Violence Risk Assessment Practices in Denmark: A Multidisciplinary National Survey

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Abstract:
With a quadrupling of forensic psychiatric patients in Denmark over the past 20 years, focus on violence risk assessment practices across the country has increased. However, information is lacking regarding Danish risk assessment practice across professional disciplines and clinical settings; little is known about how violence risk assessments are conducted, which instruments are used for what purposes, and how mental health professionals rate their utility and costs. As part of a global survey exploring the application of violence risk assessment across 44 countries, the current study investigated Danish practice across several professional disciplines and settings in which forensic and high-risk mental health patients are assessed and treated. In total, 125 mental health professionals across the country completed the survey. The five instruments that respondents reported most commonly using for risk assessment, risk management planning and risk monitoring were Brøset, HCR-20, the START, the PCL-R, and the PCL:SV. Whereas the HCR-20 was rated highest in usefulness for risk assessment, the START was rated most useful for risk management and risk monitoring. No significant differences in utility were observed across professional groups. Unstructured clinical judgments were reported to be faster but more expensive to conduct than using a risk assessment instrument. Implications for clinical practice are discussed.

Keywords:
Risk assessment, violence, multidisciplinary survey, forensic psychiatry, HCR-20, START, PCL-R, PCL-SV

INTRODUCTION

Over the past two decades, the number of forensic psychiatric patients has quadrupled in Denmark [1] and a number of recent violent assaults with a deadly outcome in the psychiatric system have highlighted the importance of assessing violence risk in a reliable and timely manner across all mental health settings where forensic and high-risk patients are assessed and treated. This growing national interest in violence risk assessment follows larger international developments in which both clinical and academic knowledge regarding best practice is quickly amassing [2, 3].

Traditional approaches to risk assessment, both in Denmark and abroad, have typically been based on unstructured clinical judgments (UCJ), in which a subjective, unguided assessment of risk is undertaken based on personal professional experience [4]. In recent years, however, considerable time

and effort has been dedicated internationally to advocating and validating the use of more systematic methods (see [5] for an overview). These methods include the application of actuarial risk assessment measures (for prediction) based on statistical algorithms and related computations of the probability for violence [4] and the use of tools designed to guide structured professional judgments (SPJ), in which a formalized professional assessment of clients' risk factors (and sometimes resources as well) is carried out [6, 7]. A large body of empirical evidence suggests that the use of such tools, as opposed to unstructured clinical judgments (UCJ), represents current best practice [6, 8].

Worldwide, a large number of structured violence risk assessment instruments and methods are now applied and an extensive body of international research has validated these instruments [9-11]. Controversy still exists however, regarding which methods and instruments have the best predictive validity with which populations [12, 13] and whether these instruments are viewed as equally useful across professional disciplines. One key issue in this debate has been whether actuarial instruments relying solely on static, actuarial factors perform better in predicting violence than structured professional judgment (SPJ) instruments which also recognize the importance of clinical and risk management factors in violence risk assessments (for an overview of this debate see [14]). A number of instruments incorporating actuarial measures into SPJ instruments have been developed and validated in an attempt to bridge this gap. The Short-Term Assessment of Risk and Treatability (START) [15] and the Historical, Clinical, Risk Management-20 (HCR-20) [16] are widely-used examples of these.

