kind. Only 5% of the realized interventions were not planned
Occupational	92% N Realized: 11 N Planned: 12			66% N Realized not planned: 21 N Realized: 32				Occupational assessments were only planned clinically and were most often realized (92%). 66% of the realized assessments were not planned
Psychosocial/financial	100% N Realized: 1 N Planned: 1			75% N Realized not planned: 3 N Realized: 4				Psychosocial/financial assessments were only planned clinically and were all realized. A majority, 75%, were not planned
Structured risk assessment, consultation of risk	88% N Realized: 29 N Planned: 33			42% N Realized not planned: 21 N Realized: 50				The clinically planned SPJ assessments were realized in 88% of the cases, 42% of the realized SPJ assessments were not clinically planned
All assessment interventions	80% N Realized: 55 N Planned: 69	67% N Realized: 4 N Planned: 6	83% N Planned UCJ: 5 N Planned SPJ: 6	44% N Realized not planned: 46 N Realized: 105				80% of the clinically planned and 67% of the SPJ planned assessment interventions was realized. 83% of the SPJ planned assessment interventions were also planned clinically. 44% of the realized interventions were not planned at all
Treatment								
Medication, revision of medical treatment, administration of on need medication	87% N Realized: 79 N Planned: 91	100% N Realized: 17 N Planned: 17	100% N Planned UCJ: 17 N Planned SPJ: 17	65% N Realized not planned: 179 N Realized: 275				Clinically planned medical treatment was realized in 87% of cases and in 100% of SPJ planned cases. There was 100% overlap between SPJ planned and clinically planned interventions. 65% of the realized medical treatments were not planned
Psychotherapy	80% N Realized: 39 N Planned: 49	91% N Realized: 10 N Planned: 11	100% N Planned UCJ: 11 N Planned SPJ: 11	2% N Realized not planned: 1 N Realized: 50				80% of the clinically planned psychotherapy interventions were realized and 91% of the SPJ planned. All SPJ planned interventions were also planned clinically. Only 2% of the realized interventions were not planned
Psychoeducation	42% N Realized: 11 N Planned: 26	100% N Realized: 4 N Planned: 4	100% N Planned UCJ: 4 N Planned SPJ: 4	17% N Realized not planned: 3 N Realized: 18				The clinically planned psychoeducational interventions were realized in 42% of cases and 100% of the SPJ planned were realized. All interventions planned in SPJ assessments were also planned clinically. 17% of the realized interventions were not planned
Environmental treatment, nursing care on ward, meetings with ward staff, nurses and social worker	91% N Realized: 162 N Planned: 178	92% N Realized: 33 N Planned: 36	92% N Planned UCJ: 33 N Planned SPJ: 36	75% N Realized not planned: 670 N Realized: 865				91% of the clinically planned nursing care interventions were realized, as well as 92% of the SPJ planned interventions. 92% of the SPJ planned interventions related to nursing care were also planned clinically. 75% of the realized nursing care interventions were however not planned
Medical assessment and treatment by meetings with psychiatrist	98% N Realized: 101 N Planned: 103	100% N Realized: 1 N Planned: 1	100% N Planned UCJ: 1 N Planned SPJ: 1	72% N Realized not planned: 264 N Realized: 366				98% of the clinically planned psychiatrist assessment/meetings with patients were realized and 100% planned in SPJ assessments. All SPJ planned interventions were also planned clinically. 72% of all realized psychiatrist assessment/meetings with patient were not planned

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Table 3 (continued)

