

1 Mental health in immigration detention: a comparison of foreign national ex-
2 prisoners and other detainees

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4 **Running head:** Mental Health of Foreign National Ex-Prisoners

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34 **Conflict of Interest**

35 CK is Medical and Research Director at the Helen Bamber Foundation, a human rights charity
36 working with asylum seekers and refugees, many of whom have had experiences of
37 immigration detention and the Royal College of Psychiatrists Lead on Refugee and Asylum
38 Mental Health.

39

40 **Data Availability**

41 The database that supports the findings of this study is available from the corresponding author
42 upon reasonable request.

43

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52

53

54 **Abstract**

55 **Background:** People held in Immigration Removal Centres have a range of vulnerabilities
56 relating both to disappointment at imminent removal from the country of hoped-for residence
57 and various antecedent difficulties. An important subgroup is of foreign national ex-prisoners
58 who have served a period of incarceration in the UK. Prisoners generally have higher rates of
59 mental disorders than the general population. It is, however, not clear whether foreign national
60 ex-prisoners in UK immigration removal centres have higher rates of mental disorders than
61 other detainees.

62 **Aims:** To compare the screened prevalence of mental disorders, levels of unmet needs and time
63 in detention between foreign national ex-prisoners and others in Immigration Removal Centres
64 in England.

65 **Methods:** We conducted a secondary analysis of cross-sectional survey data from a previously
66 published study (Sen et al., 2018) in one Immigration Removal Centre.

67 **Results:** The 28 foreign national ex-prisoners had been in immigration detention for longer
68 and reported greater levels of unmet needs than the 66 other detainees. The highest levels of
69 unmet needs among the foreign national ex-prisoners were in the areas of psychological distress
70 and intimate relationships. After adjusting for time spent in detention, there was evidence to
71 suggest that foreign national ex-prisoners had a higher screened prevalence of substance use
72 disorders, autism spectrum disorders and attention-deficit hyperactivity disorder than the other
73 detainees.

74 **Conclusions/implications for clinical practice:** This study supports the view that foreign
75 national ex-prisoners are a vulnerable group within immigration detention who have needs for
76 enhanced and specialist service provision, including appropriate arrangements for health
77 screening and active consideration to alternatives to their detention.

78 **Keywords:** foreign national ex-prisoners, immigration, detention, mental disorders

79 **Introduction**

80 Throughout the world, there has been a substantial increase in the numbers of people who are
81 seeking asylum or are refugees, and many states hold them in conditions of immigration
82 detention despite mounting evidence of mental illness and vulnerability in these groups, and
83 that harm can be caused by the process of detention itself (von Werthern et al., 2018).

84 In the United Kingdom (UK), similar issues arise, 24,400 people having entered immigration
85 detention throughout the year ending December 2019. The number of people detained at any
86 given time during 2019 ranged between 1637 and 1839 (Migration Observatory, May 2020).

87 Immigration detainees form a heterogeneous group that includes individuals who have claimed
88 asylum, new arrivals awaiting assessment to determine their right to enter the country, people
89 who have been refused permission to enter, visa-overstayers, and foreign national ex-prisoners
90 (Migration Observatory, May 2020; House of Commons Home Affairs Committee, March
91 2019). By the time that they are held as immigration detainees, these ex-prisoners are defined
92 as foreign nationals who have completed a prison sentence in the UK but transferred to
93 detention under immigration legislation, with a view to their removal from the UK. As people
94 who have been given a prison sentence in the UK, this further detention may either be in a
95 prison or in an immigration removal centre (IRC). A report from the House of Commons Home
96 Affairs Committee reported that, at one point in time at the end of December 2018, there were
97 944 foreign national ex-prisoners detained under immigration powers, accounting for 53% of
98 the detained population (House of Commons Home Affairs Committee, March 2019). The
99 overall number of UK immigration detainees has been on a downward trend since 2014, but
100 there was concern that the number of people being detained for over six months has increased,
101 many of whom are ex-prisoners (House of Commons Home Affairs Committee, March 2019).
102 The overall number has reduced further following the Covid-19 pandemic, with a
103 corresponding further increase in proportion of ex-prisoners – a recent estimate being over 90%

104 (Stevens, 2020). The existing literature has highlighted the mental vulnerability of foreign
105 national prisoners while serving their sentence but has yet to consider the range of issues they
106 face when they are subject to immigration detention afterwards (Sen, Exworthy, & Forrester,
107 2014).