While considerable empirical and clinical progress in the measurement and application of violence risk assessment has been evident internationally over the past few decades, implementing evidence-based practices in the area of violence risk assessment has been a slow process in Denmark. This is for numerous reasons [17], not least of which is ongoing controversy regarding what appears to be a general preference for unstructured clinical judgments over the use of validated static and/or structured professional judgment instruments. In recent years, however, a small number of violence risk assessment instruments have been validated on Danish forensic populations [18-21] and with renewed focus on the importance of reliable risk assessments, it appears that systematic use of validated violence risk assessment instruments is increasing. Although violence risk assessment instruments have been used in varying degrees in Danish forensic wards for many years, particularly for assessing recidivism risk for legal purposes, in 2010, a large region in Denmark (Region Midt) began implementing the use of systematic structured violence risk assessment methods as a requirement across all their forensic hospital wards. This followed a key recommendation from a report composed by a number of regional experts in the field of forensic psychiatry, general psychiatry and child- and adolescent psychiatry [22]. Developments such as these suggest that the tides of Danish risk assessment may be changing. Although more and more organizations in Denmark are beginning to implement structured ways of conducting violence risk assessments, it is still unclear which methods are actually used in different professional contexts, which instruments are applied most often, and whether perceived cost and time play a role when clinicians choose whether or not to use a violence risk assessment instrument. Further, to the authors' knowledge, no studies in the Scandinavian countries to date have examined the perceived utility of different risk assessment instruments

for the respective purposes of risk assessment, risk management and risk monitoring [23], information which is crucial for organizations wishing to implement new violence risk assessment procedures. While some of these questions are beginning to be addressed in international research [24], detailed analyses which can inform local practice are still lacking in the Nordic context. In order to address some of these knowledge gaps, the current study aimed to explore lifetime and current violence risk assessment practices in Denmark as reported by different professional disciplines working with forensic and/or high-risk mental health patients.

METHODS

Sample

Potential respondents working in the mental health field in Denmark were invited to participate in the study if they were between 18 and 65 years of age and had experience completing at least one violence risk assessment on an adult person in their lifetime.

The final sample of N=125 included a combination of Danish psychologists (n = 42, 33.6%), psychiatrists (n = 45, 36.0%), nurses (n = 34, 27.2%), and other professionals such as social workers and support workers (n = 4, 3.2%). The demographic and clinical characteristics of the survey respondents are provided in Table 1 and further outlined in the results section, below.

Materials

The survey used in this study was a Danish translation of the shared instrument designed for use in a global survey of the application of violence risk assessment across 44 countries, the 'International Risk Survey' (IRiS)-study [24]. The survey took approximately 20-25 minutes to complete and was constructed using closed-ended questions informed by other empirical surveys and literature from the violence risk assessment field. The instrument was designed to capture information across a number of general themes, each corresponding to a set of specific questions. These included: respondent characteristics, lifetime violence risk assessment practices, current violence risk assessment practices, and perceptions of the costs and usefulness of violence risk assessment tools in practice. First, respondents were asked to report on a number of background characteristics including sex, age, race/ethnicity, professional discipline, approximate number of years of professional practice, and both estimates of the percentage of time spent engaging in different professional activities during the past 12 months, and the setting (e.g. forensic psychiatric hospital, correctional institution, private practice) of any clinical activities.

Respondents were also asked about their lifetime use of both structured and unstructured violence risk assessment methods, including the estimated frequency with which they used each of 18 formal measures to assess their adult clients' risk of violence (Likert scale, 1= Almost Never; 6= Always). The list of specific risk assessment instruments chosen for inclusion in the survey was constructed based on previous surveys of violence risk assessment practices and international literature reviews [24]. Respondents also had the opportunity to add information regarding the use of other local instruments not listed in the survey. Where relevant, respondents were also invited to report reasons for using particular measures and whether they

regularly received feedback regarding the accuracy and implementation of their risk assessments.

In addition to general lifetime use, respondents were asked to report more specifically on their violence risk assessment practices during the past 12 months. In order to estimate the resources and financial costs associated with the use of both structured and unstructured violence risk assessments, respondents were asked to identify the average length of time (in hours) needed to conduct each type of assessment along with an hourly wage in Danish kroners (DKK).

Finally, respondents were asked to rate the extent to which each of the violence risk assessment instruments they employed in the past 12 months was perceived as useful (Likert scale, 1 = Useless; 5 = Useful) for the purposes of: (i) assessing violence risk, (ii) developing violence risk management plans, and (iii) monitoring risk management plans, respectively.