Research aim	To what extent are realized risk management interventions planned in structured risk assessment (SPJ) and unstructured clinical assessment (UCJ) respectively? N = number	To what extent do SPJ planned risk management interventions overlap with those planned in UCJ? N = number	To what extent are realized risk management interventions unplanned? N = number	Are there any differences between different types of risk management interventions?
Risk management interventions	% Realized of UCJ planned interventions	% Realized of SPJ planned intervention	% SPJ planned interventions that are also planned in UCJ	Comment
Occupational activities	71% N Realized: 60 N Planned: 84	100% N Realized: 7 N Planned: 7	100% N Planned UCJ: 7 N Planned SPJ: 7	71% of the clinically planned and a 100% of the SPJ planned occupational activities were realized. There was 100% overlap between SPJ planned interventions and clinically. 19% of the realized interventions were not planned
Other	100% N Realized: 5 N Planned: 5	100% N Realized: 3 N Planned: 3	100% N Planned UCJ: 3 N Planned SPJ: 3	All clinically and SPJ planned treatment interventions (other, not specified) were realized and all SPJ and clinically planned interventions overlapped. 47% of all realized interventions were not planned. Examples of documented interventions included increasing the manpower on the ward to ensure security, efforts to mitigate social isolation, patients demand staff to lock their door, limiting the outer surroundings to reduce stimuli
All treatment interventions	85% N Realized: 457 N Planned: 536	95% N Realized: 75 N Planned: 79	96% N Planned UCJ: 76 N Planned SPJ: 79	85% of the clinically planned and 95% of the SPJ planned treatment interventions was realized. 96% of the SPJ planned treatment interventions were also planned clinically. 68% of the realized treatment interventions were not planned
Victim protection	50% N Realized: 4 N Planned: 8	80% N Realized: 4 N Planned: 5	80% N Planned UCJ: 4 N Planned SPJ: 5	50% of the clinically planned and 80% of the SPJ planned victim protection interventions were realized. 80% of the SPJ planned interventions were also planned clinically. 64% of the realized interventions were not planned
Acute coercion 100% supervision				100% supervision/observation interventions of the patient were used, but never planned, either clinically or in SPJ assessments
Medical treatment, injections				Forced medical treatment/injections were used, but never planned either clinically or in SPJ assessments
Isolation, seclusion	60% N Realized: 3 N Planned: 5			Seclusion clinically planned was realized in 60% of cases. Such interventions were not planned in SPJ assessments. However, 86% of the realized seclusion was not planned at all
Physical restraint, use of hand cuffs and belting	0% N Realized: 0 N Planned: 1			Use of physical restraint was clinically planned once, but not realized. In all realized cases, such interventions were not planned
All acute coercion interventions	50% N Realized: 3 N Planned: 6			Acute coercion interventions were only planned clinically, and half were realized. However, 94% of interventions were not planned at all
Security level	75% N Realized: 30 N Planned: 40	100% N Realized: 2 N Planned: 2		75% of the clinically planned and 100% of the SPJ planned change of security level and/or change of form of care, were realized. All SPJ planned interventions were also planned clinically. 22% of all realized interventions were not planned
Police intervention	100% N Realized: 7 N Planned: 7	100% N Realized: 2 N Planned: 2		All clinically and SPJ planned police interventions were realized. All SPJ planned interventions were also planned clinically. 63% of all realized police interventions were not planned
All risk management interventions	76% N Realized: 879 N Planned: 1157	83% N Realized: 137 N Planned: 165	78% N Planned UCJ: 128 N Planned SPJ tot: 165	In total, 76% of clinically planned risk management interventions and 83% of SPJ planned were realized. There was 78% overlap between SPJ and clinically planned risk management interventions

(continued on next page)

Table 3 (continued)

Research aim	To what extent are realized risk management interventions planned in structured risk assessment (SPJ) and unstructured clinical assessment (UCJ) respectively? N = number	% Realized of UCJ planned interventions	% Realized of SPJ planned intervention	To what extent do SPJ planned risk management interventions overlap with those planned in UCJ? N = number	% SPJ planned interventions that are also planned in UCJ	To what extent are realized risk management interventions unplanned? N = number	% Unplanned interventions of all realized interventions	Comment
Risk management interventions								management interventions. However, most interventions were not planned at all

(N; number)

