Characteristics and Needs of Long-stay Forensic Psychiatric Inpatients: A Rapid Review of the Literature

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Abstract

This rapid review summarises currently available information on long-stay patients within forensic mental health settings. The definition, prevalence, characteristics and needs of such patients are addressed, together with provision of services for them. Sixty nine documents from 14 countries were identified. There was no agreement in the literature on what constitutes 'long-stay'. Reports on characteristics of long-stay patients and factors predicting long-stay were inconsistent. Factors most frequently associated with longer stay were seriousness of index offence, longer previous prison sentence, psychotic illness, symptom severity and having no close relationship. Although some countries are developing specific long-stay services, there is presently no consensus on what might constitute 'best practice' in such settings.

Forensic-psychiatric services offer care to patients who suffer from a mental disorder and have committed an, often serious, offence. The purpose of such services is twofold: to treat the disorder and alleviate suffering for the patient, but also to reduce the risk of re-offending and so protect society from the mentally disordered offender. This can cause tensions and dilemmas for the practitioner who has potentially incompatible responsibilities to the patient, third parties and the wider community. This dual role raises some ethical dilemmas, particularly as patients in forensic-psychiatric settings often have long admissions (Völlm, Bartlett & McDonald, 2016).

Detention in forensic care is generally not time-limited and discharge depends on whether the individual is deemed to have made sufficient progress towards no longer presenting a risk. It has been suggested that a significant proportion of mentally disordered offenders require long term, potentially life-long, forensic psychiatric care (Melzer et al., 2004; Vorstenbosch, Bouman, Braun & Bulten, 2014), and that these long-stay patients are characterized by complex psychopathology, noncompliance in therapy and a high risk of criminal recidivism (e.g. Schel, Bouman & Bulten, 2015). This group may not benefit sufficiently from existing treatment options, show poor treatment progress and an associated high risk of recidivism, and so be unable to move towards less restrictive settings or back into community. Their needs may not be met by existing service provision designed for faster throughput (Völlm et al., 2016), and issues around service organisation and societal attitudes may also prevent them from being rehabilitated (Davoren et al., 2015).

There are concerns that an extensive period of forensic inpatient care can be detrimental, seriously restricting patients' autonomy, quality of life and their perspectives for future independent living. Such long-stays raise serious ethical issues and some have argued may constitute an infringement of human rights. Furthermore, detention in secure settings is cost-intensive; for example, costs of maintaining a patient in high secure care has been estimated to be as high as £275,000 per year in the UK (Rutherford & Duggan, 2007) and approximately €190,000 per year in the Netherlands (Ministerie van Veiligheid en Justitie, 2015). There is also the possibility that a significant number of long-stay forensic patients receive treatment in an inappropriate and over-restrictive care setting. In the UK, for example, several studies have highlighted that between one third and two thirds of patients resident in high secure settings do not require that level of security (e.g. Bartlett, Cohen, Backhouse, Highet & Eastman, 1996; Maden, Rutter, McClintock, Friendship & Gunn, 1999; Pierzchniak et al., 1999; Reed, 1997). The Tilt report, commissioned to review the security at all three English high secure hospitals, concluded that about one third of the patients could be safely managed in lower levels of security (Tilt, Perry, Martin, McGuire & Preston, 2000).

There is currently no evidence synthesis that provides a comprehensive overview of the characteristics and needs of this important patient group, or on the factors that predict its membership. Summary information is also lacking on how such a long-stay group is defined, with no apparent agreement on a threshold. In Germany, for example, 13.7% of those in forensic inpatient care in 2005 had been in treatment for more than 10 years (Dessecker, 2008). In the Netherlands in 2013, the average duration of treatment was reported as nine years (Vorstenbosch et al., 2014). In the same year, 8.0% of patients detained in special forensic hospitals had official long stay status, although a further 5.2% of those detained within the regular TBS hospitals had

been in treatment for at least 15 years and so were more or less hidden in the system (Nijman, Lammers, Vrinten & Bulten, 2017). In the UK, 27% of patients in high and medium secure forensic services had been in treatment for 10 years or longer in 2007 (Rutherford & Duggan, 2007). The situation is made more complex because length of stay (LoS) may be measured in three different ways, each with advantages and disadvantages (Butwell, Jamieson, Leese & Taylor, 2000). These are (a) admission sample (all patients admitted during a particular period included with LoS calculated from admission to discharge), (b) census sample (all patients resident in the setting of interest on a particular date with LoS calculated from date of admission to this time point), and (c) discharge sample (all patients discharged during a particular period with LoS calculated from date of admission to this discharge date). Results obtained from the three approaches are not directly comparable.

The objective of this rapid review is to summarise what is currently known on the characteristics and needs of long-stay forensic inpatients. Six specific research questions were identified:

1) How is long-stay defined in forensic inpatient settings?

2) What proportion of forensic inpatient populations can be considered as ‘long-stay’?

3) What are the characteristics of long-stay forensic inpatients?

4) What factors predict LoS in forensic inpatient populations?

5) What are the needs of this patient group

6) What service provision exists for them?

Method

The characteristics and needs of long-stay forensic inpatients were investigated using a rapid review approach. Rapid reviews are an emerging type of knowledge synthesis which aims to inform health-related policy decisions and discussions, especially when there is a need for immediate information (Lal & Adair, 2014). While still aiming to produce valid conclusions, the rapid review represents a streamlining of the conventional systematic review process, with certain components being simplified or omitted to produce information in a short period of time (Tricco et al., 2015) by, for example, the development of a limited research question or use of truncated literature searching (Cameron, Watt, Lathlean & Sturm, 2007). There is, however, no universally accepted definition of what constitutes a rapid review.

The limitations of the rapid review compared to the full systematic review include absence of a universally agreed methodology and a tendency towards poor quality reporting (Tricco et al., 2015). Nonetheless it has been argued that the rapid review can address a need for timely and trustworthy evidence (Khangura, Konnyu, Cushman, Grimshaw & Moher, 2012), and a comparative study by Watt et al., (2008) found that the essential conclusions of the rapid and full reviews which they evaluated did not differ extensively, even though the scope of the rapid reviews was substantially narrower.

The approach adopted in the current study was to follow Lal and Adair (2014) who used methods similar to Khangura and colleagues' seven-step process for conducting a rapid review (Khangura et al., 2012). These steps can be summarised as (1) identification of the research question in collaboration with the knowledge user, (2) development of the search strategy, (3) identification of relevant studies, (4) screening and selection of studies, (5) conceptual

mapping/identifying topical areas, (6) charting information, and (7) report production (Lal & Adair, 2014).

The objective for this review and the six research questions were developed in collaboration with the research team and following consultation with the Service User Reference Group of a large, multi-centre, externally funded study on long-stay in forensic care in the UK (Völlm et al. 2017).