108 Detention in IRCs can have negative consequences for an individual's mental health. People
109 subject to immigration detention are known to have high levels of anxiety, depression and post-
110 traumatic stress disorder (PTSD); further, there is an association between severity of presenting
111 psychological disorder and longer detention (von Werthern et al., 2018). A recent meta-analysis
112 including 534 adults in immigration detention estimated the prevalence rate of depression to
113 be 73.5% (95% CI 59.6-83.9%), of anxiety 64.7% (95% CI 47.4-78.9%) and of PTSD 46.4%
114 (95% CI 29.1-64.5%) (Baggio et al., 2020). These studies, however, were of all detainees and
115 did not distinguish between ex-prisoners and others. The estimates are higher than meta-
116 analytic prevalence estimates for similar disorders among the general prisoner population -
117 11.4% for depression (Fazel & Seewald, 2012), 6.2% for PTSD among male prisoners and
118 21.1% for PTSD among female prisoners (Baranyi, Cassidy, Fazel, Priebe, & Mundt, 2018).
119 This underscores the exceptional vulnerability of detainees generally but raises questions about
120 special needs varying between subgroups.

121
122 Foreign national ex-prisoners in the criminal justice system have been described as presenting
123 with more complex mental health needs than those experienced by the general offender
124 population (Narco, 2011) but are also likely to suffer from a range of other problems, including
125 isolation (e.g., separation from family, friends and the community), immigration uncertainties
126 (e.g., lack of information regarding their status, insufficient preparation for
127 release/deportation), language barriers, discrimination, and pre-existing trauma (Sen et al.,
128 2014; Barnoux & Wood, 2013; Narco, 2011; Borrill & Taylor, 2009; Bhui, 2007). In addition,

129 the prospect of deportation is a key factor underlying suicidal behaviour (Borrill & Taylor,
130 2009).

131

132 Various sources have evidenced a higher rate of mental health needs among foreign national
133 male prisoners (53%) than native male prisoners (37%) (HM Inspectorate of Prisons, July
134 2006; HM Prison Service, January 2008), most notably depression and stress (Birmingham,
135 2003). Rates of self-harm and suicidality amongst foreign national prisoners are also a cause
136 for concern (Bhui, 2007), accounting for nearly 20% of self-inflicted deaths in prisons in
137 England and Wales in 2015-16 despite representing only 12% of the prison population (Prisons
138 & Probation Ombudsman, 2016).

139

140 Due to the lack of UK citizenship and the complex nature of their immigration cases, foreign
141 national prisoners may be held for longer periods in immigration detention centres than other
142 detainees (Bosworth, 2011). About two-thirds of the foreign nationals completing a prison
143 sentence will be immediately detained in an IRC or a short-term holding facility (Independent
144 Chief Inspector of Borders and Immigration, 2019) but there has been little study of them and
145 their needs in this context. To our knowledge, only one study (Robjant, Robbins, & Senior,
146 2009), has examined their mental health while in an IRC. This found that 67% of them screened
147 positive for depression and 73% for anxiety (Robjant et al., 2009) and some substantial
148 differences in the prevalence of mental disorder between detained asylum seekers, detained
149 former prisoners and asylum seekers in the community (Robjant et al., 2009). Although this
150 study did not find the prisoner sub-group to be more psychologically vulnerable compared to
151 other detainees, the outcomes of interest were limited to self-completed rating scale measures
152 of psychological distress as opposed to formal diagnoses of specific mental disorders, and the
153 data were not statistically analysed.