Procedures

The Danish project was managed by the first author and conducted in accordance with the general procedures agreed upon by all international collaborators involved in the IRiS-study and approved by the institutional review board at the University of South Florida (Pro00007104). These general procedures are outlined in detail elsewhere [24]. Between January and February 2012, an English web-based survey was developed based on reviews of the international literature and piloted in selected countries using Qualtrics software. Professional translation of the finalized survey together with an introduction letter and three additional participations letters explaining the nature and purpose of the survey followed in the spring and summer of 2012. To confirm the accuracy of the Danish translation, all documents were then backtranslated by the first author.

Between September and November 2012, the translated survey was distributed electronically by the first author. Four national organizations were targeted to aid in the distribution of the survey: (1) a national association of forensic psychologists (Dansk Retspsykologisk Selskab), (2) a national association of psychologists in the hospital sector (Dansk Psykologforening – Hospitals-sektionen), (3) a national organization of psychiatrists (Dansk Psykiatrisk Selskab), and (4) a national organization of psychiatric nurses (Dansk Sygeplejeråd – Fagligt Selskab for Psykiatriske Sygeplejersker). In addition, four regional departments of forensic psychiatry employing a broad mix of mental health professionals were targeted (the departments of forensic psychiatry in Aarhus, Viborg, Aalborg and Middelfart). An additional three departments of forensic psychiatry exist in Denmark and are situated in the Eastern part of the country with Copenhagen in their catchment area (Sct. Hans in Roskilde, Glostrup and the maximum security facility in Nykøbing Sjælland). All three institutions were invited to participate but did not respond to provide a main contact person willing to distribute the survey. By targeting multidisciplinary departments and including national organizations and associations of psychiatrists, psychologists *and* nurses in this study, professionals working not only in forensic departments (a limitation of some earlier studies) but also other settings in which forensic and high-risk patients are assessed and treated (i.e. general hospitals, private practice, and non-psychiatric clinics) could be reached.

Following the Dillman Total Design Survey method [25], participation letters were sent via e-mail on a Friday (September 7, 2012) to the main contact person for each of the aforementioned organizations and departments. These contact people then distributed the e-mail, with a direct and active link to the survey, to all staff members. In the introduction to the survey, respondents were informed that the survey could be completed anonymously but that they had an option of providing their e-mail address, thus entering them in a draw to win one of eight cash prizes of 50 USD to be awarded at the end of the data collection period. No other incentives were given for participation. Two reminder e-mails, also with direct and active links to the survey, were sent in seven day increments after the initial e-mail to encourage participation, as was a final e-mail reminder. In addition to distribution by e-mail, a link to the survey was also posted on the member websites for the national organization of psychiatrists and the national association of psychiatric nurses. Finally, the link to the survey was posted twice on the Facebook group of the national association of psychiatric nurses and in their printed newsletter.

Between December 2012 and August 2013, the survey data was exported from Qualtrics into IBM SPSS Statistics Software for later analysis. Standard descriptive statistics were used to identify central tendencies and variation in the data and, where there were sufficient cell counts to allow it, tests of mean difference were used to explore comparisons across time, measures, and professional groups as outlined below.

RESULTS

Demographic and clinical characteristics of the sample

The characteristics of the full sample are provided in Table 1.

The sample consisted of 125 mental health professionals of whom the majority (67.2%) was female. Respondents were 44.9 years old on average, with 14.3 years of practice experience. Of the 125 respondents, 33.6% were psychologists, 36.0% were psychiatrists, 27.2% were nurses, and 3.2% had other occupations including social workers and support workers. The most common clinical setting in which respondents reported working within the past 12 months was in non-forensic psychiatric hospitals, followed by forensic psychiatric hospitals, non-forensic psychiatric clinics, and forensic psychiatric clinics. A small minority of respondents reported working in private practice, general hospitals, and correctional institutes. Across clinical settings, respondents reported spending over half of their time in the past 12 months doing clinical work.

