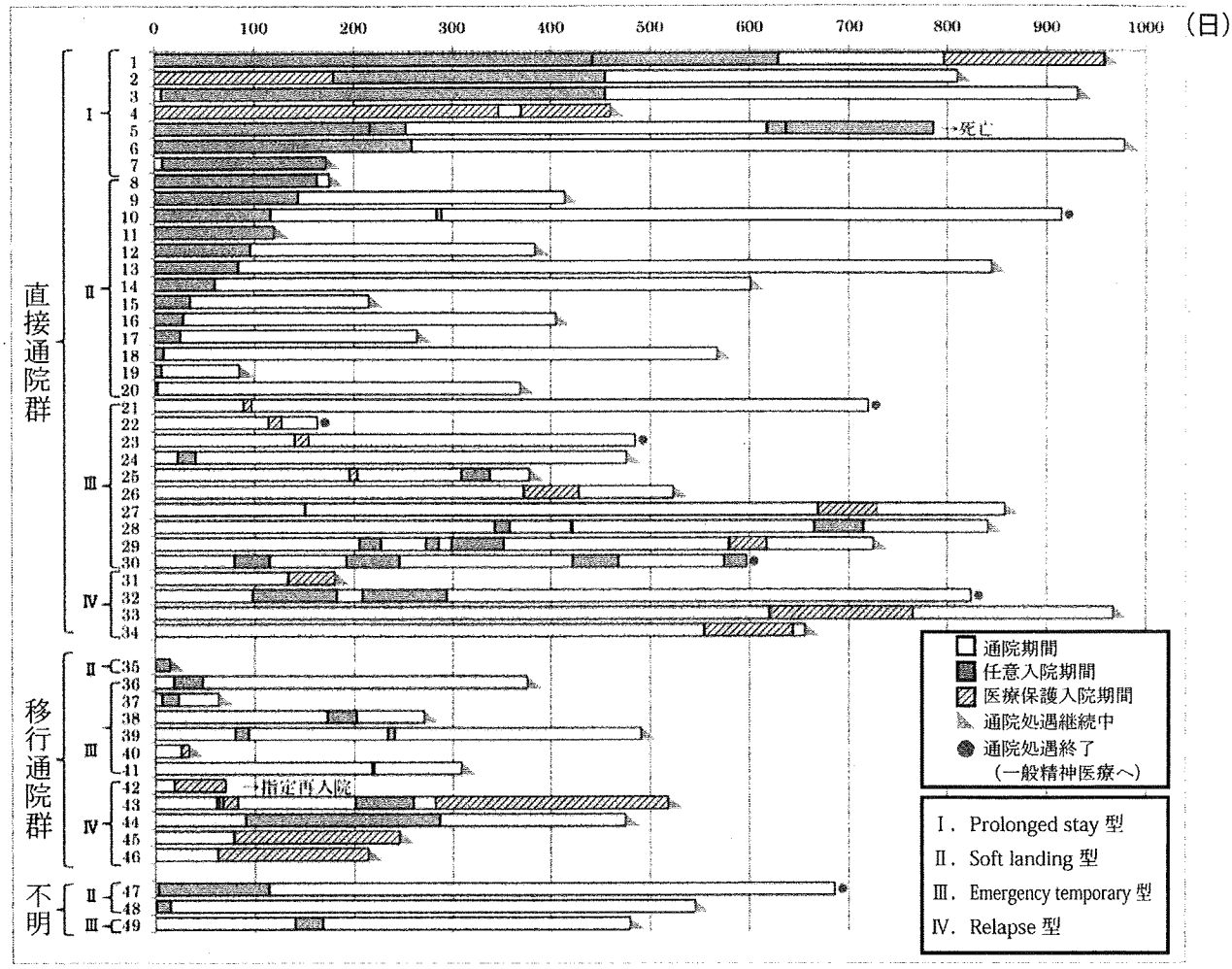

図5 通院処遇中に精神保健福祉法による入院があった49名の入院期間の推移
(対象者毎に直接・移行通院群別，得られたタイプ別(Ⅰ～Ⅳ)に分けて示した。横軸は通院処遇開始日からの経過日数を示す。)

ていきたいと考える。

2. 医療観察法における通院処遇中の精神保健福祉法による入院併用のタイプ

H19年度の吉川を主任とする研究班報告[4]では，通院処遇開始日から調査日までの精神保健福祉法による入院期間と回数分布を，対象者毎に比較・検討したところ，Ⅰ. Prolonged stay（長期的入院）型，Ⅱ. Soft landing（軟着陸）型，Ⅲ. Emergency/ Temporary（緊急/一時）型という3タイプに分類されることがわかった。H20年度も引き続き同様の調査を行い，精神保健福祉法による入院期間と回数分布の経過を比較・検討したところ，上記3タイプに加え，Ⅳ. Relapse（再発）型の入院の傾向があることがわかった。(直接通院群と移行通院群におけるタイプ別の精神保健福祉法入院による入院期間の推移を図5に示す。)

以下，4タイプ別のその特徴と傾向について述べる。

1) Ⅰ. Prolonged stay（長期的入院）型

このタイプは，通院処遇開始後すぐに精神保健福祉法の入院を始め，入院日数が全体から見て比較的長期に及んでいる者を分類した。このタイプに分類された7例(図5における対象者1～7)は，全員が直接通院の処遇決定を受けた者であった。入院日数は最長者で790日にも及んでいた。

このタイプに属した対象者には，通院処遇が決定された時点で，住居の確保ができていないため，精神保健福祉法による入院から開始しなければならなかったというケースが含まれていた。たとえば，自宅への放火，家族に対する他害行為

から，他害行為以前に住んでいた住居に戻ることができず，新しい住居の確保に長期間必要としているケース(図5における対象者1)などであった。それ以外には，身体合併症のために精神保健福祉法による任意入院を行ったケース(図5における対象者5)などが考えられるが，通院開始当初から医療保護入院が長期間に及んでいるケース(図5における対象者4)などは，果たして通院処遇が適切であったのか，入院の理由等を踏まえて吟味していく必要がある。

医療観察法の「入院によらない医療」の決定となっている以上，精神保健福祉法の入院は，必要最小限とされるべきであると考える。しかし，そのことが非常に困難となっているこのタイプに関しては，社会的入院の要素や処遇の決定が適切であったかなど，今後の処遇経過をモニタリングしていくとともに，退院・社会復帰を阻害している要因は何か，ケース毎に詳細に調査していく必要がある。精神保健福祉法の入院が長引く要因は，単に対象者の病状によるものだけではなく，複合的に要因が絡まりあっていると考えられ，それらを調査していくことは，医療観察制度の改善すべき課題の明確化にもつながることが示唆された。

2) Ⅱ. Soft landing（軟着陸)型

このタイプは，通院処遇開始直後からの比較的短期間の精神保健福祉法の入院がなされた者として分類した。

このタイプに分類された16例のうち，13例(図5における対象者8～20)は，直接通院の処遇決定を受けた者であり，1例(対象者35)は，移行通院者であり，不明は2例(対象者47と48)であった。平均入院日数は81日であった。

通院治療導入のために精神保健福祉法による入院が必要なSoft landing型のケースは49例中14例(33%)であったことから，今後の課題としては，「通院導入のための精神保健福祉法による入院効果の評価」をケース毎に調査するとともに，これらの入院をどのような形で医療観察制度に反映させていくかなどを具体的に検討していく必要性があることが示唆された。

また，今回はSoft landing型に分類はしたものの，調査時点で精神保健福祉法の入院が継続中の者(対象者11と35)も2例含まれている。これらは今後，Ⅰ. Prolonged stay型になる可能性もあるので，経過をモニタリングしていく必要があるであろう。

3) Ⅲ. Emergency/Temporary型(緊急/一時)型

このタイプは，緊急/一時避難的な短期間(今回は，便宜的に90日以内の入院とした)の精神保健福祉法の入院がなされた者として分類した。このタイプに分類された17例(図5における対象者21～30，36～41，49)の1回あたりの入院日数(2～88日)は，平均すると26日であった。

このタイプに関しては，本来想定されていた精神保健福祉法による入院の活用であると考えられる。1回あたりの平均入院日数が26日と入院が長期化しないで退院が可能となっていることから，緊急/一時型(休息目的の入院も含む)入院は，「症状等の変化を早期に発見し，迅速な危機介入が可能となっている」ことが示唆された。