A keyword-based search strategy was developed based on the concepts of forensic psychiatric inpatients, longstay/length of stay, and patients' needs (see Appendix) and was used to search three bibliographic databases (Medline, Embase and PsycINFO) from 1980 to December 2016. A search for relevant theses was carried out using the Proquest database. Google was searched separately and the first 150 hits examined. A check for additional articles that might meet the inclusion criteria was made by examining the references cited in all included documents. No restrictions were placed on study design, publication type or language of publication.

All hits were initially screened against the inclusion and exclusion criteria (Table 1) by inspection of title and abstract. Hard copies were then obtained of all articles which were identified in the screening process as potentially relevant, or for which there was insufficient information within the title and abstract to allow a decision to be reached; these were then inspected and selected for inclusion against the criteria in Table 1. Screening and selection were carried out by a doctoral-level and a masters-level mental health researcher (NH, NC). A third doctoral-level mental health researcher (BV) who is also an experienced forensic psychiatrist adjudicated in cases of disagreement.

[Table 1 about here]

Each included document was read carefully and any text or data relevant to the review's objective were marked. Data were extracted (NH & BV) separately in relation to each of the research questions as follows. For Question (1) any prospectively defined LoS threshold used in a research study to define a long-stay group (or to differentiate a long-stay subgroup from a shorter-stay subgroup) was extracted. For Question 2, the proportions of prospectively defined long-stay patients in relation to the population were extracted. For Question 3, any quantitative data on patient characteristics in relation to length of stay were extracted, including those relating to differences between long(er)-stay and shorter-stay subgroups. For Question 4, the focus was on factors that are predictive, rather than simply characteristic, of length of stay. Although a considerable number of characteristics have been found to differentiate longer-stay forensic patients from those who experience shorter stays, many of these are confounded and so cannot be seen as unique predictors; thus only those factors shown to be predictive in multivariate statistical analysis were extracted. For Question 5, any information on the needs of this patient group, and for Question 6 on service provision for them was recorded.

Where data were presented qualitatively rather than quantitatively, the marked text was analysed using thematic analysis (Braun & Clarke, 2006). All authors contributed to the conceptual mapping, tabulation, and development of a narrative synthesis of relevant material from the included documents.

Results

Characteristics of Included Documents

The review process is summarised in Figure 1. A total of 69 primary documents were identified for inclusion comprising 59 papers published in peer-reviewed journals, five reports, three theses and two conference abstracts (Table 2). Fourteen countries were represented (68% countries within Europe; 19% USA/Canada; 7% Australasia).

[Figure 1 about here]

[Table 2 about here]

Definitions of 'long-stay' in forensic patient populations

Twenty studies used a prospectively chosen LoS threshold to define a long-stay group or to differentiate long-stay and shorter-stay subgroups. Six countries were represented with sampling periods ranging from 1972 to 2014. All had predominately male samples with the exception of one all-female study (Long & Dolley, 2012).

The differentiating threshold varied between studies. Hospitalisation in excess of ten years was used in studies in Israel (Bauer, Rosca, Grinshpoon, Khawalled & Mester 2006), in Malaysia (Fong et al., 2010) and in Germany (Dessecker, 2008; Ross, Querengässer, Fontao & Hoffmann, 2012). A shorter threshold of two years was used in two studies in Ireland (O'Neill et al., 2003; Wright, O'Neill & Kennedy, 2008).

In the UK, the care provided for forensic psychiatric inpatients is categorised by the level of security provided. For high secure samples, the threshold used to define long-stay has been taken as hospitalisation in excess of fifteen years (MacKay & Ward, 1994), eight years (Dell,

Robertson & Parker 1987), and ten years (Edworthy & Völlm, 2016). For medium secure samples, a threshold of five years was used in two studies (Edwards, Steed & Murray, 2002; Edworthy & Völlm, 2016), and two years in eight studies (Heap, 2003; Kennedy, Wilson & Cope, 1995; Maden et al., 1999; McKenna, 1996; Mohan, Murray, Taylor & Steed, 1997; Ricketts, Carnell, Davies, Kaul & Duggan, 2001; Shah, Waldron, Boast, Coid & Ullrich, 2011; Wilkes, 2012). A similar figure of 21.6 months was used by Long & Dolley (2012) based on a median split in their medium secure sample.

The point beyond which forensic inpatients have been considered as long-stayers has thus ranged from two to fifteen years in these studies, demonstrating the lack of consensus in how best to define long-stay for this patient group. UK researchers have, however, been relatively consistent in selecting a threshold of two years for medium secure samples, presumably in keeping with the original guidance from the UK government that medium secure units were intended to provide care for patients for whom there was a good prospect of discharge within 18 months to two years of admission (Department of Health and Social Security, 1974).

Proportion of forensic patients that are long stay

Seventeen studies reported on the proportion of long-stay patients in relation to the overall population or sample. Five countries were represented with sampling periods that ranged from 1972 to 2014. Percentages are summarised in Table 3. Summary statistics on actual length of stay are not presented because reporting inconsistencies prevent any useful interpretation. For example, some studies provide mean values for LoS whereas other provide medians, the latter arguably a better measure of central dispersion for a variable that commonly has a non-normal (skewed) distribution.

[Table 3 about here]

Inspection of Table 3 reveals considerable variation in these figures which likely reflects the diversity of the studies. Heterogeneity arises from differences in the threshold used to define long-stay, in the sampling timeframe, in the forensic mental health practices in different countries, and whether the study focused on an admission, discharge or census sample. Percentages ranged from 2.6% for an admission sample in Ireland (Wright et al., 2008) to 66% for a UK combined high and medium secure population (Rutherford & Duggan, 2007), both using a two-year threshold.

Considerable variation was also evident between studies of similar populations. For example, three UK studies each examining broadly similar numbers of patients discharged from a medium secure unit reported proportions with LoS >2years as 9% (Maden et al., 1999, Greater London, n=234, timeframe 1980-94), 33.6% (Shah et al., 2011, East London, n=259, timeframe 1999-2008) and 45% (Wilkes, 2012, West Midlands, n=198, timeframe 2001-2011).

Characteristics associated with long-stay patients

Forty studies examined the characteristics associated with long-stay forensic inpatients, either by comparison with a shorter-stay group or in relation to length of stay recorded as a continuous variable. Given the lack of consensus between (and within) countries on how long-stay patients are defined, all 40 studies are considered together in this section in an attempt to provide an overall picture of the patient characteristics most strongly associated with long-stay status, however defined.

A total of 90 diverse variables were examined in the 40 documents. The range of characteristics explored was broad, encompassing the nature of the Index Offence that preceded

admission; other admission details; diagnosis and symptoms; demographics; personality traits; and the patients' personal, criminal, psychiatric and treatment histories. The characteristics most often examined were those related to diagnosis, gender, age and nature of Index Offence. Figure 2 summarises the 48 variables which were examined by more than one study.