General lifetime and current risk assessment practices

Overall, the respondents reported having conducted an average of 378 violence risk assessments during their lifetime, 41.3% of these using a structured risk assessment instrument. In comparison, over the past 12 months, respondents reported having conducted an average of almost 53 violence risk assessments, nearly half (47.3%) of which employed a structured risk assessment instrument. A paired samples t-test revealed that the estimated percentage of assessments carried out using a structured risk assessment tool was significantly higher during the past 12 months as compared to across the lifetime, $t(123) = 2.29$, $p = .024$, $d = .15$ suggesting a within-individual increase in the use of structured instruments over time.

In terms of the average characteristics of the examinees to which such risk assessments were applied, respondents reported that within the past 12 months, a majority of examinees were male (80.9%) with over half having

a primary diagnosis of psychotic disorder (51.9%). The two other major primary diagnoses were personality disorder (36.2%) and substance abuse disorder (27.8%).

Table 1. Demographic and clinical characteristics of respondents (n=125).

Demographics	
Men (*n*, %)	41 (32.80)
Age in years (*M*, SD)	44.90 (10.67)
Clinical discipline	
Psychologist (*n*, %)	42 (33.60)
Psychiatrist (*n*, %)	45 (36.00)
Nurse (*n*, %)	34 (27.20)
Other (*n*, %)	4 (3.20)
Years in practice (*M*, SD)	14.29 (8.83)
Clinical setting over past 12 months	
General hospital ($M_{\% Time}$, SD)	2.50 (11.45)
Private practice ($M_{\% Time}$, SD)	4.87 (18.36)
Non-forensic psychiatric hospital ($M_{\% Time}$, SD)	32.66 (43.59)
Non-forensic psychiatric clinic ($M_{\% Time}$, SD)	15.59 (32.01)
Forensic psychiatric hospital ($M_{\% Time}$, SD)	26.37 (40.09)
Forensic psychiatric clinic ($M_{\% Time}$, SD)	14.35 (30.98)
Correctional institute ($M_{\% Time}$, SD)	2.02 (12.92)
Other ($M_{\% Time}$, SD)	0.33 (2.04)
Professional responsibilities over past 12 months	
Practice ($M_{\% Time}$, SD)	55.88 (23.11)
Administrative duties ($M_{\% Time}$, SD)	26.17 (19.65)
Teaching or supervision ($M_{\% Time}$, SD)	11.94 (10.52)
Research ($M_{\% Time}$, SD)	2.90 (8.05)
Other ($M_{\% Time}$, SD)	3.11 (9.06)
Risk assessment history	
Risk assessments over lifetime (*M*, SD)	378.25 (1089.88)
Risk assessments with structured instrument over lifetime ($M_{\%}$, SD)	41.32 (40.09)
Risk assessments over past 12 months ($M_{\%}$, SD)	52.78 (117.33)
Risk assessments with structured instrument over past 12 months ($M_{\%}$, SD)	47.28 (40.90)
Characteristics of examinees over past 12 months	
Men ($M_{\%}$, SD)	80.99 (22.34)
Psychotic disorder ($M_{\%}$, SD)	51.88 (32.27)
Mood disorder ($M_{\%}$, SD)	5.48 (14.91)
Anxiety disorder ($M_{\%}$, SD)	5.04 (16.14)
SU disorder ($M_{\%}$, SD)	27.78 (32.04)
Personality disorder ($M_{\%}$, SD)	36.15 (32.13)
Other disorder ($M_{\%}$, SD)	6.60 (19.03)
Obtain feedback on outcome after RA ($M_{\%}$, SD)	43.18 (34.97)

Note. n = number of respondents; *M* = mean; SD = standard deviation; SU = substance use.

In less than half of all cases (43.2%) respondents reported having obtained information or received feedback regarding the subsequent behavior of an examinee after conducting a violence risk assessment. An independent one-way ANOVA comparison of professional disciplines revealed that although nurses reported receiving higher average levels of feedback (51.6%, SD =35.1) than both psychiatrists (41.6%, SD = 31.6) and psychologists (38.6%, SD = 37.5), these differences were not statistically significant, $F_{(2,118)}$ =1.40, p =.250, η_p^2=.023.