これらのタイプの入院に関しても，入院日数のみではなく，対象者毎のケース調査と合わせて，今後考察していく必要がある。

4) Ⅳ. Relapse（再発)型

このタイプは，H19年度の調査ではみられなかった新しいタイプの精神保健福祉法入院の傾向であり，その特徴としては，処遇開始初期からの入院ではないにもかかわらず，Ⅲ. のEmergency/Temporary（緊急/一時的)型より入院期間が長い(今回は，便宜的に90日以上の入院がある者とした)ことがあげられた。このタイプに分類された9例における1回あたりの入院日数は，47日～312日であり，平均入院日数は138日であった。

(入院回数は，調査日：H20年7月15日時点で入院継続中であった者も含み，入院日数は，入院日～調査日までの期間をカウントした。)

このタイプの入院は，おそらく病状悪化や再燃による入院であると考えられるが，医療保護入院をしなければならない状況が長びくようなケースに関しては，ケース毎の調査も必要であろう。今後は，このタイプの医療保護入院の動向に注目してモニタリングしていく必要性が示唆された。

5 結論

収集したデータによって明らかになった静態情報等の集計結果から，日数分布の尤度を最大にするパラメータを計算したところ，対象者の97.5%が，4.45年で処遇が終了することが推定された。このことから，最長処遇期間である5年以内にほとんどの対象者の処遇が終了することが示唆されたが，本調査は制度施行後3年間のものであり，通院処遇が3年を経過した事例はデータの中には含まれていないことから，今後は，3年経過後のデータを含めて分析することにより，さらに正確な処遇終了日数の推定が可能であることが示唆された。

医療観察法通院処遇中の精神保健福祉法による入院のあり方には，4つのタイプ分けが可能であり，それぞれに効果や検討課題を含んでいることが明らかになった。今後は，各タイプの特徴的なケースについて，質的な調査を併用することによって，より詳細で具体的な分析が可能となることが示唆された。

本研究によって得られた課題を現場へのフィードバックを通じて，制度改正にむけた専門的医療の向上を目指していきたい。

6 研究の限界と今後の展望

本研究は，全国の指定通院医療機関のうち35施設における通院処遇対象者119名を対象とした調査の結果であり，全数調査には至っていないことが研究の限界である。

しかし，本研究への協力が得られた35施設は，各地域の中でも基幹的な役割を果たしている施設であり，全対象者中の約半数以上のサンプルデータの収集が可能となったことから，医療観察法における通院医療の実態や特徴を示唆するサンプルにはなったと考えられる。本研究が指定通院医療機関の任意の研究協力に依拠している以上，全施設から調査協力の同意を得ることは難しいが，制度改正のための基礎資料となるべく，今後も調査対象拡大のための努力を続けて行きたいと考える。

精神保健福祉法による入院のタイプ分けに関しては，現在制度が進行している最中であり，データ数も追跡期間も少ないことから，タイプ分けのための客観的な基準値を示すことは困難であった。今後，処遇終了者が増えてくれば，統計に基づく基準値をもうけられるのではないかと考える。

＊本研究は，平成20年度厚生労働科学研究費補助金（こころの健康科学研究事業）「心神喪失者等医療観察法制度における専門的医療の向上のためのモニタリングに関する研究」（主任研究者 吉川和男）の分担研究として行ったものである。また，本研究の結果の一部は，第5回日本司法精神医学大会にて発表[5]した。

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INTERNATIONAL JOURNAL OF FORENSIC MENTAL HEALTH, 8: 81–96, 2009

ISSN: 1499-9013 print / 1932-9903 online
DOI: 10.1080/14999010903199233

Routledge
Taylor & Francis Group

Offenders with Mental Disorder on Five Continents: A Comparison of Approaches to Treatment and Demographic Factors Relevant to Measurement of Outcome

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Specialist forensic mental health service development continues worldwide. Given their generally small size and slow patient turnover, aggregating multi-site data could aid in the study of their effectiveness, safety, and value for money. The study compares such context of care and treatment philosophies in nine countries. National databases on demographics, mental disorders, and offending were identified. Participating forensic mental health practitioners independently rated likely outcomes for standard cases of serious offenders with psychosis or personality disorder. Gender distribution was similar between populations, but there were differences in age distribution and proportions of ethnic groups. Rates of psychosis were similar, but there were considerable population-based differences in substance misuse disorder rates, other substance misuse indicators and in criminal conviction statistics. Case analysis confirmed shared preferences for mental health disposals for people with psychosis, and penal

disposals otherwise, with differences only in process details. Criminal recidivism was thus found to be a poor comparative measure between these countries, as it was impossible to adjust fully for differences in crime classification and measurement. Clinical outcome measures may be less vulnerable to national differences, but prevalence and type of substance misuse must be rated precisely when sharing or comparing service outcome data between nations.

Keywords: mentally disordered offenders, international demographics, international crime statistics, international mental disorder rates, substance misuse, placement comparisons

Growth of specialist forensic mental health services continues worldwide. Those with a robust treatment philosophy date at least from the 1980s. In the U.K. they owe much to a 1975 government interdepartmental report (Home Office, DHSS, 1975, the 'Butler Report') after gaps in service had been identified, and in mainland Europe to the World Health Organization (WHO) (1977) multidisciplinary working group on forensic psychiatry. This tackled the ideological conflicts between whether forensic psychiatrists should be limited to assisting the courts or combine this with therapy. An essentially therapeutic model prevailed. Elsewhere, similar developments have occurred after a range of other factors have triggered similar debate, including concern about existing secure hospital services in New Zealand (Mason, Bennett, & Ryan, 1988) and a multiple homicide in Japan (Yoshikawa & Taylor, 2003).

Forensic mental health services are expensive, and impose more constraints on service users than most other health services. It is thus particularly important to demonstrate that service models are effective, safe, and provide good value for money. Individual services, however, tend to be small and to have a slow turnover of patients. It would be useful if research from each service could inform each other, or if data could be pooled. The potential for difference between both the services provided and their context, however, makes it difficult to know the extent to which research in one jurisdiction is relevant to practice in another. By their very nature, forensic mental health services have parameters which are prescribed by the laws of the jurisdictions in which they sit. Relevant laws and legal structures vary considerably, particularly between the traditions of common law and those under Roman law. Such difficulties are compounded by the fact that, for forensic mental health services, the principal outcome measure adopted tends to be one of re-offending. Designation of an act as an offense is not culture free, and thus varies between nations and over time. Furthermore, offending rates, however defined and measured, vary with sex, age, and community status.

International comparative research of such services has been in two main phases to date. In the first, Harding and Curran (1979) described criteria and procedures for forensic mental health services in 47 jurisdictions of the then 43 member states of the WHO. Soothill et al. (1981) studied involuntary hospitalization in six countries with considerable differences in social structure and cultural background, and later added a study of forensic psychiatric examinations for the courts (Soothill et al., 1983). Perhaps the main finding from this cluster of studies was the extent of similarity between the countries in the way in which compulsory hospitalization was used for people with chronic or relapsing illnesses. This was almost invariably when they had reached a crisis point, including violence, within their families. Differences arose principally in the detail of procedures, but also in the nature of the disorder cited as the reason for detention. In some countries, this was almost exclusively psychosis, but others took a broader view of the relevant disorder. The second tranche of studies focused principally on Europe. Salize, Dreßing and Peitz (2002) examined legislation and practice in respect of involuntary admission and treatment of anyone with a mental illness in the fifteen member states of the 'old' European community, and then Salize and Dreßing (2005) reported on procedures and practice for mentally ill offenders more specifically. In both studies, experts from each country were recruited to provide details for their country. Blaauw, Hoeve, van Marle and Sheridan (2002) collated narrative from five European countries (Belgium, England and Wales, Germany, Sweden and the Netherlands) and Canada, again with local experts writing the country specific chapters. When comparative chapters were collated by one or two people from one jurisdiction, however, there appeared to be problems of omission and interpretation. Nevertheless, these pieces of work represented a substantial step forward in demonstrating core similarities and relevant differences in the legal and clinical service framework in which services are delivered. A more clinical approach covering three European countries (Finland, Germany, and Sweden) and Canada was described by Hodgins and colleagues (2002), in a conference presentation.