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The aim of our study was to identify whether foreign national prisoners in one IRC differed from other detainees in screened prevalence rates of mental disorder, their level of unmet needs and their length of stay. We hypothesised that the ex-prisoners' subgroup would have higher screened prevalence rates of mental disorders, greater levels of unmet needs and longer lengths of stay in detention than other detainees.

Methods

Ethical approvals

Ethical approval for the primary study was obtained from the NRES ethics committee of East of England and from the National Offender Management Service (ref: 13/EE/0182).

Data sources and sample

The study data were derived from a cross-sectional study (Sen et al., 2018) conducted in a single IRC in Dover holding about 400 men. The response rate in the initial recruitment phase was lower than anticipated, therefore a second phase was introduced using a different sampling method. Phase 1 took place in June/July 2014 and Phase 2 in January/February 2015. Eligibility criteria for participation were: being born outside the European Union, being over the age of 18 and having a working knowledge of the English language. Figure 1 shows more details and the sampling is further described elsewhere (Howells & Sen, 2020; Sen et al., 2018).

Consenting men were interviewed one to one in private by researchers with a clinical background who had been trained to use the screening tools by PS (consultant psychiatrist). Inter-rated reliability was assessed by joint ratings (Sen et al., 2018).

179

180 Participants were labelled as foreign national ex-prisoners if they had a history of imprisonment
181 in the UK. Detainees without a history of imprisonment were classified as non-foreign national
182 ex-prisoners, or “other detainees”. Foreign national ex-prisoners were excluded from the
183 analyses if their country of imprisonment was outside the UK. The reason for this was because
184 it was not possible to ascertain the legal standards or threshold for conviction that had been
185 followed in other countries, therefore individuals who had been imprisoned abroad were not
186 deemed to be comparable to those who had been imprisoned in the UK.

187

188 Demographic characteristics included in this study were: age, nationality (grouped by
189 continent), educational attainment (*none, secondary, undergraduate, postgraduate*) and marital
190 status (*single, cohabiting, engaged, married, divorced*). Total time in detention was recorded
191 as the time in days spent in immigration detention (in any setting) until the time of interview.
192 Information was also collected on year of arrival in the UK. From this it was possible to
193 estimate the approximate duration of years participants had been living in the UK, by
194 calculating the number of years between year of arrival and 2015 (when the final interviews
195 took place).

196

197 **Measures**

198 The interview included several measurement tools that screened for mental disorders and the
199 Camberwell Assessment of Needs – Forensic Version (CANFOR). Validated cut-off scores
200 were used to determine caseness for all measures, except the CANFOR, which was used as
201 described below.

202

203 *The Mini International Neuropsychiatric Interview (MINI)* (Sheehan et al., 1998) is a short,
204 interviewer-administered, structured diagnostic tool used in clinical and research settings to
205 identify a range of mental disorders that are included in the DSM-IV and ICD-10. There was a
206 cut-off score for each condition.

207

208 *The Standardised Assessment of Personality Abbreviated Scale (SAPAS)* (Moran et al., 2003)
209 is an eight-item interviewer-administered screening tool used to identifying individuals at high
210 risk of personality disorder. Increasing scores (from 0 to 8) represent increasing likelihood of
211 meeting diagnostic criteria for any personality disorder, with a cut-off score to screen positive.

212

213 *The Autism Spectrum Quotient 10 (AQ-10)* (Allison, Auyeung, & Baron-Cohen, 2012) is a ten-
214 item screening tool designed to be used by healthcare professionals to identify “red flags” for
215 autism spectrum disorders (ASD) among adults, adolescents, and adults, which indicate the
216 need for referral for formal diagnostic assessment, again with a cut-off score to screen positive.