3.2. Risk management interventions

The risk management interventions are summarized in Table 3. Findings are reported as percentages, but to facilitate understanding, the frequency of documented risk management intervention is also recorded. Column one outlines the different risk management interventions as defined by the coding scheme (see Table 2). In column two, the number of UCJ planned risk management interventions is recorded with the percentage of clinically planned and realized interventions. Also in column two, the second passage, the number of SPJ planned risk management interventions is recorded with the percentage of SPJ planned and realized interventions. In column three, the overlap between UCJ and SPJ planned risk management interventions is specified. In column four, the total number of realized risk management interventions is recorded, as well as the percentage of realized interventions that were not planned in UCJ or in SPJ assessments. In the last column, the findings are commented on.

3.2.1. Frequency of planned and realized risk management interventions in UCJ and SPJ assessments documented in patient records

In this study, 76% of all UCJ planned risk management interventions and 83% of the SPJ planned risk management interventions were realized, the latter showing a slightly higher rate of fidelity.

3.2.2. Overlap between SPJ and UCJ planned risk management interventions

Most of the interventions planned in SPJ assessments were also planned in UCJ assessments; 78% overlapped. Only in a few types of risk management was there a difference in the documentation of planned interventions: victim safety planning, limitation of movement on the ward (supervision); psychological assessment; nursing care (treatment); and observation (monitoring). The differences were usually small except for the latter where there was 19% overlap. Some risk management interventions were mentioned frequently (supervision in terms of limitation of movement outside the ward, treatment such as nursing care on the ward, medical assessment and medical treatment); others were seldom documented (victim protection and different kinds of acute coercion).

3.2.3. Planned and unplanned realized risk management interventions

For several types of risk management, most of the realized interventions (62% for all interventions) were not actually documented as planned.

3.2.4. Differences among risk management interventions

A total of 2638 risk management interventions were recorded in this study. The most frequent types of interventions were related to treatment, such as environmental/nursing care (865), meetings with a psychiatrist (366) and medication (275). Other common interventions were related to supervision in terms of restriction of movement outside the ward (337) and monitoring by observation (100).

Three different types of monitoring interventions were noted: observation, visitation and control of substance use. Monitoring interventions were documented as realized 187 times. Overall, 45% of the UCJ planned and 53% of the SPJ planned monitoring interventions were realized. Twenty-eight percent of the SPJ and UCJ planned monitoring interventions overlapped. Seventy percent of all realized monitoring interventions were not planned at all. Visitations were not mentioned in SPJ assessment. Control of substance use was more frequently realized according to plan, both in UCJ (62%) and SPJ assessments (75%), and there was complete overlap between assessments, indicating a unified view of need management.

Five different types of supervision interventions were documented: limitation of movement outside the ward, limitation of movement on the ward, limitation of social interaction, limitation of electronic communication and limitation of access to resources and belongings.

Supervision interventions were documented as realized 536 times. The UCJ planned supervision interventions were realized in 70% of cases, and in 90% of the SPJ planned cases. There was 90% overlap between SPJ and UCJ planned supervision interventions; 41% of the realized supervision interventions were not planned.

Four types of assessment interventions were documented: psychological, occupational, psychosocial and structured risk assessments. Assessment interventions were documented as realized 105 times; 80% of the UCJ planned and 67% of the SPJ planned assessment interventions were realized. Eighty-three percent of the SPJ planned assessment interventions were also planned in UCJ assessments; 44% of the realized interventions were not planned at all.

Seven different types of treatment interventions were documented: medication, psychotherapy, psychoeducation, environmental treatment/nursing care, medical assessment meetings with psychiatrist, occupational activities and other not specified. Treatment interventions were noted as realized 1672 times. Overall, 85% of the UCJ planned and 95% of the SPJ planned treatment interventions were realized. Ninety-six percent of the SPJ planned treatment interventions were also planned in UCJ assessments. Sixty-eight percent of the realized treatment interventions were not planned. A few treatment interventions were difficult to sort and hence were defined as “treatment other”. Examples of such interventions were increasing the manpower on the ward to ensure security, efforts to mitigate social isolation, patients demanding staff to lock their door to avoid escalation and limiting the outer surroundings to reduce stimuli.