There have been useful studies from several countries setting out difficulties in the interpretation of crime statistics, and the advantages and disadvantages of collecting them in

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We gratefully acknowledge the support of Pfizer, Japan, for a grant over two years to support data collection. We also thank John Monahan and John Gunn who serve as project advisors. Additional advisors at the outset of the project: Eliot Barnett, Anne Berman, Phil Fennell, Nicola Gray, Jens Lund, Mary McMurran, Mike Maguire, and Paul Rogers.

different ways. In brief, there are three principal approaches to crime measurement, each of which yields a different estimate of crime. Household surveys, such as the British Crime Survey (BCS), are often regarded as the most accurate, and give the highest rates, but, by definition, exclude the institutionalized or homeless. As a victim-based survey, some crimes are not included, for example, murder and theft from commercial premises. In addition, the BCS does not include victimization of those under 16 years old. Crime as reported to the police yields the next highest figure, but such statistics suffer from coincidental factors which make it more or less likely that a particular crime will be reported, inclusive of requirements for insurance purposes, or neighborhood/subgroup trust/distrust of the police. In neither of these approaches is the evidence that a crime actually took place tested through the courts. Records of criminal convictions yield the lowest figures, and suffer from additional biases that may operate as a case progresses through the criminal justice system. Wrongful conviction occasionally occurs, but the standard of evidence required for a conviction for a criminal offense is 'beyond reasonable doubt' in all jurisdictions. Therefore, while the sensitivity of official conviction statistics tends to be low, the specificity is usually better.

Not all countries measure crime in all these ways, and additional problems for international comparison purposes lie in differences in definitions of crime, in the point in time of recording, in rules for counting multiple offenses by any one individual, whether the numbers of offenses or number of victims are counted, and in clear-up rates. Comparison studies from Sweden (Sonefors, 2002) and New Zealand (Segessenmann, 2002) have shown the extent to which figures would vary, allowing for these characteristics. In New Zealand, for example, the rate of recorded violent crime for the year 2000 according to the standard New Zealand approach to its measurement was 1,082 per 100,000 population. When a U.S. method of measurement was adopted, however, the figure was 132.6; application of the Canadian method brought the figure to 551, the Australian method to 1,036, and the English and Welsh method to 1,205, all per 100,000 population (Segessenman, 2002). Yet further problems arise over time, as new crimes are recognized in law, while some behaviors previously regarded as offenses are decriminalized.

Barclay and Tavares (2002) sought to make international figures more comparable by examining crime trends across the fifteen countries of the old European Union, rather than fixed annual rates, while researchers in South Africa (Atbeker, 2005a; South African Law Commission, 2000) have gone to considerable lengths to make sense of the various statistics available within the country, in part so that international comparisons might be more meaningful. Atbeker (2005b) acknowledges that it remains difficult to provide definitive answers on crime rates, even for the crime of murder, generally regarded as the crime with the highest clear-up rate and tightest definition.

In our study, intended as the first step in a longitudinal comparative study of outcome of mentally disordered offenders entering specialist forensic mental health services, we sought to provide a brief relevant description of each participant country or jurisdiction, compare sociodemographic factors, recorded prevalence of relevant mental disorders and conviction rates for serious crimes (adjusted for variation in categorization of crimes) and examine comparability between the lead participants in each country on theoretical clinical management of cases.

METHODS

Participants

The participant jurisdictions or countries are Sweden, Wales, Australia's state of Victoria, New Zealand, Denmark, South Africa's Western Cape province, Japan, Canada's province of Quebec, and Scotland. Each was represented by a forensic psychiatrist or psychologist with both university and health service affiliations.

Quantitative Contextual Data Collection

All participants were invited to identify all sources of demographic, offending, mental disorder, and mental health service use data available for their jurisdiction or country. In addition one of us (E.D.) conducted three separate searches for each country for all relevant web-based databases, one for sociodemographic data, one for crime data and one for mental disorder prevalence data. All web-based sources consulted are listed in Appendix 1.

Little information about prevalence of mental disorder was identified by this method. Exceptions were in some data about substance misuse and reporting of household surveys carried out by government or other official bodies, for example, in the United Kingdom and New Zealand. A limited literature search was therefore also conducted. For each country in turn, the thesaurus terms ("Schizophrenia and disorders with psychotic features" OR "Personality Disorders") AND ("Epidemiology" OR "Prevalence" OR "Cross-Sectional Studies" OR "Incidence") were entered into PubMed. A similar search strategy using equivalent topic terms was also carried out using the ISI Web of Knowledge Science Citation Index Expanded and the Social Science Citation Index. These yielded information on prevalence of mental disorders in all countries with the exception of South Africa.

Selection of databases for extraction for data analysis was made according to best match for year and nature of data collection. This meant that in some instances whole-country data were substituted for the preferred jurisdictional data; in the case of Wales, it was not always possible to separate statistics purely for Wales from those for England and Wales, since here, health but not criminal justice services are devolved.

General population statistics were from the official national census of 2001 (2000 for Japan) for all countries except Sweden and Denmark, for which the 2001 total population statistics and central population register, respectively, were used. Criminal conviction statistics were taken as the most consistently available indicators of national/regional crime rates and data drawn from official, published government figures for all countries except South Africa for a similar date range (2001–2004). Official criminal conviction statistics are not available for South Africa. For South Africa only, therefore, inferences were made from recorded crime figures published by the South African Police Service, applying the attrition figures calculated by Leggett (2003). The choice of published research figures for prevalence of psychosis and personality disorder in each country was made according to best time match of data collection to the years 2000–2004.

Data were organized into broad categories and adjusted for definitional differences. For ethnic group, up to six groups were created for analysis, the sixth or last group invariably including all minorities not otherwise included. For simplicity, we have used the term 'ethnicity' for all countries but the strict category of indicative data varies (see Appendix 2). For purposes of analysis, ethnic groups were not specified by type, but rather by relative size in population, however details of ethnicity are given in Appendix 2. With respect to mental disorder, all long-standing functional psychoses were combined into a single category of psychosis. All personality disorders were included in a single category of personality disorder. This latter grouping was still not entirely satisfactory, because one country (Japan) makes no reports of personality disorder at all, and for two (New Zealand and Canada) we could find data only on 'anti-social personality disorder.'

Offending data were grouped as homicide, two categories of non-fatal other violence and sex offenses. This avoided most differences in detail of offense type. These particular offense clusters were selected as the index offenses of the clientele of secure hospital services are most likely to belong to one of these groups. Some differences in classification remained, however. First we had to resolve differences between countries according to the fate of the victim. For some countries it was not possible to separate figures for attempted murder from completed homicide (e.g., Sweden), while in others it was not possible to distinguish attempted murder from other non-fatal violence figures (Scotland). We were unable to resolve this problem entirely. For those countries where these figures could be separated, they made only a small difference to the calculations for either category, so, although attempted murder is not consistently represented in the offending results, we do not think this affects the overall picture significantly. Also with respect to the homicide figures, death by dangerous/vehicular homicide was treated differently. Greatest consistency was achieved by excluding such deaths from the homicide category wherever possible, although vehicular manslaughter and death by dangerous driving remain for New Zealand and Scotland, respectively. In the violent and sex offender categories, every effort was made to exclude very minor offenses, so that the offense types were more comparable, and also more similar to the type committed by people generally admitted to forensic mental health services. This was done by consulting the glossaries to the criminal records statistics for each country and extracting all those offenses within the violent spectrum which did not include bodily harm, the only exception being threats to kill, and extracting all those sexual offenses which were directly related to organized prostitution, bigamy, or did not include bodily contact. All terms and statistics are published in English, but legal terms do not invariably translate clearly, so all technical expressions were checked with the country's representative.

Examination of Philosophy of Service

Four case vignettes were presented to each of the nine participants. In brief, the cases, described in more detail with the results, were of people charged with the kind of serious offense likely to result in a referral to a specialist forensic mental health service if the individual is also thought to have a mental disorder. Age was held as more or less constant (28–35), but gender and nature of disorder (psychosis or personality disorder) was varied. A structured questionnaire was attached about the likelihood and nature of psychiatric assessment before court proceedings, the decisions in law, and clinical management. Participants were also invited to make any other comments they wished about the cases. Individual responses were made in writing, independently of the responses of the other participants.