[Figure 2 about here]

Characteristics most commonly found as positively associated with long-stay status concerned the gravity of the offence that precipitated admission. These included an Index Offence of murder or homicide (eleven studies, with two studies reporting no significant association), the severity of the offence (eleven studies, with five reporting no association), and having an Index Offence that was violent (seven studies, with four reporting no association). In contrast, the number of previous convictions had no significant association in seven out of the eight studies which tested for this, in keeping with the finding by Sedgwick, Young, Das & Kumari (2016) that it is the severity rather than the extent of offending that is implicated in the length of time mentally disordered offenders remain in services. Inspection of Figure 2 reveals a number of characteristics where the direction of the association was inconsistent between studies. For example, the association between a diagnosis of schizophrenia or psychotic disorder and long-stay status was positive in nine studies, negative in two, and showed no association in nine. The association between male gender and long-stay status emerged as the most ambivalent, being positive in three studies, negative in three, and showing no association in eleven. Such inconsistencies may arise from the diversity of settings within countries, and from differences in forensic mental health practices between countries; they may also arise from diversity in the

populations studied where these exclude, for example, specific mental disorders, personality disorder, or specific offences. Taking these inconsistencies into account, one broad interpretation of Figure 2 is that the characteristics most commonly found in long-stay forensic inpatients, compared to those who are discharged earlier, are having an Index Offence that is more violent or severe, a diagnosis of schizophrenia or psychotic disorder, being younger when admitted, having more severe symptoms, having a longer history of psychiatric treatment, having a history of substance abuse, and being more likely to experience cognitive or organic deficit.

Five studies reported on long-stay samples without a comparison group. Bauer et al. (2006) found the dominant characteristics for 65 patients in Israel who had been forensic inpatients for more than ten years were: schizophrenia or psychosis (89%); index offence of assault against family members (37%), male (96%) and aged 45-65 yrs. Vaughan (2000) reported that the profile of medium secure inpatients staying longer than two years in an area in the south of the UK included: having a serious index offence against the person; long term institutional care; a poor response to intervention; enduring mental health problems; continuing dangerousness/risk to self; risk of absconding from a less secure environment; and weak community/family links. A third study, a case note review of high secure inpatients in the UK with a length of stay of at least 15 years, identified the three main reasons for remaining in secure care were (a) a perception of dangerousness, (b) belief that some patients were institutionalized and wished to remain, and (c) that they remained mentally disordered and in need of treatment (MacKay & Ward, 1994). In a study in Ireland over an extended period (1850-1995), Gibbons, Mulryan and O'Connor (1997) found insanity acquittees (i.e. those found not guilty by reason of insanity) were commonly single males from rural areas, aged in the mid-thirties who had been charged with violent crime. The majority had a major psychiatric

illness. Female insanity acquittees were relatively few in number and were as likely as males to have been charged with violent crime, especially directed towards their own children.

Only one study focussed on a low security setting. Beer, Tighe, Ratnajothy and Masterson (2007) conducted a case series over 8 years of all 86 patients admitted to and discharged from one UK low secure unit. Here the characteristics associated with longer stay were the presence of physical assault, physical health problems and anxiety symptoms (as implied by participation in a Relaxation group), whereas shorter stay was associated with participation in a current affairs group (which the authors suggest may indicate higher functioning and a readiness to move on).

Factors predicting length of stay

Eighteen of the 40 studies used multivariate analyses to identify factors that can be considered to be predictive, rather than simply characteristic, of length of stay. The majority used regression techniques in attempt to isolate key predictive factors. Ten factors emerged as significant predictors in more than one study. The seriousness of the Index Offence was a strong predictor of longer stay in terms of its severity (five studies), whether it was murder or homicide (seven studies), violent (two studies), or sexually motivated (two studies). A diagnosis of schizophrenia or psychotic disorder predicted longer stay in four studies and shorter stay in one. In terms of personal relationships, there was limited evidence that having no ongoing close relationship predicted longer stay (two studies). Experience of employment before admission to forensic psychiatry predicted shorter stay (two studies). Severity of illness or symptoms predicted longer stay in two studies. A longer previous prison sentence duration also predicted longer stay (two studies). Being male predicted longer stay in one study and shorter stay in another.

Twenty five factors emerged as predictive in just one study. Those predicting longer stay had been admitted from a non-secure hospital; seclusion or restraint during stay; history or risk of absconding; severe educational problems in childhood; larger number of victims; higher number of inter-ward transfers; charges not proceeded with; aggressive/violent behaviour during stay; cognitive or organic deficit; history of psychiatric treatment; non-compliant with treatment; number past convictions; poorer education; unmarried; younger age on admission/offence; younger at first conviction; and higher scores on the DUNDRUM-1 triage security scale (Flynn, O'Neill & Kennedy, 2011). Those predicting shorter stay were: diagnosis of affective disorder; adjustment disorder; being a parent; having good ongoing contact with family members; higher 'premorbid competence'; higher 'cooperativeness' trait score; immigrant status; and higher score on the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS; Randolph, 1998).

Needs of long-stay patients

Table 4 lists the specific needs of long-stay patients as reported in more than one of the eleven studies which examined this and indicates considerable levels of disablement. Ongoing needs which figure prominently in Table 4 include alleviation of psychotic symptoms, achievement of mental health recovery and provision of interventions to address violence. Given the extended period of treatment already experienced by these patients, this suggests a chronic presentation that has so far responded poorly to treatment and coincides with the views of the individual experts interviewed by Sampson, Edworthy, Völlm & Bulten (2016) that non-responsive chronic mental disorder and dangerous or violent behaviour were common characteristics associated with

long-stay status. A second theme emerging from Table 4 relates to needs more closely related to quality of life; these include having structured daytime activity, improving social skills and having better understanding of sexual experiences.

[Table 4 about here]

Table 4 excludes eleven needs which were identified in a single study. These are: treatment for alcohol misuse (Thomas et al., 2004); interventions to manage anger and anxiety, improve self-esteem, address communication difficulties, provide insight into mental illness, provide insight into offending behaviour (Glorney et al., 2010); interventions for personality disorder, pharmacotherapy including clozapine for treatment-resistant schizophrenia (Harty et al., 2004); treatment for an identifiable brain dysfunction (Williams, Badger, Nursten & Woodward, 1999); and assistance with self-care and the living environment (Jacques, Spencer & Gilluley, 2010).