Use of structured and actuarial violence risk assessment instruments

Of the 18 listed violence risk assessment instruments in the survey, respondents reported using 11 different measures. In addition, respondents reported using a handful of additional measures not originally named in the survey (including local measures designed by themselves or their institution). However, only one additional measure was used by more than three participants. This tool, The Brøset Violence Checklist [26], is a well-known Norwegian short-term violence assessment instrument. The frequency of lifetime use and application during the past 12 months is listed for Brøset and each of the 11 named instruments in Table 2.

The five most commonly used instruments assessing violence risk were the Brøset Violence Checklist (Brøset) (36.0% lifetime use, 35.2% past 12 months), the Short-Term Assessment of Risk and Treatability (START) [15] (35.6% lifetime, 23.2% past 12 months), the Historical, Clinical, Risk Management-20 (HCR-20) [16] (28.0% lifetime, 23.3% past 12 months), the Psychopathy Check List Screening Version (PCL:SV) [27] (19.2% lifetime, 16.0% past 12 months), and the Psychopathy Check List-Revised (PCL-R) [28] (18.4% lifetime, 12.8% past 12 months). Brøset, START and HCR-20 are classified as SPJ instruments. The PCL:SV and the PCL:R were originally not developed as risk assessment tools but are currently often used to assess violence risk in association with SPJ tools.

In total, 78 respondents reported on their reasons for using particular risk assessment instruments. Reasons for use for the five most commonly reported measures are reported in Table 3. For both Brøset and the HCR-20, respondents most commonly reported using the measures for the combined reason that they were both required by their organization, and that the respondent had a personal preference for the measure. In contrast, the most common reason reported for using the START was that it was a requirement, with slightly lower tendencies to also report use due to personal preference. Response sets for the PCL-R and the PCL:SV were more varied, with equal numbers reporting use due to requirements and combined reasons for the PCL:SV.

Perceived utility for assessing, managing and monitoring risk

Respondents who reported having used formal risk assessment instruments over the past 12 months were asked to specify the purposes for which they used the instruments (assessing risk of violence, developing risk management plans, and/or monitoring risk management plans) and to rate how useful they found these instruments for those purposes. Table 4 reports the results for the five most commonly used instruments in Denmark.

As illustrated in Table 4, all five measures were used most commonly for the purpose of risk assessment. However, a number of respondents

Table 2. Risk assessment instrument frequency use by respondents over their lifetime and in the past 12 months (n =125).

Risk assessment instrument	Lifetime use n (%)	Frequency of use over lifetime *M* (SD)	Use over past 12 months n (%)	Frequency of use past 12 months *M* (SD)
Brøset	45 (36.00)	4.14 (1.60)	44 (35.20)	4.26 (1.39)
HCR–20	35 (28.00)	3.97 (1.77)	29 (23.20)	4.75 (1.43)
LSI–R	1 (0.80)	1.00 (–)	0 (0.00)	– (–)
PCL–R	23 (18.40)	3.00 (1.60)	16 (12.80)	3.56 (1.75)
PCL:SV	24 (19.20)	4.2 (1.69)	20 (16.00)	4.30 (1.53)
RAMAS	1 (0.80)	1.00 (–)	1 (0.80)	1.00 (–)
RM2000	1 (0.80)	1.00 (–)	0 (0.00)	– (–)
SAPROF	1 (0.80)	3.00 (–)	1 (0.80)	3.00 (–)
START	32 (35.60)	3.25 (1.76)	29 (23.20)	3.50 (1.77)
V–RISK–10	4 (3.20)	2.25 (1.50)	2 (1.60)	1.50 (0.71)
VRAG	4 (3.20)	3.25 (2.21)	2 (1.60)	4.00 (2.83)
VRS	5 (4.00)	3.00 (1.41)	3 (2.40)	3.00 (1.41)