Half of the UCJ planned and 80% of the SPJ planned victim protection interventions were realized according to documentation. Eighty percent of the SPJ planned interventions were also planned in UCJ assessments. Sixty-four percent of the realized interventions were not planned. Victim protection interventions were seldom documented.

Acute coercion interventions were not frequently used and only planned in UCJ assessments. The planned interventions were realized in half of the cases, but most often the realized interventions were not planned at all.

Most of the planned changes in security level and/or changes in the form of care were realized, 75% in UCJ assessments and 100% in SPJ assessments. All SPJ planned interventions were also planned in UCJ assessments. Twenty-two percent of all realized interventions were not planned.

All UCJ and SPJ planned police interventions were documented as realized. All SPJ planned interventions were also planned in UCJ assessments. Sixty-three percent of all realized police interventions were not planned.

4. Discussion

This study sought to evaluate the risk management interventions planned and realized in UCJ assessments and SPJ assessments and to what extent realized risk management interventions are planned.

Most of the planned risk management interventions were realized according to documentation, both in UCJ and SPJ risk assessments. The number of realized planned interventions was slightly higher for SPJ assessments compared with UCJ assessments. One might assume that it would be the other way around, that the UCJ planned interventions would be realized more often, considering that the clinicians' (also being the ones to execute such plans) own assessment of risk and need for interventions should be more easily communicated and accepted by other clinicians and themselves. There are naturally many more UCJ assessments than SPJ assessments in documentation of forensic care, which also means there is a statistically greater chance that the UCJ planned interventions are not realized. The risk management interventions specified in SPJ assessments were often more overarching than those in the UCJ planned interventions, which were often more specific. For example, observation could be suggested in a SPJ assessment but specified in terms of time, place and in what circumstances in an UCJ

assessment.

However, some of the planned risk management interventions were not documented as realized, something that was true for all types of interventions. This could be because some of the planned interventions might not be necessary or appropriate to realize as a result of changes in risk and other circumstances; other interventions might not be feasible because the patient refused to participate.

No major differences could be found in documentation of planned risk management interventions between SPJ and UCJ risk assessments. This is surprising considering one of the major criticisms of UCJ assessments are that they are less well documented and less easy to evaluate according to evidence-based practice standards of transparency stipulated by the National Board of Health and Welfare, a government agency in Sweden under the Ministry of Health and Social Affairs (<http://www.socialstyrelsen.se>). It could be that the long tradition at the clinic to conduct and communicate SPJ assessments to care staff, over time increased staff knowledge and improved their UCJ assessments. However, whether, the extent to which or how SPJ assessments influence UCJ assessments, or vice versa, was not investigated in this study. Still, the large overlap for the majority of the planned risk management interventions indicates a rather unified view of what professional risk assessors and clinicians consider appropriate risk management. The overlap could be explained by means of a successful mutual interaction or integration and acceptance of the SPJ assessment and management plan among clinicians. It could also indicate that the differences between these two approaches might actually be rather small for many of the different risk management interventions. An exception to the overall high overlap between SPJ and clinically planned interventions was monitoring observation. Some interventions were also only planned in UCJ assessments, such as limitation of movement on the ward, acute coercion interventions, visitation and some types of assessments. For example, visitations to patients' rooms on the wards are usually motivated by a specific suspicion or as part of the security routine on the wards (often done irregularly). It could be that the assessors in SPJ assessments do not have the same knowledge about the ward and are therefore less able to suggest some types of risk management interventions.