In the UK, forensic inpatient care is provided at different levels of high, medium and low levels of security. This gives rise to the concept of 'placement need' and the importance of providing long-term forensic care in a setting that is appropriate to a patient's security requirements. There is evidence of poor matching in this respect. For example, one survey in England and Wales in 1994 showed that 32% of patients currently in high secure care would be more appropriately placed in longer term medium security and 10% in longer term low security (Reed, 1997). A similar survey some ten years later in England found as many as 40% of those in high secure care were rated by clinicians as suitable for transfer to lower security if such facilities existed (Harty et al, 2004). In addition, it has been argued that there is a particular need for

long-term 24-hour nurse-staffed accommodation rather than long-term medium security for some patients (Pierzchniak et al., 1999).

Service provision

Although the literature contains a considerable number of papers that comment generally on forensic services, both currently and in terms of future need, description of service models geared specifically to long-stay forensic patients is limited. In a recent exploratory study of eighteen European countries by Sampson et al. (2016), representative experts from eight countries (France, Germany, Ireland, Netherlands, UK, Spain, Portugal & Croatia) stated that specific services were currently available for long-stay forensic inpatients, either in a separate hospital or specific treatment wards. No evaluation of these services were identified in the searches for this review, however.

An early study by Finlay-Jones & Nielssen (1993) in Australia suggested five key principles when establishing a high security unit for mentally disordered offenders: exclude those who will never be released; keep patients with Cluster B diagnoses separate from those with schizophrenia; to achieve therapeutic goals, adopt a 'very hard to escape' security policy rather than a 'no escape' ethos; use a high staff-to-patient ratio to avoid excessive physical security; and site so as to facilitate travel by staff and visiting relatives.

In the UK, Power, Harwood & Akinkunmi (2006) describe the first dedicated long-term medium secure unit which, interestingly, offers a work rehabilitation project in parallel with treatment. Vaughan (2000) outlines a set of specifications that might guide establishment of such a facility which include the desirability of a 'slow-stream' rehabilitation programme. Both studies

note the importance of individualised treatment programmes and structured timetabled activities that include sport, social and leisure groups. The need to provide adequate medical resources to deal with physical health needs in a group of patients that tend to be considerably older than their shorter-stay peers was also acknowledged (Power et al., 2006).

Two studies were identified that describe efforts made to reduce the length of stay of mentally disordered offenders. Nagtegaal, van der Horst & Schonberger (2011) identified two measures introduced in 2008 in attempt to reduce length of stay for forensic patients in Holland designated 'TBS' (Terbeschikkingstelling, which is a provision under Dutch law that allows for a period of treatment (in most cases) following a prison sentence for mentally disordered offenders) . The first was an increase in the maximum duration of conditional discharge from three to nine years, with the hope that this would lead to conditional discharge being granted earlier than before and so reduce length of stay. The second was improvement in the supervision and aftercare programmes for those leaving inpatient forensic settings. The argument has been made that when supervision and aftercare are well organized, forensic patients can move faster from high security institutions to settings with lower levels of security. It was hoped that the presence of this type of aftercare would (a) help forensic inpatient settings to be more prepared to grant conditional discharge and so improve throughput, and (b) allow the general psychiatric health care system to feel more prepared to take ex-forensic patients sooner into their care. The effect of these measures has yet to be fully evaluated, although one limitation has already been anticipated – that the procedure of going through all the various phases of the leave process might slow down rather than speed up throughput. Evaluation is likely to be complicated by the introduction in the Netherlands in 2013 of the so-called Manifest van Lunteren (Ministry of Security & Justice, 2013) which, it can be argued, is likely to have had a stronger influence on length of stay. In this Manifest, judges,

lawyers, hospitals and the Ministry of Security & Justice work together to decrease length of stay, with the hospitals receiving a financial penalty if some of the aims are not achieved. In the UK, Glorney et al. (2010) describe a model of treatment that aims to provide a streamlined pathway through high secure care and so reduce length of stay. The aims of the model are (a) to actively engage service users in recovering/discovering their mental health and reducing risk, (b) to take account of individual needs, abilities and interests, and (c) to provide care and treatment based on need and appropriate timing. The authors anticipated that the model would help to provide care that is strategically planned and sequenced from admission to discharge. No evaluation of this model in clinical practice was identified, but the transparency that is proposed in linking needs and interventions does appear to have potential to enhance the engagement of the service user.

There is some evidence that the physical environment of long-stay rehabilitation wards may influence aggressive behaviour and arousal in chronically ill patients. Olver, Love, Daniel, Norman and Nicholls (2009) found that patients in a purpose-built, spacious, light-filled facility experienced lower levels of arousal, less aggression and scored lower on psychopathology measures when compared with a similar group of long-stay, severely ill psychiatric inpatients and concluded that the greater levels of ambient light were associated with less arousal.

Discussion

Summary of Findings

This review summarises the findings from a total of 69 documents from 14 countries with sampling periods from 1972 to 2015. There was considerable inconsistency between studies in the proportion of patients that are reported as long-stayers, and in the threshold used by researchers to

define long-stay status, which is in keeping with Sampson et al. (2016) who found that formal and informal definitions of 'long-stay' varied widely between the 18 European countries they studied.

The threshold used by researchers to differentiate long-stay patients varied between countries and between studies, ranging from two to fifteen years. The UK appears to be an exception, however. Here, a threshold of two years has been used consistently by researchers for medium secure samples in keeping with the original governmental guidance based the recommendations in the Butler (1975) report which suggested an upper limit of two years stay for medium secure units. Considerable variation was also seen in the proportion of forensic patients that are long stay even when the threshold used remains constant. In UK medium security, for example, percentages ranged from 13.1% (East Midlands, 1983-1999) to 52% (West London, 1983-1995) with both figures based on an admission sample using a two-year threshold to delineate long stay status. Furthermore, three UK studies of patients discharged from a medium secure unit reported proportions with a length of stay greater than two years ranging between 9% and 45%.

These inconsistencies may be a consequence of heterogeneity between the studies arising from:

1) Differences in the sampling timeframe. Forensic mental health practice and service provision change over time, and so findings might be expected to vary with the age of a study. The direction of such an effect on the proportion of patients that are long stayers is difficult to predict, however. In the UK, for example, Brown, Lloyd and Donovan (2001) found an increase from 1992 to 1997 for medium secure care, whereas Ricketts et al. (2001) found the proportion staying longer than two years rose from 7% in 1983-1987 to 16.2% in 1991-1995 before falling to 12.3% in

1995-1999, and Butwell et al. (2000) found no change in average length of stay from 1986 to 1995 in high secure hospitals.

2) Differences in the forensic mental health practices in different countries. The characteristics of the patients each institution or hospital accepts is likely to contribute to this effect. Arguable, a decision to include or exclude patients with personality disorder, sex offenders, and psychopaths, for example, will influence the proportion of patients that are long stay, as will the way in which aftercare arranged and whether or not patients get 'stuck' in the system. Edworthy, Sampson and Völlm (2016) found a profound difference in how three European countries (England, Germany, and the Netherlands) relates to forensic patients, with each approach contributing to different pathways and potentially different outcomes for the individual. Movement between different levels of security may also effect the length of stay. UK patients may be moved between hospitals of different levels of security, whereas in the Netherlands, for example, different levels of security are possible within the same hospital, ranging from high security to living outside under the supervision of the hospital. Studies which consider length of stay based on time spent in the current institution only may underestimate overall length of stay where it is common practice for service users to move between secure settings during one spell of care.