Analyses

Quantitative data were converted where necessary to indicate rates per 100,000 population. Formal statistical testing for difference was not possible because we were invariably working with aggregate data. We chose to use membership of the categorical groups age 0–17, 18–64, and 65+ for the main comparisons as these represent the most usual cutoffs between health service provision by age group.

Given the size of the group of people responding to the case material (nine participants), these data were analyzed qualitatively, notwithstanding the structure in parts of the questionnaire. Preliminary extraction of categories from the responses was conducted by two of us (E.D. and P.J.T.), and overlapping categories combined. The resultant narrative and tables were circulated to all participants and any differences, queries or concerns resolved by iterative process.

RESULTS

Population Demographics

Table 1 shows the population characteristics by country or research area. Total population size of the participant areas varies from 2.9 million (Wales), as the smallest, to

TABLE 1
Population characteristics

	Sweden	Wales	Victoria (Au)	New Zealand	Denmark	Western Cape (SA)	Japan	Quebec (Ca)	Scotland
					Population N (%)				
Male	4408445 (49.5%)	1403900 (48.4%)	2263506 (49.1%)	1863309 (48.8%)	2644319 (49.4%)	2192311 (48.5%)	62110764 (48.9%)	3532830 (48.8%)	2432494 (48.1%)
Female	4500683 (50.5%)	1499185 (51.6%)	2348591 (50.9%)	1957443 (51.2%)	2704893 (50.6%)	2332005 (51.5%)	64815079 (51.1%)	3704625 (51.2%)	2629517 (51.9%)
Total	8909128	2903085	4612097	3820752	5349212	4524316	126925843	7237455	5062011
					Age distribution N (%)				
0–17years	1938266 (21.8%)	662779 (22.8%)	1136900 (24.7%)	960015 (25.1%)	1161021 (21.7%)	1500109 (32.2%)	22919353 (18.1%)	1564715 (21.6%)	1098864 (21.7%)
18–64years	5438798 (61.0%)	1735526 (59.8%)	2889605 (62.7%)	2396949 (62.7%)	3396363 (63.5%)	2790134 (61.7%)	81772777 (64.5%)	4712925 (65.1%)	3158247 (62.4%)
65years+	1532064 (17.2%)	504780 (17.4%)	585592 (12.7%)	463788 (12.1%)	791828 (14.8%)	234073 (5.2%)	22005152 (17.4%)	959815 (13.3%)	804900 (15.9%)
					Ethnic groups N (%)				
Group 1	7881154 (88.5%)	2841500 (97.9%)	2303528 (41.6%)	2868009 (73.8%)	4953265 (92.6%)	2438963 (53.9%)	125239399 (98.7%)	6627605 (93.0%)	4960265 (98.0%)
Group 2	379829 (4.3%)	25400 (0.9%)	1571245 (28.4%)	526281 (13.5%)	215449 (4.0%)	1207422 (26.7%)	635269 (0.5%)	152195 (2.1%)	55176 (1.1%)
Group 3	279361 (3.1%)	17700 (0.6%)	786120 (14.2%)	237459 (6.1%)	123850 (2.3%)	832902 (18.4%)	335575 (0.3%)	103620 (1.5%)	16198 (0.3%)
Group 4	148938 (1.7%)	7100 (0.2%)	404086 (7.3%)	231801 (6.0%)	38448 (0.7%)	45029 (1.0%)	312921 (0.2%)	96740 (1.4%)	12655 (0.2%)
Group 5	135097 (1.5%)	6300 (0.2%)	371081 (6.7%)	24924 (0.6%)	14865 (0.3%)	—	273785 (0.2%)	85760 (1.2%)	9618 (0.2%)
Group 6	84749 (1.0%)	5100 (0.2%)	104670 (1.9%)	—	3335 (0.1%)	—	128894 (0.1%)	59660 (0.8%)	8099 (0.2%)
Life expectancy at birth (years)	81	79	81	80	78	69	82	80	

Note. Ethnic groups ranked by relative size. See Appendix 2 for further data definitions.

126.9 million (Japan), as the largest, but as all the following comparisons were based on proportions of the total population or rates per 100,000, total population size per se is not important. As the physical area of each jurisdiction also varied considerably, we considered two additional measures—those of population density and urban-rural mix. Rates of some mental disorders and some crimes tend to be higher in urban than rural areas. Schelin, Munk-Jorgensen, Olesen and Gerlach (2000), for example, reported a gradient of first admission rates for schizophrenia, from 26.1 per 100,000 in the Copenhagen municipality, to 8.6 in provincial towns and rural areas. The position may be rather more complex with respect to crime, with a possible tendency for rural areas to have a higher homicide rate, but other crimes to be more prevalent in urban areas (Francisco and Chénier, 2005). Population densities in the participant countries vary greatly, with the highest population per square kilometer in Japan and the United Kingdom (339 and 246, respectively), and the lowest in Australia and Canada (both 3) (United Nations Population Division, 2006). This apparently large difference, however, merely reflects the fact that large tracts of the apparently sparsely populated countries are uninhabited altogether. The more useful measure for the purposes of crime and mental disorder comparisons is estimation of the percentage of the population living in urban areas. Using this measure, there is greater comparability between the jurisdictions. In Japan, just 66% of the population lives in towns or cities, but for all the other participant jurisdictions the range was 81–93% (2005 data; United Nations Population Division, 2006).

Sex distribution was similar between countries, with a slight excess of women in each (mean percentage 51.2, range 50.5–51.9), overall and at each age level considered (0–17, 18–64, 65+).

Participant countries differed in age distribution. There was a small difference between the countries in proportion of the population aged 18–64 (range 59.9–65.1%). The Western Cape Province of South Africa was an outlier in terms of relatively high proportion of the population aged 17 or under (32%), with New Zealand and Victoria, Australia, being next in rank order with 25% and most of the remaining countries having around 22%. Rank order was almost reversed for the oldest age category, with just 5% of the population of Western Cape Province aged 65 or over, but Japan, Sweden, and Wales having over 17% in this category. Reflecting the outlying countries in respect of age, the Western Cape Province had the lowest figure for life expectancy at birth (69) and Japan the highest (82).

All three southern hemisphere countries tended towards a more equally balanced distribution of ethnic groups than the northern hemisphere countries. The largest ethnic group accounted for well under half of the population in Victoria, just over half of the population in Western Cape Province, and nearly three-quarters of the population in New Zealand. In Sweden, Wales, Denmark, Japan, Canada (Quebec), and Scotland size of the largest ethnic group approached or exceeded 90% of the population. Victoria and Western Cape Province had two further ethnic groups which each accounted for more than 10% of the population, and New Zealand had one. No other country had a second ethnic group which accounted for more than 5% of the population. Appendix 2 gives further details of how the various ethnic groups are constituted.

Mental Disorder

Comparison of population-based mental disorder rates proved to be the most difficult part of the study. The psychosis data had all been collected in the 1990s, and therefore up to a decade earlier than all the other data, but generally included the same range of disorders within the collective of 'functional psychosis' (see Appendix 3). There were psychosis data for all jurisdictions except Cape Western Province specifically or South Africa more generally. For some areas, for example, Sweden, there were comparable data at for two different 12-month periods in different places, suggesting that the 12-month prevalence would be generalizable for the country. Comparable and sound 12-month prevalence data were available for parts of Sweden, Wales, parts of Australia, inclusive of Melbourne in Victoria, Denmark, Japan, Canada's Ontario, a province geographically and demographically similar to Quebec, and Scotland. Only lifetime prevalence data were available for New Zealand. Table 2a shows that 12-month prevalence of psychosis in the general population was between 0.3% and 0.6%, and New Zealand's lifetime prevalence just 0.3%.

The prevalence range for personality disorder was 1.2–6.5%, but with no figures available for Denmark, Western Cape, or Japan, and much more variation in how the data were collected.

There was most variation in substance misuse disorder rates, even when calculated using a similar approach. There were, however, some patterns in common between the countries in substances use. In all countries except South Africa, alcohol use disorders were more prevalent than illicit drug use disorders (illicit drug use disorder figures were not available for SA). There was, though, considerable variation in the extent to which alcohol use disorders had been diagnosed (range 1.6% in Japan to 18.8% in South Africa). Figures for illicit drug use showed less variation between those countries for which we located data, but these data were less consistently available.