For several types of risk management, a majority of the realized interventions was actually not documented as planned. It may be that some interventions are less suitable for planning ahead (such as substance control, which is often unplanned to prevent the intervention from being predictable and hence manipulated) and/or tailored to deal with a specific acute situation. Acute coercion interventions are rare and used when the ordinary risk management interventions fail; they are most often not part of the ordinary risk management plans. Some types of interventions (visitation and coercion interventions) are not appropriate or even legal to plan ahead as part of a care plan and can only be used when acutely clinically motivated (National Board of Health and Welfare in Sweden, 2008). Some interventions can also be part of daily routine care and might therefore not always be documented as planned and/or realized, unless something out of the ordinary occurs. For example, at the study site, staff monitor all patients on the ward every 30 min as routine and recording every observation for every patient so many times every day would be impractical; thus, the observation interventions (monitoring) are realized but not recorded. SPJ assessments were often not planned, which can be explained by the clinic routine of having an external risk assessor plan and conducting SPJ assessments routinely. START assessments were part of a pilot project at the clinic during the time of the record review, and these assessments were planned according to the project plan rather than by staff, resulting in a lack of clinical documentation about planned START assessments. However, clinicians acting without a predetermined, documented and agreed-upon plan might increase risk of subjectivity and undermine the legal rights of patients, as well as mitigate quality control and follow-up since the reasons for interventions cannot be traced.

When attempting to evaluate risk assessments in terms of risk management plans and to what extent these are realized, there is little to compare with due to the lack of previous research and clinical evaluation guidelines. In one of the few studies, Singh, Desmarais, Sellers, et al. (2014) found that recommended risk management interventions were orally reported by assessors to have been realized in two-thirds of cases, although the type of intervention was not specified. In this study, about three-quarters of the UCJ and four-fifths of the SPJ planned risk management interventions were realized, showing a higher rate of fidelity to plan. Some interventions, such as restriction of movement outside the ward, are regulated by law and decided by the court, which could explain the high proportion of documented realized interventions. Other potential reasons for a high or low fidelity rate could be access to available resources, patient willingness to participate or not, staff availability and differences in staff perceptions about what specific interventions are important to reduce risk.

Primary prevention (e.g. assessments and treatments), secondary prevention (e.g. monitoring interventions) and tertiary prevention (e.g. acute coercion interventions) strategies were all noted in the data and support the assumption that reducing risk within a forensic in-patient setting needs to consider a wide range of perspectives and strategies.

The study has some methodological shortcomings that should be considered when interpreting the findings. The study population is small and differed in some ways from the national population of forensic patients. The type and frequency of planned and realized risk management interventions might therefore not be generalizable to the whole population of forensic patients in Sweden. Staff might also have defined and documented planned and realized risk assessment interventions differently, creating differences in the results. There could also be differences between what was clinically done and what was documented in the patient records, creating unreliability in the data. It is difficult to determine the importance of this type of bias due to a lack of systematic research of underreporting of different risk management interventions. There is, however, some indication of insufficient and inconsistent recording of specific details of realized interventions, on what grounds they are selected and also what the outcome is (O'Brien & Cole, 2004). One might speculate that some type of risk management interventions, like the use of coercion and forced medication, might be more accurately recorded than other interventions due to the specific legislation and related control by authorities (Kaunomäki et al., 2017; Maguire et al., 2017). However, even the documentation of coercion can sometimes be inconsistent and inadequate in forensic and in-psychiatric care (National Board of Health and Welfare, Sweden, 2017). The number of unique interventions varied from a few to hundreds for different types of interventions, meaning that differences in percentages can be caused by single interventions. For this reason, the frequency of every intervention planned and realized for different types of interventions were reported to promote transparency and understanding of the findings. The inclusion of frequencies also allows for making other calculations and comparisons. Separating what part of forensic care that is planned and realized in relation to risk and risk management as opposed to other treatment goals is not possible, or perhaps meaningful. Risk management relates to a wide range of problems associated with risk for adverse events. The Department of Health (2007) has stated that risk management interventions should be embedded in the day to day care. It may however be that other researchers would have defined the risk management interventions differently. The process of translating record data to a predefined scheme might also be a source of researcher interpretation bias. However, having a second researcher

reviewing randomly selected and anonymized parts of the data journals and controlling the selection and plotting of information to the predefined scheme was used to reduce interpretation and selection bias by the first author.