3) Variation between services within countries. In the UK, for example, there is evidence of considerable geographical variation: Coid, Kahtan, Gault, Cook and Jarman (2001) studied 2608 patients admitted to medium secure settings in seven different regions between 1988 and 1994 and found mean length of stay ranged between 25.0 and 59.1 months.

4) Whether the study focused on an admission, discharge or census sample. The majority of studies use discharge samples, comparing cohorts with longer and shorter stays to determine their different characteristics. This method has many advantages, including the relative ease with which such samples can be obtained, the calculation of 'true' length of stay (completed care episodes) and the consistency of the legal and policy context at the time of discharge. However, this method is less suited to predict factors that affect length of stay as there will be a number of confounders due to different admission criteria at the different times of admission in the cohort. If one is interested in the characteristics and needs of patients who remain in the system and may have little prospect of discharge, then it can be argued that a census sample is the most suitable method; it does not, however, include completed care episodes and is therefore less suited to identifying factors predictive of length of stay. Some of these difficulties can be minimised by large, longitudinal cohort designs.

The characteristics associated with long-stay patients revealed were reported with more consistency, even though some (notably that of being male/female) were ambivalent. It is also worth noting that certain categories of patients are excluded or over-represented in some forensic care systems, and these differences can influence the findings reported here. With this caveat, the characteristics most consistently found in long-stay forensic inpatients, compared to those who are discharged earlier, were having an Index Offence that is more violent or severe and a diagnosis of schizophrenia or psychotic disorder. These findings are in keeping with those from a recent review of forensic mental health services by Sedgwick et al. (2016), although it is interesting to note that, for a non-forensic sample, Advokat, Eustis and Pickering (2005) found no significant differences in mean length of stay between those diagnosed with schizophrenia, schizoaffective disorder or affective disorder. One possibility is that it is not simply the presence of a psychotic disorder that

impacts on length of stay for forensic inpatients, but rather the combination of a psychotic disorder and other disorders common in the forensic population such as chronic drug misuse or personality disorder. The lack of a supportive social network and the possibility of a poor response to pharmacological treatment in combination with diagnosis of a psychotic disorder may also play a part. In the current review, being younger when admitted, having more severe symptoms, having a longer history of psychiatric treatment, having a history of substance abuse, and being more likely to experience cognitive or organic deficit were also found positively associated with longer stay.

The factors most often found to predict a longer length of stay were the seriousness of the Index Offence (severity; murder or homicide; violent; sexually motivated) and a diagnosis of schizophrenia or psychotic disorder. Having an ongoing close relationship and being employed before admission to forensic psychiatry predicted shorter stay. If this severity of crime is also related to a higher risk, as seems likely, then longer stay appears broadly in keeping with the principles of the Risk-Need-Responsivity Model (e.g. Skeem, Steadman & Manchak, 2015) widely used to assess and rehabilitate criminals. If severity is not related to higher risk, however, then the responsibility for longer stays might reasonably be attributed to the legal system combined with professional hesitation to apply for release.

The needs of this patient group have been explored in several studies, and these findings may serve to guide the planning of future service provision for this patient group. Understandably, the need for safety (to others and to the self) was viewed as paramount, along with providing interventions to address violence and to resolve psychotic symptoms. Most studies also identified the need for social interaction and structured day-time activity, and the importance of providing treatment related to sex offences and interventions to address substance abuse and physical health issues such as smoking and obesity.

Several studies also refer to the importance of providing long-term forensic care in a setting that is appropriate to a patient's security requirements. This is a particular issue in the UK where forensic care is available at a range of security levels, and where there is strong indication that at least a third of those in high secure care would be suitable for transfer to lower security if such facilities existed.

Although the literature on service provision specifically for long-stay forensic patients is sparse, continued therapeutic input for long-stay patients appears to be valued, with support for individualised treatment programmes, structured activities that include sport, social and leisure groups, and attention to work rehabilitation. An important need identified in several studies was to receive treatment for psychotic symptoms in order to achieve mental health recovery. This raises the issue of responsivity (the third principle in the Risk-Need-Responsivity approach) which focuses on how treatment should be provided. Arguably, it is the responsibility of the system to provide treatment in ways in which patients can benefit, and the needs of patients who respond poorly to conventional treatments for schizophrenia will be particularly relevant for a long stay population.

There is some evidence that a purpose-built, well-lit environment can result in lower levels of arousal and reduced aggression for forensic inpatients. It was suggested in one study that patients who are unlikely to ever be released be cared for separately, that those with Cluster B diagnoses are kept separate from those with schizophrenia, and that a high staff-to-patient ratio is used to avoid excessive physical security.

It appears therefore that recovery, quality of life and social climate are considered as key elements when designing provision for long-stay patients. Arguably, that is also the case for forensic psychiatry in general where the professional challenge is to achieve a balance between creating proper living conditions and protecting others by preventing aggression and reducing the risk of reoffending. There is some suggestion that this balance is currently unsettled for long stay patients.

Strengths and Limitations of This Review

A systematic approach has been adopted for this review: the key steps defined by Khangura et al., (2012) for conducting a rapid review were followed, the search strategy was comprehensive, and the reference lists of the included documents were searched in attempt to identify any additional relevant papers. Any bias towards the literature of any particular country is therefore unlikely to have arisen from not using a systematic approach to the searches. The rapid review approach has limitations, however, and there is no guarantee that every relevant document has been identified; it is possible, for example, that some reports from non-English language countries were not identified. It is also possible that some reports on a related topic in which information on a long-stay subgroup is embedded were not identified.

Implications for Research

A future review on this topic might benefit from a more extensive search of the grey literature for unpublished reports, and from communication with selected academic researchers and clinicians who may have personal knowledge of additional relevant studies. Including more

specific search terms for qualitative research might identify studies focusing on the experience of professionals, patients and carers of residing in forensic settings for a long period of time.

The responsivity issues for these long stay patients appear poorly documented, and so good quality studies are also needed of patients who do not respond to efforts to reduce their length of stay, especially in comparison with those who are more successful. Further research is also needed to evaluate newly-developed long-stay forensic services as identified by Sampson et al. (2016).

Implications for Practice

Regardless of how long-stay is defined, there is strong indication that development of services for this patient group should anticipate significant levels of chronic, treatment-resistant mental disorder. Future service provision for long-stay forensic patients will need to strike a balance between addressing this chronicity, reducing the risk of violence, and helping such patients achieve an improved quality of life.