Note. n = number of respondents; *M* = mean; SD = standard deviation; HCR-20 = Historical, Clinical, Risk Management-20 [16]; LSI-R = Level of Service Inventory-Revised [31]; PCL-R = Psychopathy Checklist Revised [28]; PCL:SV = Psychopathy Checklist Screening Version [27]; RAMAS = Risk Assessment Management and Audit Systems [32]; RM2000 = Risk Matrix 2000 [33]; SAPROF = Structured Assessment of Protective Factors [34]; START = Short-Term Assessment of Risk and Treatability [15]; V-RISK-10 = Violence Risk Screening-10 [35]; VRAG = Violence Risk Appraisal Guide [36]; VRS = Violence Risk Scale [37]. Frequency of use was measured using a 6-point Likert scale (1 = almost never; 6 = always).

Table 3. Reasons for use reported for the five most common measures used in the past 12 months (n=78).

	Required by organization *n* (%)	Personal preference *n* (%)	Combination of both *n* (%)
Brøset	22 (44.00)	3 (6.00)	25 (50.00)
HCR–20	9 (32.10)	3 (10.70)	16 (57.10)
START	16 (57.10)	2 (7.10)	10 (35.70)
PCL–R	4 (25.00)	6 (37.50)	6 (37.50)
PCL:SV	9 (45.00)	2 (10.00)	9 (45.00)

Table 4. Risk assessment instrument use and perceived utility in risk assessment, risk management, and risk monitoring over the past 12 months for the five most commonly used instruments (n =88).

Risk assessment instrument	Risk Assessment		Risk Management		Risk Monitoring	
	Use *n* (%)	Perceived usefulness *M* (SD)	Use *n* (%)	Perceived usefulness *M* (SD)	Use *n* (%)	Perceived usefulness *M* (SD)
Brøset	40 (45.45)	4.05 (0.71)	28 (31.82)	3.64 (0.91)	21 (23.86)	3.76 (0.99)
HCR–20	27 (30.68)	4.37 (0.84)	18 (20.45)	4.39 (0.78)	8 (9.09)	3.63 (1.19)
START	26 (29.55)	4.27 (1.08)	17 (19.32)	4.88 (0.33)	14 (15.91)	4.43 (0.85)
PCL–R	16 (18.18)	4.13 (0.96)	10 (11.36)	3.50 (0.85)	4 (4.55)	3.50 (1.73)
PCL:SV	19 (21.59)	4.05 (0.85)	15 (17.05)	3.07 (0.88)	6 (6.82)	3.33 (1.37)

Note. n = number of respondents; *M* = mean; SD = standard deviation. Percentages based on n= 88 respondents who reported completing at least one structured risk assessment during the past 12 months. Perceived utility was measured using a 5-point Likert scale (1 = useless; 5 = useful).

also reported applying the measures to develop and monitor violence risk management plans. Overall, utility ratings were relatively positive (typically in the 'somewhat useful' to 'useful' range), although some measures were reported to be more useful on average for particular purposes than others; whereas the HCR-20 was reported most useful out of the five most commonly used measures for risk assessment, for example, the START had the highest utility ratings for the purposes of risk management planning and monitoring. Interestingly, although the Brøset Violence Checklist was the tool used most frequently for all three purposes, it did not receive the highest utility ratings. No statistically significant differences in utility ratings for risk assessment, management, or monitoring were observed for any measure across professional groups, $p > .05$.