217

218 *The Adult ADHD self-report Scale, Part A (ASRS)* (Kessler et al., 2005) is an eighteen-item
219 self-report screening tool for adult attention-deficit hyperactivity disorder (ADHD). Part A
220 consists of six of these questions which is used to identify adults with symptoms that are highly
221 consistent with ADHD and therefore warrant referral for formal diagnostic assessment. Again,
222 there was a cut-off score to screen positive.

223

224 *The Camberwell Assessment of Needs – Forensic Version (CANFOR)* (Thomas et al.,
225 2008) was used to identify the level of “unmet needs” for each participant. This tool is designed
226 as an individual needs assessment for forensic mental health service users. Needs are assessed
227 in twenty-five areas which span a range of health, social, clinical and functional domains,

228 including food, accommodation, money, physical health, psychological distress, safety to self
229 and others and intimate relationships (Thomas et al., 2008). If the interviewee identifies needs
230 in a given area, it is labelled “met” or “unmet” based on whether interventions are in place. For
231 the purpose of this analysis, needs were dummy coded as “met”, “unmet” or “no need/not
232 applicable”. Unmet needs were summed for each individual across the whole sample, forming
233 a continuous variable with possible scores of 0 to 25. In addition, the distribution of unmet
234 needs in each domain among foreign national ex-prisoners and other detainees was presented
235 in a table.

236

237 **Statistical analyses**

238 The analyses focused on nine key mental health-related areas of interest, identified from
239 previous literature highlighting a group of key vulnerabilities for foreign national ex-prisoners
240 (Bosworth M, 2017; Prisons & Probation Ombudsman, 2016; Bosworth M, 2015; Bosworth,
241 2011; Borrill & Taylor, 2009; Bhui, 2007). These were: *depression*, *generalised anxiety*
242 *disorder (GAD)*, *mood disorder with psychotic features*, *suicidality*, *post-traumatic stress*
243 *disorder (PTSD)*, *drug and / or alcohol problems*, *personality disorder*, *autism spectrum*
244 *disorder (ASD)* and *attention-deficit hyperactivity disorder (ADHD)*. Collectively, these are
245 referred to as “mental disorders”.

246

247 Participants were grouped together as having a *personality disorder* if they were screened as
248 such through the SAPAS and/or were assessed as having *antisocial personality disorder* using
249 the MINI. Similarly, individuals were grouped as having a *drug and/or alcohol problem* if they
250 reported current or lifetime abuse and/or dependence of either drugs or alcohol.

251

252 Statistical analyses were performed using STATA version 16.0. There were no missing data
253 for the variables included in the analyses. Detainee status was used as a dichotomous variable
254 - foreign national ex-prisoner or other - to compare the sample characteristics, time spent in
255 detention, screened prevalence rate of mental disorders and level of unmet needs.

256

257 The distributions of continuous variables were tested for normality. Time spent in detention,
258 duration of living in the UK, and unmet needs scores, were not normally distributed, therefore
259 the two-sample Wilcoxon rank-sum (Mann-Whitney U) test was used to test for differences
260 between ex-prisoners and others on these variables.

261

262 Logistic regression was performed, with foreign national ex-prisoner/not as the independent
263 variable and presence/absence of mental disorder the dependent variable (unadjusted model).

264 A second model was run also including total time in detention as a dependent variable (adjusted
265 model). Given the small numbers of positive cases for some mental disorders, it was decided
266 not to adjust for further variables such as demographic data because the complex models are
267 unsustainable with the small numbers involved.

268

269 An additional analysis was performed to model the association between ex-prisoner/not status
270 and mental disorders, adjusted for duration living in the UK, and is presented in the
271 Supplementary Materials.

272

273

274 **Results**

275 Over both phases of the study, 101 detainees were recruited and took part in interviews. As
276 shown in Figure 1, the study participation rate was low – not quite 40% overall. Seven foreign

277 national ex-prisoners were excluded from the analyses as their country of imprisonment was
278 outside the UK. This left data for analysis from 94 participants: 28 foreign national ex-prisoners
279 and 66 of other detainees who did not have a history of imprisonment.