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Appendix

Keyword-based search strategy

((length$ or duration or time or period or long$) adj3 (stay$ or treatment or admission or detention or hospitali$ or confinement)) or (inpatient duration or longstay or long-stay or needs)

AND

((patient$ or inpatient$ or detainee$) adj12 (felon$ or forensic mental or forensic psychiat$ or ((low or medium or high or maximum) adj3 secur$))) or (insanity acquittee$ or insanity defend$ or offender patient$) or ((hosp$ or ward or inpatient or setting$ or unit or facility or institut$) adj5 (forensic psych$ or forensic mental or TBS or secur$)) or (((low or medium or high or maximum) adj3 secur$) or (Broadmoor or Rampton or Ashworth or Carstairs or forensic institut$))

Table 1

Inclusion and Exclusion Criteria

Inclusion criteria
Studies of inpatient forensic psychiatric settings which fulfil one or more of the following criteria: • a prospectively defined length of stay threshold was used either to define a long-stay group, or to differentiate a long-stay subgroup from a shorter-stay subgroup. • summary statistics are provided on length of stay for either a prospectively defined long-stay group, or for a subsample of long(er)-stay patients in comparison with the whole sample. • multivariate statistical techniques are used in attempt to isolate the key factors predicting either membership of a prospectively defined long-stay group, or actual length of stay. • the characteristics or needs of a prospectively defined long-stay group are reported. • differences in characteristics or needs between long(er)-stay and shorter-stay subgroups are reported.
Exclusion criteria
• Studies of prison or correctional settings • Opinion or discussion articles • Studies focused on youth or adolescent

Table 2

Summary of the Included Documents (n=69)

Study	Country	Research Question	Security Level	Notes
Alexander et al. (2011)	UK	3	Medium	Admission sample; retrospective; 2003-2009; n=138
Andreasson et al. (2014)	Sweden	3,4	FS	Admission sample; retrospective; 1999-2005; n=125
Baldwin et al. (1992)	USA	3,4	FS	Discharge sample; retrospective; 1970-1990; n=193
Bauer et al. (2006)	Israel	1,3	FS	Census sample; 2003; n=65
Beer et al. (2007)	UK	3	Low	Discharge; retrospective; 1997-2005; n=86
Belfrage et al. (2002)	USA	3	Maximum	Admission sample; retrospective; 1997-2001; n=150
Butwell et al. (2000)	UK	3	High	Discharge sample; retrospective; 1986-1995; n=3263
Callahan & Silver (1998)	USA	3	FS	Admission sample; retrospective; 1985-1987; n=529
Castro et al. (2002)	UK	3	Medium	Admission sample; retrospective; 1995-1998; n=166
Colwell & Gianesini (2011)	USA	3	Maximum	Discharge sample; retrospective; n=71
Cormac et al. (2005)	UK	5	High	Retrospective; 2000-2001; n=248
Davoren et al. (2015)	Ireland	3,4	FS	Admission sample; prospective; 2010-2014; n=279
Dell et al. (1987)	UK	1,2,3	High	Admission sample; retrospective; 1972-1974; n=187

Dessecker (2008)	Germany	1,2	FS	Discharge sample; retrospective; 2005
Edwards et al. (2002)	UK	1,2,3	Medium	Admission sample; retrospective; 1983-1996; n=225
Edworthy & Vollm (2016)	UK	1,2	Hi+Med	Census sample; 2016; n=401
Ficken (2003)	USA	3,4	FS	Discharge sample; retrospective; 1999-2001; n=198
Finlay-Jones & Nielssen (1993)	Australia	5	FS	No sample
Fioritti et al. (2001)	Italy	3,4	FS	Discharge sample; retrospective; 1997-1999; n=118
Fong et al. (2010)	Malaysia	1,2,3,4	FS	Census sample; 2007; n=112
Furtado & Vollm (2012)	UK	2	Hi+Med	Census sample; 2012
Gibbons et al. (1997)	Ireland	3	FS	Admission sample; retrospective; 1850-1995; n=436
Glorney et al. (2010)	UK	5	High	Admission sample; retrospective; 2000-2001; n=63
Green & Baglioni (1998)	Australia	3,4	FS	Census sample; 1996; n=590
Grounds (1991)	UK	3	High	Census sample; 1983; n=317
Harty et al. (2004)	UK	5	High	Needs
Heap (2003)	UK	1,3	Medium	Census sample; 2001; n=15
Jacques et al. (2010)	UK	5	Medium	Needs
Kennedy et al. (1995)	UK	1,3	Medium	Admission sample; retrospective; 1987-1993; n=100
Knapp et al. (2007)	UK	3	Medium	Discharge sample; retrospective; 1994-1998
Krakowski & Czobor (1994)	USA	3,4	Forensic	Admission sample; retrospective; 1984-1985; n=38
Long & Dolley (2012)	UK	1,3	Medium	Female admission sample; retrospective; 2002-2010; n=70
Long et al. (2013)	UK	3	Medium	Female discharge sample; retrospective; opening-2012;n=60

MacKay & Ward (1994)	UK	1,3	Hi+Med	Census sample; 1988; n=114
Maden et al. (1999)	UK	1,2	Medium	Discharge sample; retrospective; 1980-1994; n=234
Margetic et al. (2014)	Croatia	3,4	FS	Census sample; 2011; n=56
McKenna (1996)	UK	1	Medium	Discharge sample; retrospective; 1994; n=100
McMurran et al. (1998)	UK	3	Medium	Admission sample; retrospective; 1987-1997; n=53
Melzer et al. (2004)	UK	5	Medium	Patients assessed for medium secure beds; 1999; n=387
Mohan et al. (1997)	UK	1,2	Medium	Admission sample; retrospective; 1983-1995; n=282
Moran et al. (1999)	USA	3,4	Maximum	Discharge sample; retrospective; 1993-1998; n=101
Murray (1996)	UK	2	Medium	Census; 1991; n=555
Nagtegaal et al. (2011)	Netherlands	5	FS	Retrospective; 1990-2009
Nakatani et al. (1992)	Japan	3	FS	Admission sample; retrospective; 1979-1988; n=39
Nijman et al. (2017)	Netherlands	1,2,3	FS/TBS	Census sample; 2013; n=97
Noblin (2011)	USA	3,4	FS	Retrospective; 1999-2008; n=767
O'Neill et al. (2003)	Ireland	1,2,3,5	FS	Census; 2000; n=88
Olver et al. (2009)	Australia	5	FS	Patients pre-post move between facilities; 2006; n=15
Pierzchniak et al. (1999)	UK	5	Hi+Med	Retrospective; 1995; n=176
Quinn & Happell (2015)	Australia	5	FS	Qualitative; views of 12 nurses & 10 long-term patients
Power et al. (2006)	UK	5	Medium	Overview
Reed (1997)	UK	5	Medium	Overview/needs
Rice et al. (1990)	Canada	3,4	Maximum	Discharge sample; retrospective; 1995-1996; n=92