Table 2b presents WHO data on alcohol abuse in 2004 and illicit drug misuse in 2005, not necessarily amounting to a diagnosis. The rank order of countries at the highest level of abuse of alcohol appears different from that if the 1990s research based diagnostic figures are taken into account, e.g., with New Zealand moving into first place over South Africa. Drug use is less comparable (Table 2c), because it is broken down by individual drug, but again there appears to be some

TABLE 2a
Rates of mental disorder in the general population

	Sweden	Wales	Victoria (Australia)	New Zealand	Denmark	Western Cape (SA)	Japan	Quebec (Canada)	Scotland
Functional psychosis	0.6% (53,455)	0.5% (14,515)	0.47% (21,677)	0.3% (11,462)	0.33% (17652)	—	0.4% (507,703)	0.3% (21,712)	0.5% (25,310)
Personality disorder	1.2% (106,910)	4.4% (127,736)	6.5% (299,786)	1.9–4.2% (72,594)	—	—	—	1.7% (123,037)	4.4% (222,728)

Note. Figures given in brackets indicate expected population numbers affected if the indicated percentages are applied to the total population numbers provided in Table 1. (-) indicates data not available. See Appendix 3 for data sources and detailed notes.

TABLE 2b
Alcohol use and abuse in the general population

	Sweden		United Kingdom		Australia		New Zealand		Denmark		South Africa		Japan		Canada	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Heavy/hazardous use (%)	8.3	14.7	12.1	10.5	7.8	9.1	19.0	9.0	15.1	9.1	7.0	8.8	3.1	4.9	8.9	2.0
Sample age	18–75 years		20–64 years		14+ years		14–65 years		16+ years		15+ years		20–64 years		15+ years	
Sampling year	2002		2000		2001		2000		2000		1998		2001		1998–99	
Abuse/dependence (%)	—	—	7.5	2.1	5.2	1.8	32.0	2.5	3–4.4		27.6	9.9	5.9	0.5	14.0	4.5
Sample age	—		16–65 years		18+ years		18–64 years		18+ years		15+ years		20+ years		15+ years	
Sampling year	—		2000		1997		1986		2000		1998		1997–1999		2002	

Note. Combined UK data only available, no separate data for Wales or Scotland. Abuse / dependence figures represent 12-month prevalence with the exception of Japan, which shows 6-month prevalence. See Appendix 3 for data source and definition of heavy / hazardous drinking and alcohol abuse/dependence.

TABLE 2c
Estimated annual prevalence of abuse in the general population

	Sweden	United Kingdom	Australia	New Zealand	Denmark	South Africa	Japan	Canada
Opiates	0.1 (1998)	0.9 (2001)	0.5 (2004)	0.5 (2001)	0.7 (2001)	0.2 (2004)	0.1 (2002)	0.4 (2000)
Cocaine	0.2 (2003)	2.1 (2003)	1.3 (2004)	0.5 (2001)	0.8 (2000)	0.8 (2003)	0.03 (2003)	1.9 (2004)
Cannabis	1.7 (2003)	10.9 (2003)	13.9 (2004)	13.4 (2001)	6.2 (2000)	8.4 (2002)	0.1 (2002)	14.1 (2004)
Amphetamines	0.2 (2000)	1.6 (2003)	4.0 (2004)	3.4 (2001)	1.3 (2000)	0.1 (2002)	0.4 (2003)	0.6 (2002)
Ecstasy	0.4 (2003)	2.0 (2003)	4.2 (2004)	2.2 (2001)	0.5 (2000)	0.3 (2002)	0.1 (2003)	0.9 (2002)

Note: Data taken from the UN World Drug Report 2005 (United Nations Office on Drugs and Crime) and represents abuse of specified illicit drugs only, and therefore summed prevalence figures cannot be assumed to represent all illicit drug abuse in a country. Amphetamines include all amphetamine-type stimulants. Relevant year for data indicated in brackets. See Appendix 3 for further definitions.

change in rank order, with, taking all illicit drug use into account, Australia and New Zealand showing the highest level of misuse.

Table 3 shows the conviction rates per 100,000 population for those groups of offenses most likely to precipitate a referral of a person with mental disorder to specialist forensic mental health services. There is little variation in homicide rates, except for the high level in Cape Western Province (overall range 1.1–2.3, South Africa excepted). There is similarly little variation in rates of sex offenses (8.2–12.2, South Africa excepted, but rates even in South Africa appear not to exceed 16.3%). Variation is mainly—and considerably—in the range of non-fatal violent offenses, whether or not they are subdivided by seriousness.

Qualitative Case Analysis

Case 1: A 28-year-old single man with a long criminal record and opiate abuse (see Table 4)

In each participant country, being male with a long criminal career, periods of imprisonment, and a history of substance misuse would rarely attract psychiatric attention at any point in the process, even in the presence of unequivocal personality disorder in the alleged perpetrator. The exception is the likelihood that such a man might raise a defense of 'non-pathological incapacity' in South Africa; this has some parallels with the concept of 'non-insane automatism,' and the defense relies on being able to show emotional turmoil. This would not be more likely to attract psychiatric

TABLE 3
Conviction rates for serious and violent crime

	Rate	Sweden	Eng & Wales	Victoria	New Zealand	Denmark	Western Cape	Japan	Quebec	Scotland
Homicide	CR	2.1	2.5	1.6	2.5	2.1	46.3	1.2	0.8	2.5
	All	1.7	2.2	1.3	2.1	1.7	34.5	1.1	0.7	2.3
Serious violence	CR	116.0	93.9	118.9	208.3	65.8	212	24.1	70.1	45.8
	All	95.6	82.8	97.4	178.9	53.4	158	21.0	60.8	41.8
Lesser violence	CR	36.7	100.6	103.0	84.6	197.0	167	11.0	127.7	266.6
	All	30.3	88.7	84.4	72.6	159.9	125	9.6	110.7	243.5
Total non-fatal violence	CR	152.7	194.5	221.9	292.9	262.8	379	35.1	197.8	312.3
	All	125.9	171.5	181.8	251.5	213.3	283	30.6	171.5	285.3
Sex offenses	CR	10.3	9.3	11.0	14.2	14.2	21.9	9.8	13.0	9.5
	All	8.5	8.2	9.0	12.2	11.5	16.3	8.5	11.3	8.7
Year		2004	2003	2003–04	2004	2004	2002	2004	2003–04	2003–04
Source		Statistics Sweden	Home Office	Bureau of Statistics	Ministry of Justice	Statistics Denmark	See note 6 below	Ministry of Justice	Statistics Canada	Scottish Executive

Notes. 1. Rates are given per 100,000 population of age for criminal responsibility (e.g. "CR") and per 100,000 total population ("All")

2. Age of criminal responsibility: Wales, New Zealand 10 years; Quebec 12 years; Victoria, Western Cape, Japan 14 years; Sweden, Denmark 15 years; Scotland 8 years. The true minimum age for criminal responsibility is 10 years (Australia) / 7 years (South Africa), however a rebuttal presumption operates for those aged up to 14 years whereby the prosecution must demonstrate evidence that the child knows the difference between right and wrong and has the ability to act in accordance with that knowledge in order for criminal responsibility to be established.

3. Homicide includes attempted murder and conspiracy to murder in all countries except Scotland (where they are included in violence).

4. Serious violence typically includes serious assaults, robbery, kidnapping/abduction and threats to kill / do grievous bodily harm, although some variation occurs due to local recording practices.

5. Driving causing death is excluded from all figures wherever possible, but is included in homicide for Scotland, and in violence for Denmark.

6. No official conviction data available. Recorded crime data from South African Police Service utilised and convictions derived using percentage conviction rates reported by Leggett (2003). Date for Western Cape are estimates only.

treatment than in the other countries, but the defendant might thereby be acquitted. In all countries, however, conviction as charged was considered most likely, followed by a sentence of imprisonment. There was considerable difference between countries in the estimate of likely length, with an indefinite public protection (IPP) sentence likely in Wales since the Criminal Justice Act 2003; length of time served in prison under this sentence depends partly on tariff—the punitive element—and partly on assessments of risk to others and evidence of change while in prison.

Case 2: A 30-year-old married woman . . .