280

281 The characteristics of foreign national ex-prisoners and other detainees were similar (Table1).
282 The median age was 36 years (IQR 14.3, range 21-59) among the ex-prisoners and 29 years
283 (IQR 6.8, range 18-57) among other detainees. The largest group of nationalities among the
284 ex-prisoners were those of African countries (39%), whereas the largest group of the other
285 detainees were of an Asian nationality (74%). The earliest reported year of arrival in the UK
286 was 1980 and the latest a few weeks before the interview in 2015. The median approximate
287 length of stay in the UK among the ex-prisoners was almost three times as long as among the
288 other detainees (median 14 years (IQR 5.0, range 3-35) and 5 years (IQR 3.0, range 0-29),
289 respectively). The length of sentence among the foreign national ex-prisoners varied
290 considerably from 60 to 6205 days (median 540 days, IQR 907.5).

291

292 The median total time spent in immigration detention was nearly four times as long among ex-
293 prisoners as among the other detainees (165 days (IQR 218.3, range 8-2150); 44 days (IQR,
294 68.8, range 1-1095); Wilcoxon rank-sum test $z = -4.3, p < 0.01$).

295

296 Table 2 shows that the screened prevalence rates of all mental disorders were high in both
297 groups. Depression or mood disorder with psychotic features affected more than half of each
298 group, as did personality disorder. The screened prevalence rates for substance use disorders,
299 ASD and ADHD were significantly higher among ex-prisoners than among the other detainees.
300 Differences in substance use disorder, ASD and ADHD prevalence rates remained after
301 adjusting for time spent in detention, however the resulting confidence intervals were large

302 (drug and/or alcohol problems OR 9.70 (95% CI 2.60-36.28), ADHD OR 5.87 (95% CI 1.50-
303 22.99), ASD OR 6.43 (95% CI 1.76-23.45). Adjusting for duration living in the UK instead of
304 time in detention did not change the overall findings (Supplementary Table 1).

305

306 The summed CANFOR score, representing level of unmet needs, ranged from 0 to 13 across
307 the sample. The median score among the ex-prisoners was 7 (IQR 4.3, range 3-12) and 5.0
308 among the others (IQR 4.0, range 0-13) The Wilcoxon rank-sum test provided strong evidence
309 to suggest a true difference in median CANFOR score between the two groups ($z = -2.9$,
310 $p < 0.01$). Table 3 displays the distribution of CANFOR items among foreign national ex-
311 prisoners and other detainees. All foreign national ex-prisoners reported having a need (met or
312 unmet) in the domain of *psychological distress*. Twenty-five (89%) reported unmet needs
313 related to *psychological distress*, compared to 42 of the 66 other detainees (64%). Other high
314 levels of unmet needs among foreign national ex-prisoners were found in the domains of
315 *intimate relationships* (89%), *sexual expression* (79%) and *company* (79%).

316

317 **Discussion**

318 The key finding of this study is that, among immigration detainees, foreign national ex-
319 prisoners had higher screened prevalence rates of specific mental disorders than people
320 detained for other reasons. They also had more unmet needs than other detainees, with common
321 concerns including self-reported psychological distress and issues surrounding interpersonal
322 relationships.

323

324 The screened prevalence rate of depression found in this study was similar to that found by
325 Robjant and colleagues (57% vs 67%), although in our study the difference did not quite reach
326 significance, but the screened prevalence of anxiety differed greatly (4% vs 73%) (Robjant et

327 al., 2009). The low screened prevalence rate of GAD across our detainee sample does seem
328 surprising. It may reflect the use of different measures for mental disorder; this study used the
329 MINI, which is a structured diagnostic interview covering all disorder types, whereas Robjant
330 et al. used the Hospital Anxiety and Depression Scale, which is a self-report questionnaire
331 focussing on depression and anxiety alone, and with a lot more questions directed at each.
332 Robjant et al achieved a much higher response rate than this study (75% vs 39%) which may
333 explain why a lower screened prevalence estimate for anxiety was found, i.e. perhaps those
334 with significant anxiety were less willing to participate in research. In addition, Robjant et al
335 recruited from four different IRCs, whereas this study only recruited from one and therefore
336 may not have captured any potential differences between IRC environments as regards the
337 development and maintenance of anxiety.