Time and cost of conducting risk assessments

In addition to reporting on the frequency and utility of different instruments, respondents were also asked to report the average number of hours spent during the past 12 months per risk assessment, both for assessments based on unstructured clinical judgment and those using structured risk assessment instruments. In estimating this time commitment, respondents were asked to include time dedicated to conducting interviews, obtaining and reviewing records, coding the tools, and writing reports. Respondents also provided a corresponding average hourly cost in Danish kroners for conducting such assessments. On average, respondents reported spending 1.43 hours (SD = 1.06, n =30) conducting an unstructured clinical judgment assessment and an average of 5.45 hours (SD = 6.09, n=58) conducting a structured assessment using a risk assessment instrument. In terms of financial costs, this translates to a slightly higher mean hourly cost of 349.87 DKK (SD = 139.90) for conducting an unstructured violence risk assessment compared to a mean hourly cost of 288.80 DKK (SD = 140.55) for use of a structured risk assessment instrument, $t(86) = 1.95$, $p = .563$, $d = .44$.

DISCUSSION

In recent years there has been growing attention to the use of risk assessment instruments to prevent violence and to guide risk management planning and monitoring, both in Denmark and abroad. Although several forensic departments in Denmark now routinely conduct violence risk assessments using either unstructured clinical judgments or structured risk assessment instruments, knowledge regarding national violence risk assessment practices across settings and professional disciplines is limited. As part of a large international investigation exploring violence risk assessment in 44 nations, this study surveyed a broad range of mental health professionals working in a variety of clinical settings across Denmark in order to develop a clearer picture of the general use, utility, and costs of violence risk assessment in this country.

The results indicate that violence risk assessment practice is relatively pervasive. Respondents reported having completed a large number of violence risk assessments across their lifetime, and an average of more than 50 each during the past 12 months. Although the majority of these assessments are unstructured and therefore not in line with what guidelines developed internationally regard as best practice [6, 8], the proportion of structured to unstructured assessments appears to be on the rise (47% in the past 12 months compared to 41% across the lifetime, a significant

increase). This might be explained in part by the 2010 policy change within one of the large forensic departments in Denmark (Region Midt) which made the use of several structured risk assessment instruments a requirement [22]. Even so, the majority of the respondents' clinical time was not spent in dedicated forensic settings, but rather, in non-forensic hospital settings. This finding highlights the danger of focusing only on violence risk assessment practices in forensic departments and clinics, and underlines the need for training in the use and interpretation of violence risk assessment instruments for clinicians and other staff members working outside the walls of dedicated forensic settings (for example, in general hospitals, institutions and group homes). With more forensic and high-risk patients being placed outside forensic hospitals where staff members may not be trained to deal with violence risk issues, and where they lack violence risk assessment instruments to guide their risk management planning and monitoring, the danger of violent assaults is likely to increase.

Violence risk may be particularly heightened in light of the discouraging finding from the survey that in only 43% of cases did the respondents report having obtained any kind of information or received feedback on the accuracy of their risk assessment after having completed it. Research shows that clinicians benefit considerably from feedback regarding the predictive validity of their risk assessments of forensic patients [29]. Establishing transparent and effective risk communication systems in settings where risk assessments are part of the daily work is thus crucial. As has been noted in the risk assessment instrument literature [30], re-assessments are also vital if risk assessment instruments are to be of use in risk management planning and risk monitoring. If clinicians receive no feedback on their examinees' subsequent behaviors, problem areas and/or resources, valid re-assessments are difficult to conduct and risk assessments are rendered less useful in daily clinical work. The survey results showed that nurses received higher average levels of feedback than the other professional groups, although not significantly more. This might be due to the fact that nurses often spend more time with patients on a daily basis (including night shifts) in hospitals wards (both forensic and non-forensic) than both psychiatrists and psychologists. However, the finding that less than half of all respondents' risk assessments were followed by such feedback suggests that there is considerable room for improvement in this area in Denmark and that developing structured risk assessment communication systems should be a priority for the future.