By contrast, in all countries, a mother killing her infant while thought to be in a state of puerperal depression would generally be dealt with in mental health services. Everywhere it was considered that she would attract attention at every stage of the legal process, being likely to await trial in a hospital and likely to have her mental state taken wholly or partly into account during the trial phase of the court hearing, which, in most countries, would affect whether or not she sustained a conviction or the nature of that conviction. Finally, in all countries she would be more likely than not to remain as a hospital inpatient for at least some period after court disposal. Barriers to a hospital placement could arise in Wales if she had recovered her mental health by the time of trial and/or sentencing. Community treatment orders could be applied in each country except Sweden, but would be unlikely; legislation implemented in Sweden on July 1, 2008, will allow the Court to impose a community treatment order there in such circumstances. Any other differences between countries would be entirely a matter of process. Neither Sweden nor Denmark, for example, has a mandatory consequence of being found guilty of murder, nor any legal concept of not guilty by reason of insanity or diminished responsibility, although Sweden does have an offense of infanticide. In Wales, given the age of the child, a conviction for infanticide would be a possibility, but in practice manslaughter on grounds of diminished responsibility is more likely.

Case 3: A 35-year-old divorced man . . . .

Being male and a persistent violent offender was no bar to consistent psychiatric intervention in any of the participant countries when the man had not only attracted a diagnosis of schizophrenia but also had a record of having been ill on each occasion of violence attracting public attention. In each country it was regarded as likely that the courts would require psychiatric reports, and, except in Sweden where the issue does not arise, to be found at least reduced in his responsibility for his fatal attack. He would not only be sent to a hospital under some form of compulsory detention order, but would also remain supervised and liable to readmission to a hospital after discharge. Differences in legal process would have much in common with case 2; in these circumstances in South Africa, the Court might raise the issue of unfitness to plead or insanity, and it would be for the defendant to challenge this if he so wished.

Case 4: A 30-year-old married man . . . .

This man, with considerable social stability and being motivated for treatment, but a pedophile, proved to be the only slightly divisive case. There was common ground in expecting that the man's mental state would be irrelevant to conviction, and that, if found guilty, he would be sent to prison. Differences arose in the extent to which he would attract psychiatric interest during the legal process. In Japan, it was thought extremely unlikely that a psychiatric report would ever be done; psychiatric evidence would be most likely presented in Sweden, New Zealand, South Africa, and Canada. The most likely effect of psychiatric evidence, if presented, would be on length of a sentence of imprisonment. In Wales an IPP would be most likely, and, as he is admitting his offenses, he would be a candidate for the sex offender treatment program in prison. Despite consistency in inability or reluctance to treat within the health service, predicted response to treatment was viewed as the most likely factor to influence sentence length. Additional case-related data are presented in Table 4.

DISCUSSION

There is a wealth of data on national demographics, mental disorder, substance misuse rates and criminal behavior already collected and freely available for all the countries or research areas in our study group, and for many other countries as well. Demographic and criminological data are routinely collected by government-sponsored offices; the methods of demographic data collections are comparable, but the definitions and differences in methodologies and availability of national crime statistics underscore the extent to which concepts of crime are embedded in a nation's culture. Location of collective data on national mental disorder rates is more challenging, with most of it founded in strong research methodologies, but little of it is recent, and almost none collected within the same time frame as the demographic and criminal data. Data on substance misuse falls somewhere in-between the systems. There is some commitment to research recognition of certain levels and consequences of substance misuse constituting diagnoses, but problem use is also being treated as a matter for national statistical analysis for most countries. The greatest difficulty that we faced in making adequate comparisons of the data once we had resolved as far as possible the methodological differences in its collection was that only aggregated figures were available, and not the databases themselves. This precluded statistical analysis.

Demographics

The countries or areas studied were similar in sex distribution of their populations, and of relevant age distribution. Crime

TABLE 4
Detailed response to illustrative cases

		Sweden	Wales	Victoria (Au)	New Zealand	Denmark	Western Cape (SA)	Japan	Quebec (Ca)	Scotland
Case One: male, 28 yrs, offending history, previous prison sentences, 10-yr history opiate abuse, ASPD—robbery with violence under influence of alcohol										
Pre-trial	Psych report	X	X	x	x	x	see note 1	x	x	x
	Psych remand	X	X	x	x	x	see note 1	x	x	x
Trial	Psych evidence	X	X	x	x	x	x	x	x	x
	Verdict	CR	CR	CR	CR	CR	CR	CR	CR	CR
Post-trial	Disposal	P	P	P	P	P	P	P	P	P
	Duration	2–3 yrs	IPP	1–3 yrs	7–10 yrs	2–3 yrs	7–10 yrs	5 yrs	2–3 yrs	15 yrs
	Management	NR	NR	NR+SA+VR	NR	NR+SA+VR	NR	NR	NR	NR+SA
Case Two: female, 30 yrs, three children, no offense history, bipolar affective disorder—drowned son four weeks post-partum during depressive psychosis										
Pre-trial	Psych report	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Psych remand	Y	Y	see note 2	Y	Y	Y	Y	Y	Y
Trial	Psych evidence	Y	Y	Y	Y	Y	x	Y	Y	Y
	Verdict	N/A	DR	NGRI	NGRI	NGRI	NGRI	NGRI	DR	DR
Post-trial	Disposal	SH	SH	SH	SH	see note 3	SH	SH	?	SH
	Post-discharge	TO	TO	TO	TO	TO	TO	TO	CD	TO
Case Three: male, 35 yrs, history serious violence driven by delusions, paranoid SZ, poor treatment compliance—fatal wounding during psychosis										
Pre-trial	Psych report	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Psych remand	Y	Y	see note 2	Y	Y	Y	Y	Y	Y
Trial	Psych evidence	Y	Y	Y	Y	Y	x	Y	Y	Y
	Verdict	N/A	DR	NGRI	NGRI	NGRI	NGRI	NGRI	NGRI	NGRI
Post-trial	Disposal	SH	SH	SH	SH	SH	SH	SH	SH	SH
	Post-discharge	TO	CD	TO	TO	TO	TO	TO	CD	TO
Case Four: male, 30 yrs, pedophilia + dependent PD, no other mental disorder - on first arrest admits multiple sex offenses against children, motivated for treatment										
Pre-trial	Psych report	Y	Y	x	Y	Y	Y	x	Y	Y
	Psych remand	x	x	x	x	x	Y	x	x	x
Trial	Psych evidence	Y	x	x	Y	Y	Y	x	Y	x
	Verdict	CR	CR	CR	CR	CR	CR	CR	CR	CR
Post-trial	Disposal	P	P (SW)	P	P	P	P	P	P	P (SW)
	Duration	2–5 yrs	IPP	2–5 yrs	8–10 yrs	2–5 yrs	1–3 yrs	3–20 yrs	2–5 yrs	?
	Management	SOTP	SOTP	SOTP	SOTP	SOTP	NR	SOTP	SOTP	SOTP

Notes.
1: Defendants in cases such as this often attempt to raise a psychiatric defense, making remand in hospital for reports likely. 2: Any admission would only be for involuntary clinical assessment and urgent treatment during the pre-trial period.
3: Would be admitted to a general psychiatric ward - whether open or closed would depend on severity of illness, not offense.
4: For England and Wales, the Criminal Justice Act (2003) introduced indefinite public protection sentences (IPPs), more or less equivalent to a life sentence. A tariff date would also be given with such sentences, indicating the earliest possible opportunity to apply for parole.
Key to abbreviations
CD = Supervision and/or compliance a condition of discharge; CR = criminally responsible (if found guilty of actual offence); DR = diminished responsibility or equivalent, e.g., manslaughter; GP = general psychiatric hospital facility; IPP = indefinite public protection sentence (see note 4); NGRI = not guilty by reason of insanity / not criminally responsible; NR = normal regime; P = prison; P (SW) = prison, special wing for prisoner's own protection; SA = substance abuse treatment ; SH = secure / forensic hospital facility; SOTP = sex offender treatment programme; VR = violence reduction treatment e.g. anger management, cognitive skills; x = would not occur; Y = yes.

rates generally are higher in younger age groups, so if the focus of interest were on any differences in the epidemiology of crime, the relative youth of the South African population, and to a lesser extent those of Australia and New Zealand, could be important. This would probably have some impact on crime figures overall, and in a climate of higher crime rates, even mentally disordered offenders may be more recidivism-prone. So, insofar as studies of outcome after treatment for mental disorder use any criminal recidivism as a key outcome measure, then in applying findings between one country and another, there may be grounds for caution. Youth crime, however, tends to be heavily dominated by acquisitive, motoring, and property-damaging offenses rather than the more serous crimes which tend to be the precipitants of admission to specialist forensic mental health services. Furthermore, there has been a consistently reported tendency for people with psychosis who offend to be older at the time of offending than those without mental illness (e.g., Taylor & Hodgins, 1994)

while Singleton, Meltzer, Gatward, Coid & Deasy (1998), for England and Wales, found that the proportion of prisoners with psychosis was higher between ages 21–34 than in either younger or older age groups. It is unlikely, therefore, that the apparent differences in extremes of age distribution in the general populations would have much effect on the nature or size of specialist forensic mental health user populations.