338

339 It was thought that the ex-prisoner group would be more likely to have spent longer in detention
340 due to the complex nature of their immigration status (Bosworth, 2011), and our study
341 confirmed that. There is some evidence to suggest that detainees who have experienced
342 interpersonal trauma and a longer time in detention are more likely to receive higher scores on
343 depression and anxiety questionnaires and cope more poorly than those detained for shorter
344 time periods (Robjant et al., 2009), but the higher screened prevalence of substance use
345 disorders, ASD and ADHD found in our study remained even when controlling for time in
346 detention.

347

348 To set the study in context of national developments in the UK, the Home Office commissioned
349 a review into the welfare in immigration detention of vulnerable persons, reported in January
350 2016 (Shaw, 2016). This report contained 64 recommendations, most of which were accepted
351 by the Home Office. This included agreement to conduct a clinical assessment of the level and

352 nature of mental health concerns in the immigration detention estate and to develop a joint
353 action plan between Home Office, NHS England and the Department of Health to improve
354 provision of mental health services in the detention estate. Another recommendation included
355 introducing a single detention gatekeeper function. One of the key elements of the Home Office
356 response was to set up an Adults at Risk policy, which accepted a wider definition of risk,
357 including individuals with mental health vulnerabilities.

358

359 In a follow-up review to assess the response of the Home Office to the previous report (Shaw,
360 2018) particular concern was expressed about the application of the Adults at Risk policy to
361 ex-prisoner detainees. A number of these were identified in the follow-up Shaw report as ‘very
362 vulnerable with complex needs’, but that their vulnerability was not being given sufficient
363 weight due to Home Office case workers being ‘risk-averse’. This anxiety about re-offending
364 was further increased as these ex-prisoner detainees were not eligible to access support in the
365 community to prevent re-offending. The follow-up Shaw report recommended Home Office
366 working with the National Probation Service and Community Rehabilitation Companies to
367 consider community support and supervision for them. This group is also specifically excluded
368 from automatic consideration for bail, and the second Shaw report accordingly commented that
369 ‘in consequence, there need to be more safeguards in place rather than fewer.’ Despite this,
370 however, the most recent report by the independent Chief Inspector of Borders and
371 Immigration suggested that there existed a culture to detain for this group, where public interest
372 in deportation outweighed risk of harm to detainee (Independent Chief Inspector of Borders
373 and Immigration, 2019).

374

375 The official stance towards ex-prisoner detainees has been described as ‘double punishment’
376 where imprisonment is merged with detention and deportation (Turnbull & Hasselberg, 2017),

377 allowing non-citizen prisoners to be detained past the end of their criminal sentence, thus
378 providing a legal sanction for the differential treatment of foreign nationals within the British
379 legal system (Aliverti, 2016; Kaufman & Bosworth, 2013). Rehabilitative work for any
380 prisoner should begin at the point when they start the prison sentence, addressing associated
381 challenges like language and culture, but any rehabilitation work done with a foreign national
382 prisoner could become less relevant if he or she is not identified for deportation at an early
383 stage in their sentence. In response to the first Shaw report (Shaw, 2016), criminal casework
384 internal review panels were set up, but though this led to a slight reduction in the overall length
385 of detention for this group, concerns around risk as well as reluctance to fund bail
386 accommodation for them, and the reluctance of foreign national ex-prisoners themselves to be
387 dispersed to other parts of the country where they have no knowledge of people or places, as
388 well as shortage of probation staff have been barriers to release from immigration detention
389 (Independent Chief Inspector of Borders and Immigration, 2019). This policy is now brought
390 into sharp focus following the COVID-19 pandemic, where foreign national prisoners
391 constitute most of the UK detainee population.