5. Conclusions

According to what was documented, most planned risk management interventions are realized in both structured risk assessments and unstructured clinical assessments. However, there is no previous research or national or international guidelines to suggest what constitutes good enough fidelity. The large overlap of planned interventions between the two types of assessments suggests a unified view of treatment and risk management needs among nursing staff, care teams and external risk assessors, which is presumably important to enable good care. However, most of the realized interventions were not planned, either in structured or clinical assessments. This means a large part of the care provided is not following a predetermined plan, potentially making it open to subjective clinical assessment and decision making, which research suggests is less accurate to deal with risk prevention. The lack of documented premeditation of realized risk management could also hamper the evaluation of such interventions. Different types of risk management interventions can vary in terms of how often they are planned and realized in structured risk assessments and clinical assessments, respectively. The implications of such variations need further investigation.

Implications and suggestions for further research

This study has evaluated in detail what is done in terms of risk management in a forensic care context, and whether such interventions are part of a risk management plan from SPJ risk assessments and/or unstructured clinical assessments or not. Further research and a debate about what constitutes reasonable levels of fidelity to risk management plans is needed. It would also be useful to investigate the relationship between SPJ risk assessment and unstructured clinical assessments and how these assessments influence each other, as a measure of the implementation of SPJ assessments and how such assessments influence and sync with other clinical assessments. A detailed description of what risk management interventions are actually planned and realized could also be a basis for further research on how different interventions actually mediate risk, protective factors and adverse events in clinical contexts, and a discussion about what interventions should be used in different populations and contexts. In order to connect specific risk management interventions to changes in patient behaviour and function and adverse events in future research, the definitions might need to be defined in more detail as suggested by the findings in this study. Addition of assessments and acute coercion interventions as categories and specifying subcategories may be helpful as violence prevention measures in forensic settings seem to cover a range of preventive strategies, responses to an imminent risk, as well as actions to limit the harm of violence. Previous research also indicates that the definitions and perceptions of effective risk management interventions to prevent violence might differ between SPJ risk assessors, clinicians and patients. This needs further investigation, as well as studies to investigate to what extent patients are included in planning and realizing such interventions.

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Appendix 1. Coding example

CATEGORY (MAIN AND SUB-CATEGORY)	DEFINITION	EXAMPLES (translated)	CODING DESCRIPTION
RISK MANAGEMENT INTERVENTION MONITORING	The preventive measure taken to mitigate an identified risk of an adverse event Surveillance interventions and plans to detect early warning signs to prevent relapse, continuous follow-up/control of identified signature risk signs. Scenario planning, self-observation and/or observation by others to detect early warning signs, meeting/interacting with staff/professionals, observation of psychiatric symptoms etc., visitation and control of substance use		Type of intervention was noted and sorted according to the definitions of the interventions, as well as the type of context of documentation (clinical and or SPJ assessment) and whether the intervention was planned (yes or no) and later realized (yes or no)
Monitoring: observation		Clinical note from a care team meeting: "A decision was made to increase the level of observation and to have staff allocated to the patient during meals". (Registered as intervention planned, clinically)	
Monitoring: visitation of room, clothes, body, belongings		Clinical note: "The patient's room was controlled today, and a broken lightbulb was found and removed". (Registered as intervention realized)	
Monitoring: control of substance use		SPJ assessment documentation (HCR-20); "...the patients continued adherence to refraining from using alcohol and drugs need to be monitored" Clinical notes; (testing of patients urine after a visit outside the hospital): "No un allowed substances found in today's substance control". (Registered as intervention planned in SPJ assessment and realized)	

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