Ricketts et al. (2001)	UK	1,2,3	Medium	Admission sample; retrospective; 1983-1999; n=504
Rodenhauser & Khamis (1988)	USA	3	Maximum	Discharge sample; retrospective; 1980-1984; n=376
Ross et al. (2012)	Germany	1,3,4	FS	Discharge sample; retrospective; 2009-2010; n=204
Ross et al. (2015)	USA	3,4	FS	Admission sample; retrospective; 2000-2012; n=288
Rutherford & Duggan (2007)	UK	2	Hi+Med	Census; 2004
Schalast et al. (2007)	Germany	3,4	FS	Discharge sample, retrospective; n=134
Shah et al. (2011)	UK	1,2,3	Medium	Discharge sample, retrospective; 1999-2008; n=259
Sharma et al. (2015)	UK	2	Medium	Census, 1999, n=185
Silver (1995)	USA	3,4	FS	Admission sample; retrospective; 1976-1985; n=6572
Skipworth et al. (2006)	New Zealand	3	FS	Admission sample; retrospective; 1976-2004; n=135
Steadman et al. (1983)	USA	3,4	FS	Admission sample; retrospective; 1971-1976; n=225
Thomas et al. (2004)	UK	5	High	Patients resident in 2003; n=1008
Vaughan (2000)	UK	3,5	Medium	Overview
Wilkes (2012)	UK	1,2,3,4	Medium	Discharge sample; retrospective; 2001-2011; n=198
Williams et al. (1999)	UK	5	High	Review of characteristics of inpatients; 1989-1998
Wright et al. (2008)	Ireland	1,2	FS	Admission sample; retrospective; 1997-2003; n=780

Table 3

Proportion of forensic patients that are long stay from 17 studies

	>2yrs			>5yrs			>8yrs	>10yrs		>20yrs	>30yrs
	admission	discharge	census	admission	discharge	census	admission	discharge	census	census	census
Netherlands									8% [a]		
Malaysia									34% [b]		
Germany								13.7% [c]			
Ireland	2.6% [d]		48.8% [e]							19.3% [e]	
UK high & medium secure			66% [f]			39.1% [g] 47% [f] 25% [h]			27% [f] 25% [h]	9% [f]	3% [f]
UK medium secure	52% [i] 13.1% [n]	9% [j] 33.6% [m] 45% [p]	12.4%[s] 20%[k]	8%[l]	9.3%[m]						
UK high secure							46.5% [r]		15% [k]		

[a] Nijman et al. (2017); [b] Fong et al. (2010); [c] Dessecker (2008); [d] Wright et al. (2008); [e] O'Neil et al. (2003);

[f] Rutherford & Duggan (2007); [g] Sharma et al. (2015); [h] Edworthy & Vollm (2016); [i] Mohan et al. (1997); [j] Maden et al. (1999);

[k] Furtado & Vollm (2012); [l] Edwards et al. (2002); [m] Shah et al. (2011); [n] Ricketts et al. (2001); [p] Wilkes (2012); [r] Dell et al. (1987);

[s] Murray (1996).

Table 4

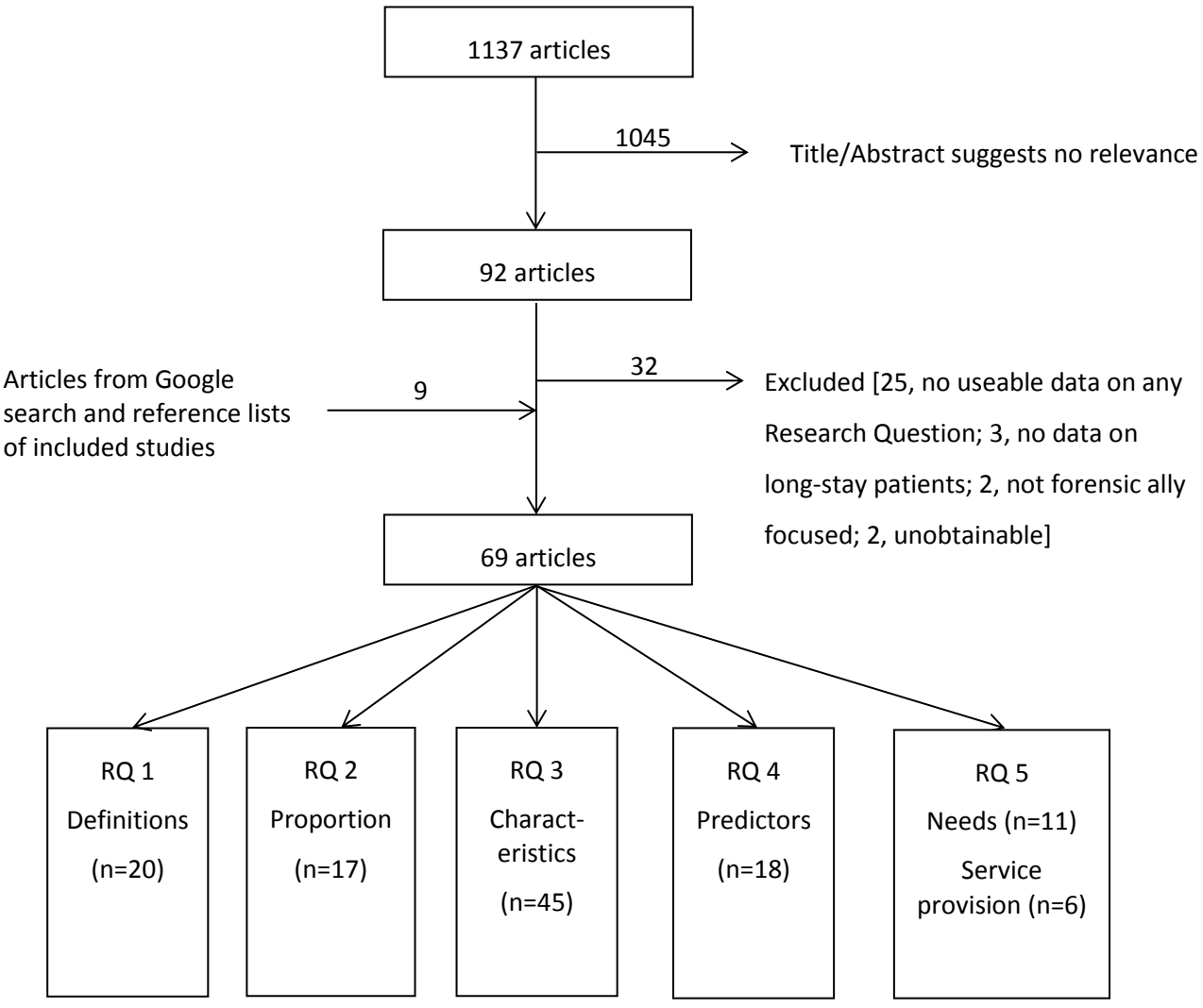
Needs of long-stay forensic inpatients reported by more than one study