Ethnic group distributional differences between the countries may be of considerable relevance. Northern hemisphere countries had a predominance of one ethnic group, with all others in tiny minorities. Southern hemisphere countries had a much more equitable distribution, but this does not necessarily mean that all groups have equal opportunities in practice even if national policies are all now consistently against discrimination. Social disadvantage of various kinds may be associated with either higher psychosis rates (Read, van Os, Morrison & Ross, 2005) or higher crime rates (Farrington, 1993, 2008), or probably both. Some ethnic groups may have a predominantly different perspective on progress through the criminal justice system, often with the effect of different periods of detention for similar crimes (Hood, 1992). Then, too, ethnic factors and legal definitions of crime may interact. In South Africa, for example, spouse abuse was regarded as a private matter with some ethnic groups claiming a right for a man to 'discipline' his wife until the Domestic Violence Act No. 116 of 1998. Since 2002, referrals to forensic psychiatry units under this Act have been increasing and become the main grounds for detaining psychotic individuals who terrorize their families. In any comparison of services, perhaps within countries as well as between them, this would be an important area for more detailed consideration.

Mental Disorder

The difficulties in obtaining figures for the prevalence of mental disorder, and in particular figures for the period 2002–2004, lead us to be extremely cautious in any observations on comparability. Figures for personality disorder were certainly too disparate for anything approaching reliable comparison, and not available at all for some countries. This might be taken as indirect confirmation if any were needed of the shared difficulty between the participant countries in regarding personality disorder as a true mental disorder worthy of attracting specialist mental health services. Psychosis is the main business of forensic mental health services. Apart from Western Cape Province, for which no figures were available, and New Zealand, where only lifetime prevalence figures were available, and the rate therefore seemed exceptionally low according to these figures, the 12-month period prevalence was available for all countries and within a tight range of 0.3–0.6%. Incidence and prevalence of schizophrenia, the main psychosis of concern to forensic mental health services, may be higher in developed than in developing countries, but is probably similar between developed countries and does not appear to vary with economic status (Saha, Welham, Chant, & McGrath, 2006). The life expectancy at birth figures for our participant research areas suggest that all may be broadly considered as 'developed,' Migrant status may, however, affect prevalence (Saha, Chant, Welham, & McGrath, 2005), and the extent to which ethnic minority groups within each research area represent migrant groups in general or perhaps new migrant groups in particular may be an important influence on rates. New Zealand was one of the countries with more even distribution of ethnic groups, no indigenous population but long-established resident groups from a variety of cultures.

Substance misuse diagnoses are those for which we expected most variation, and found it, but it was disappointing that the availability of such data was so limited. There was a hint, however, in comparison between diagnostic figures derived from national research studies in the 1990s and graded alcohol abuse figures from the WHO (2004), and the illicit drug diagnosis figures for the 1990s and the United Nations (2005) illicit drug use figures of 10 years or so later, that this is the most fluid field, with real changes over time. Substance misuse is generally considered to be an important risk factor for violent offending among mentally healthy and psychotic people alike (e.g., Swanson, Holzer, Ganju, & Jono, 1990; Wallace, Mullen, & Burgess, 2004), although it is unlikely that all substances are equally risky or exert their effects in similar ways. This field will certainly need to be taken into account in any studies of offender-patient outcomes, not only on a case-by-case basis, but as a national contextual issue.

Crime Figures

A rich variety of crime figures were abundantly available for comparable time periods, but were the data that required most interpretation by members of the research group for best matching, because of the range of names for offenses and because presentation of crime statistics in most countries involves aggregation or separation of classes of crimes which are commonly inconsistent between countries. Where aggregations could not be unraveled, such as the separation of attempted from completed homicide, then we aggregated those offenses for the purposes of comparison whether or not that would otherwise have been our preference. The extent of variation between the participant areas in each of the offence categories examined, but particularly in the areas of non-fatal violence, tends to confirm that offending and reoffending data translate poorly from one country to another, and must constitute poor outcome measures as indicators of effectiveness of the specialist clinical services provided by forensic mental health personnel. They are particularly poor in the very areas that are of special concern—repetition of violent offending.

Implications for Future Research

Members of the collaborating group belong to countries which all have dedicated forensic mental health services,

with some special secure inpatient units. We established common ground in terms of our overarching treatment philosophies, but a next important step will be to explore similarities and differences in service delivery in practice—for example, the proportion of offender patients who would be treated in dedicated forensic mental health services in relation to the proportion treated within mainstream psychiatric services. We propose to do this in three ways: 1) by collecting and analyzing data on series of more complex cases than those chosen for this basic analysis; 2) by describing the specialist services and their interface with other mental health and criminal justice services in more depth, and 3) by comparing real responses to a consecutive series of real cases defined by disorder and offense in terms of their previous health and criminal justice service experiences before presentation to specialist forensic mental health services and in terms of their disposal from Court.

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APPENDIX 1
Directory of internet resources consulted

International	
www.prisonstudies.org	International Centre for Prison Studies
www.heuni.fi	European Institute for Crime Prevention and Control
www.unstats.un.org	United Nations Statistics Division
www.who.int/whosis	World Health Organisation Statistical Information Service
http://epp.eurostat.ec.europa.eu	The Statistical Office of the European Communities
www.unodc.org	United Nations Office on Drugs and Crime
www.europeansourcebook.org	European Sourcebook of Crime and Criminal Statistics
Sweden	
www.bra.se	Swedish National Council for Crime Prevention
www.scb.se	Statistics Sweden
www.sweden.gov.se	The Government and Government Offices of Sweden
www.kvv.se	Swedish Prison and Probation Service
Wales	
www.homeoffice.gov.uk/rds	Home Office Research Development & Statistics Directorate
www.statistics.gov.uk	UK Office for National Statistics
www.natcen.ac.uk/	National Centre for Social Research
www.manchester.ac.uk/ndec	National Drugs Evidence Centre
www.wales.gov.uk/statistics	National Assembly for Wales, Statistical Directorate
www.hmprisonservice.gov.uk	HM Prison Service in England and Wales
Australia	
www.abs.gov.au	Australian Bureau of Statistics
www.aihw.gov.au	The Australian Institute of Health and Welfare
www.griffith.edu.au/school/psy/aisrap/	Australian Institute for Suicide Research and Prevention
www.aic.gov.au	The Australian Institute of Criminology
New Zealand	
www.stats.govt.nz	Statistics New Zealand
www.justice.govt.nz	New Zealand Ministry of Justice
www.corrections.govt.nz	New Zealand Department of Corrections
www.moh.govt.nz	New Zealand Ministry of Health
Denmark	
www.statbank.dk / www.dst.dk	Statistics Denmark
www.denmark.dk	Denmark official website hosted by the Ministry of Foreign Affairs
www.jm.dk	Danish Ministry of Justice
www.im.dk	Danish Ministry of Interiors and Health
www.kriminalforsorgen.dk	Danish Prisons and Probation Service