A number of encouraging findings also emerged from the study, however, including the fairly high utility ratings respondents reported for the risk assessment instruments applied in the past 12 months. The Brøset Violence Checklist was the instrument most often used for risk assessment, management, and monitoring, however, it was not the mostly highly rated for any of these purposes. Of the other four measures, the HCR-20 was the instrument most commonly used for risk assessment, with the START used almost as frequently. Both instruments were rated, on average, as 'somewhat useful' or 'useful' for this purpose, with the PCL-R the PCL:SV, and Brøset following. The HCR-20 was also the instrument out of these four that was most commonly used for risk management, again with the START a close second. However the START was rated more useful on average for this purpose than the HCR-20, Brøset, the PCL-R and the PCL:SV. After Brøset, the START was the most commonly used instrument for risk monitoring, for which its utility was rated much higher than all of the other tools. This may be because the START instrument attaches importance to more dynamic factors and to a larger extent than the HCR-20, and is also used

for shorter-term risk assessments and hence designed to be conducted more frequently. It is thus not surprising that the START is rated much more useful for risk management planning and risk monitoring than the other instruments. These findings have important implications for the practical choice of risk assessment instruments. If a clinician is conducting a simple one-time assessment of violence risk, these results suggest that the HCR-20 might be the most useful choice for this purpose. But if a risk assessment instrument is to be implemented in an organization or context where it is to guide risk assessment, risk management planning *and* risk monitoring, the START appears to be the best overall choice in Denmark at present, based on the data collected in this study.

When considering violence risk assessments of forensic and high-risk patients as a whole, the debate as to whether to rely on unstructured clinical judgments or use structured risk assessment instruments should have been put to rest a long time ago, as most best-practice recommendations and clinical guidelines for psychiatrists, psychologists and nurses internationally point to the use of instruments for assessing violence [6, 8]. However, as this study shows, over half of reported risk assessments done in Denmark are still conducted without the guide of a risk assessment instrument. When investigating the time required to conduct structured and unstructured risk assessments it is clear that one reason for this might be because it takes clinicians much longer to conduct a structured risk assessment using an instrument than it does relying on unstructured clinical judgment alone. Surprisingly, however, this study shows that it is less costly to conduct a violence risk assessment with a structured assessment instrument per hour than without. This might be a reflection of a higher mean salary for the professional groups most likely to rely on clinical judgments, but is nonetheless a strong argument in support of implementing structured risk assessment instruments into daily work with forensic and high-risk patients.

Limitations

This study provides an important first glimpse into general violence risk assessment practices in Denmark. However, future research would benefit from attempts to address some of the limitations of this survey. First, standard challenges associated with the use of survey methods including sampling coverage, potential non-response bias, and respondent comprehension apply. In addition, the sampling method used in both the Danish study and its international counterparts does not allow for estimation of response rate, as many respondents held multiple memberships in the organizations used to disseminate the survey, and non-members may also have completed the survey using general links posted on the websites and Facebook pages of

some participating organizations [16]. Without response rate information, it is difficult to assess the generalizability and representativeness of the sample. This is particularly the case as the final sample was rather small and 'other professionals' were poorly represented. While the high representation of psychologists and psychiatrists in the sample might be due to the fact that risk assessments are typically the practice of these professionals, the rise of interdisciplinary clinical teams in many mental health settings may necessitate casting a wider sampling net in future studies. Since the START was developed by a team including a nurse to use in interdisciplinary teams, nurses were well represented in this study. Another potential limitation of the survey is that because it was part of a larger international study, the materials were not piloted specifically on a Danish population before dissemination (although they were piloted in other samples). This may have led to some respondent-related measurement error such as comprehension problems or misunderstanding of questions. Finally, the small sample size limited the possibilities to explore detailed differences between professional groups and specific risk assessment tools, due to low cell counts and lack of statistical power. Follow-up studies should endeavor to broaden and increase the size of the sample, and to collect information that would allow for assessments of response bias and generalizability.

CONCLUSIONS

The results of this study suggest that violence risk assessments conducted across the mental health field in Denmark are relatively frequent but highly varied in form. Although the majority of these assessments are still unstructured, the promising utility ratings and lower hourly costs reported for the five most commonly used structured instruments provide hope that change is coming. Additional Nordic and international studies aimed at exploring the use and usefulness of various methods for assessing violence risk, and their associated benefits and challenges for clinical practice are needed.

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