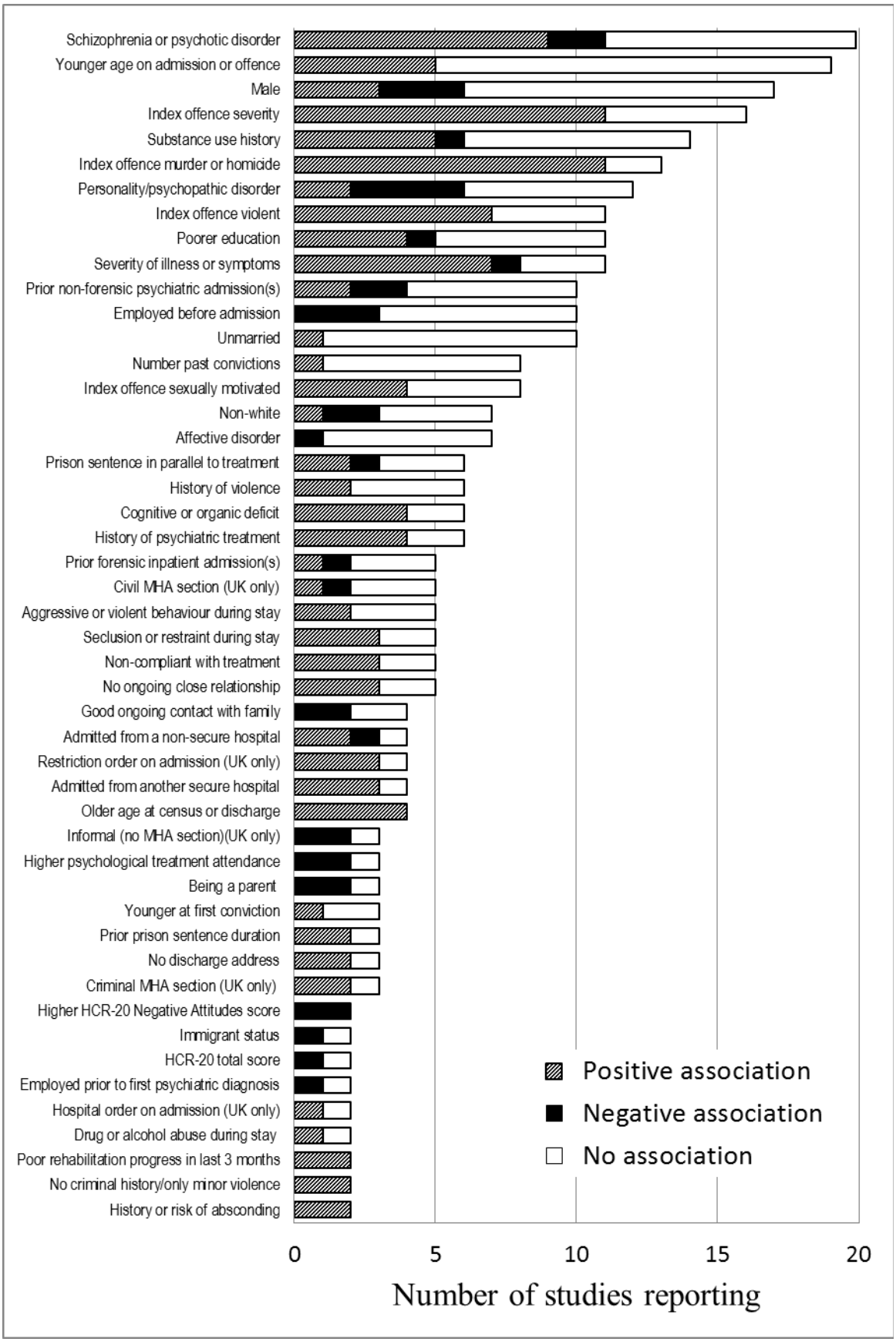
Need identified	Studies reporting
Psychotic symptoms/mental health recovery	3, 5, 6, 9
Safety/risk to others/interventions to address violence	3, 5, 6, 9
Substance abuse treatment	2, 3, 5, 6
Treatment related to sex offences	2, 3, 4, 5(men)
Daytime activities/structuring the day	3, 5, 6, 9
Physical health issues (e.g. weight, smoking)	1, 5, 6
Placement need	3, 7, 8, 9
Psychological distress	2, 5(women), 6
Safety/risk to self	5(women), 6, 9
Arson issues	2, 5(women)
Social skills	2, 6
Understanding sexual experiences/supporting sexual intimacy	2, 3, 5, 6, 10

Key to studies: 1, Cormac et al. (2005); 2, Glorney et al. (2010); 3, Harty et al. (2004); 4, O'Neil et al. (2003); 5, Thomas et al. (2004); 6, Jacques et al. (2010); 7, Reed (1997); 8, Pierzchniak et al. (1999); 9, Melzer et al. (2004); Quinn & Happell (2015)

Figure 1

Flowchart of Study Selection




Schizophrenia or psychotic disorder
Younger age on admission or offence
Male
Index offence severity
Substance use history
Index offence murder or homicide
Personality/psychopathic disorder
Index offence violent
Poorer education
Severity of illness or symptoms
Prior non-forensic psychiatric admission(s)
Employed before admission
Unmarried
Number past convictions
Index offence sexually motivated
Non-white
Affective disorder
Prison sentence in parallel to treatment
History of violence
Cognitive or organic deficit
History of psychiatric treatment
Prior forensic inpatient admission(s)
Civil MHA section (UK only)
Aggressive or violent behaviour during stay
Seclusion or restraint during stay
Non-compliant with treatment
No ongoing close relationship
Good ongoing contact with family
Admitted from a non-secure hospital
Restriction order on admission (UK only)
Admitted from another secure hospital
Older age at census or discharge
Informal (no MHA section)(UK only)
Higher psychological treatment attendance
Being a parent
Younger at first conviction
Prior prison sentence duration
No discharge address
Criminal MHA section (UK only)
Higher HCR-20 Negative Attitudes score
Immigrant status
HCR-20 total score
Employed prior to first psychiatric diagnosis
Hospital order on admission (UK only)
Drug or alcohol abuse during stay
Poor rehabilitation progress in last 3 months
No criminal history/only minor violence
History or risk of absconding
Positive association
Negative association
No association
0
5
10
15
20
Number of studies reporting

Caption for Figure 2

Characteristics associated with long-stay forensic inpatient care summarising the 49 variables reported by more than one study

>>>>>>> *end of manuscript* <<<<<<