South Africa	
www.statssa.gov.za	Statistics South Africa
www.communitylawcentre.org.za/cspri	Civil Society Prison Initiative
www.hst.org.za	SA Health Systems Trust
www.dcs.gov.za	Dep of Correctional Services
www.csvr.org.za	Centre for the Study of Violence and Reconciliation
www.iss.co.za	Institute for Security Studies
www.saps.gov.za	South African Police Service
www.doj.gov.za	Dep of Justice and Constitutional Development
Japan	
www.stat.go.jp	Japanese Statistics Bureau
www.moj.go.jp	Ministry of Justice
www.mhlw.go.jp	Ministry of Health, Labour and Welfare
www.ncnp.go.jp	National Centre Neurology & Psychiatry
Canada	
www.statcan.ca	Statistics Canada
www.cihi.ca	Canadian Institute for Health Information
www.stat.gouv.qc.ca	The Institut de la Statistique du Québec
www.cmha.ca	Canadian Mental Health Association
www.ccsa.ca	Canadian Centre on Substance Abuse
Scotland	
www.scotland.gov.uk/stats	Scottish Executive Statistics
www.show.scot.nhs.uk/forensicnetwork	Forensic Mental Health Services
www.gro-scotland.gov.uk	General Register Office for Scotland
www.scottish.parliament.uk	Scottish Parliament Information Centre
www.sps.gov.uk	Scottish Prison Service
www.scrol.gov.uk	Scotland's Census Results Online
www.scotcourts.gov.uk	Scottish Courts

APPENDIX 2
Details of Ethnic Group Distribution in the Participant Countries

	Sweden	Wales	Victoria (Australia)	New Zealand	Denmark	Western Cape (South Africa)	Japan	Quebec (Canada)	Scotland
Statistic	Country of birth	Ethnicity	Ancestry[1]	Ethnicity[2]	Country of birth	Ethnicity	Nationality	Ethnicity	Ethnicity
Group 1	Sweden	White	NW Europe	European[3]	Denmark	Coloured	Japanese	White	White
Group 2	Other Europe	Asian	Oceania	Maori	Other Europe	Black African	Korean/N. Korean	Black	Indian / Asian
Group 3	Nordic	Mixed	S&E Europe	Asian	Asia	White	Chinese[5]	S.&S.E. Asian	Chinese
Group 4	Middle East	Black	Other/unknown	Pacific Peoples	Africa	Indian/Asian	South American	Other/unknown	Mixed
Group 5	Other/unknown	Chinese	Asia	Other/unknown	The Americas	—	Other Asian	Arab & W.Asian	Other/unknown
Group 6	Asia	Other/unknown	N.Africa/Middle East	—	Other/unknown[4]	—	Other/unknown	Chinese/Japanese	Black
Source	2001 Total Population Register, Statistics Sweden	Census 2001 statistics	Census 2001, Australian Bureau of Statistics	Census 2001, Statistics New Zealand	Central Population Register 2001 census point (01 January), Statistics Denmark	Census 2001, Statistics SA	Census 2000, Statistics Japan	Census 2001, Statistics Canada	Census data 2001, General Register Office for Scotland

1. The Australian census uses the term ancestry rather than ethnicity, and asks respondents to mark that ancestry which they most closely identify with when considering as far back as three generations of their family. Several ancestries may be nominated, but only the first two responses are used for purposes of analysis. Aggregated data show percentage of responses per group, not individuals, and 5540730 responses represent 4612097 individuals.

2. The NZ census allows recording of more than one ethnicity per person, up to a maximum of six. These are then ranked according to a priority rating system. Aggregated census data show ethnicity counted by total responses per group, with a maximum of three responses counted per person (selected via the priority rating system). Ethnicity data do not include a count of those not responding / inadequately described in the 'other' category (as is often done in other countries).

3. Includes New Zealand European.

4. Includes those defined as stateless.

5. Includes those from Taiwan.

6. For example, individuals in Canada with student or work visas and their families living with them.

APPENDIX 3
Notes and definitions for Table 2

Table 2a

- Sweden: 12-month prevalence of primary diagnosis in former Stockholm County, data gathered 1970–1971. Functional psychosis defined as "schizophrenic/paranoid conditions and other psychoses", PD defined as "psychopathy" and "character neurosis." Source: Halldin (1984). 12-month prevalence of functional psychosis (schizophrenia, schizoaffective, paranoia and psychosis NOS) also reported at 0.6% in Northern Uppsala adult population in 1991 by Widerlov et al. (1997).
- Wales: National household survey of a random representative sample of adults in England, Scotland and Wales, 12-month prevalence data. Functional psychosis diagnosed using SCAN., PD - whole sample screened for probable presence of PD, and subsample diagnosed with clinical interview using SCID-II. All data except those for PD relate to Wales only; due to low overall prevalence PD data relate to England, Scotland and Wales. Source: Singleton et al. (2001).
- Victoria, Australia: Functional psychosis data source: Jablensky et al (1999). Sampled in four urban areas across Australia, 1997–98. Psychosis diagnosed using the "Diagnostic Interview for Psychosis (DIP)" one-month prevalence. Personality disorder data source: Jackson and Burgess (2000). Lifetime prevalence from a national sample collected in 1997, using ICD-10 diagnostic criteria.
- New Zealand: Data source for functional psychoses and PD: Wells et al (1989). Lifetime prevalence. PD data represent prevalence of antisocial PD only.
- Denmark: Functional psychosis defined by ICD-8 (295.7, 295.4, 297.2) in index year 1983 among residents of Bornholm Island aged 15+years identified via Danish psychiatric register or contact with psychiatric services. Source: Bojholme & Stromgren (1989).
- Japan: Functional psychoses data represent 12-month prevalence in 1993 of schizophrenic disorders defined by ICD-9. Source: Nakamura et al. (1997).
- Canada: Data source for psychoses and PD: "Health Canada. A Report on Mental Illnesses in Canada." Functional psychoses data represent 12-month prevalence of schizophrenia in 15–64 year olds in Ontario in 1991. PD data represent 12-month prevalence of antisocial personality disorder in 15–64 year olds in Ontario in 1991.
- Scotland: National household survey of a random representative sample of adults in England, Scotland and Wales, 12-month prevalence data. Functional psychosis diagnosed using SCAN., PD - whole sample screened for probable presence of PD, and subsample diagnosed with clinical interview using SCID-II. All data except that for PD relate to Scotland only; due to low overall prevalence PD data relate to England, Scotland and Wales. Source: Singleton et al. (2001).

Table 2b

Source: WHO Global Status Report on Alcohol 2004 (WHO Department of Mental Health and Substance Abuse, Geneva, 2004). Heavy / hazardous drinking rates represent such drinking amongst drinkers, i.e. the total population excluding complete abstainers. Heavy / hazardous drinking defined as consumption of more than 40g (males / 20g (females) pure alcohol a day, with the following exceptions:

- New Zealand - 6 drinks (males) / 4 drinks (females) in one sitting at least once a week;
- Denmark – drinking in excess of 21 drinks (males) / 14 drinks (females) during the last week;
- South Africa – risky weekday drinking exceeding 5 drinks (males) / 3 drinks (females) daily on *weekdays;*
- Canada – 5+ drinks consumed in one sitting at least once a week.

Abuse / dependence according to ICD/DSM criteria, except for South Africa (CAGE criteria) and Canada (criteria based on tolerance, withdrawal, need, harm etc.).

Tables 2c

Prevalence rates are for national general population aged 15–64 years with the following exceptions:

- UK rates for cocaine, cannabis and ecstasy for population aged 16–59 years;
- Denmark rates for cocaine and cannabis for population aged 16–64 years;
- Canada rate for opiates for Ontario population aged 18+ years, rate for cocaine and cannabis for national population aged 15+ years.

Cultural Neuroeconomics of Intertemporal Choice

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Abstract

According to theories of cultural neuroscience, Westerners and Easterners may have distinct styles of cognition (e.g., different allocation of attention). Previous research has shown that Westerners and Easterners tend to utilize analytical and holistic cognitive styles, respectively. On the other hand, little is known regarding the cultural differences in neuroeconomic behavior. For instance, economic decisions may be affected by cultural differences in neurocomputational processing underlying attention; however, this area of neuroeconomics has been largely understudied. In the present paper, we attempt to bridge this gap by considering the links between the theory of cultural neuroscience and neuroeconomic theory of the role of attention in intertemporal choice. We predict that (i) Westerners are more impulsive and inconsistent in intertemporal choice in comparison to Easterners, and (ii) Westerners more steeply discount delayed monetary losses than Easterners. We examine these predictions by utilizing a novel temporal discounting model based on Tsallis' statistics (i.e. a q-exponential model). Our preliminary analysis of temporal discounting of gains and losses by Americans and Japanese confirmed the predictions from the cultural neuroeconomic theory. Future study directions, employing computational modeling via neural networks, are briefly outlined and discussed.

Keywords: Cultural neuroscience, neuroeconomics, intertemporal choice, attention allocation, Tsallis' statistics, neural networks.