392

393 Mental health in-reach teams working in IRCs should be aware that, while the screened
394 prevalence rates of mental disorders are high among all detainees, ex-prisoners are particularly
395 likely to need engagement from a range of relevant services, including health and social
396 services, as well as UK Border Agency input. Service commissioners and planners should
397 consider specific needs assessments, potentially leading to enhanced service provision, for this
398 group.

399

400 **Strengths and limitations**

401 A unique element of this study is that, to the best of our knowledge, it is the first to screen for
402 neurodevelopmental disorders. Although the number of cases were small, the results strongly
403 suggest a higher screened prevalence rate of ASD and ADHD among the ex-prisoner group,
404 suggesting that these conditions should be screened for on entry to an IRC.

405

406 There were, however, important limitations to the study. It was restricted to one, male-only,
407 IRC. It was conducted between June 2014 and February 2015, and the IRC where the study
408 was conducted closed in 2015. Thus, the results might not be fully representative of the current
409 situation. The study findings may, however, be even more relevant currently as, in the UK at
410 least, foreign national ex-prisoners now constitute the large majority of people in the detention
411 estate. The exclusion criteria meant that only participants with a sound knowledge of English
412 were able to participate, as we did not have funding for interpreters. It is thus likely that the
413 results underestimated the true screened prevalence rate of mental disorders among all
414 detainees, as non-English speakers would arguably constitute a more vulnerable group (Sen et
415 al., 2014), but we can think of no reason why this should affect the ex-prisoners and others
416 differentially. Self-report measures were used to measure some of the mental disorders
417 (personality disorders, ADHD and ASD), which are more prone to information bias than
418 diagnostic interviews. The biggest concern is that the response rate was low and we do not
419 know how agreeing to participate or not differed between ex-prisoners and others, or whether
420 those with mental health difficulties were more or less likely to participate. Strategies
421 considering how to increase response rate for such populations, learning from this study, have
422 been reported elsewhere (Howells & Sen, 2020). The resulting relatively small sample size
423 meant that some of the statistical analyses were likely under-powered to detect associations
424 between ex-prisoner status and screened prevalence rate of mental disorders. Finally, the
425 associations between foreign national ex-prisoner status and screened prevalence of mental

426 disorders may have been affected by confounding, which could not be adequately controlled
427 for due to the relatively small sample size.

428

429

430 **Conclusion**

431 This study highlights the need for targeted mental health screening and needs assessment for
432 foreign national ex-prisoners at the point when they are transferred into immigration reception
433 centres, along with careful monitoring and active treatment for those who screen positive for
434 mental health difficulties. There is a strong case for their ex-prisoner status being flagged as a
435 vulnerability factor and they be subject to enhanced screening processes and access to prior
436 healthcare records. At the least, information should be sought from the prison about any
437 potential mental health vulnerability identified in prison.

438

439 Given that so many people remaining in immigration detention are ex-prisoners, we need better
440 resourced studies to build trust with them and engage a much higher proportion of the English
441 speakers as well as allowing for availability of interpreters for those only with languages other
442 than English. Women, albeit in much smaller numbers, are likely to have special and different
443 needs, require to be studied separately.

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583 **Figures**

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Figure 1: Participant selection and recruitment



Figure 1 Footnotes

Phase one: Random sampling. Phase two: Opportunity sampling. Adapted from the paper of the parent study (Sen et al., 2018)

FNEP: Foreign National Ex-Prisoner; IRC: Immigration Removal Centre; UK: United Kingdom

393 **Table 1:** Sample characteristics

	Foreign National Ex-Prisoners N=28	Non-Foreign National Ex-Prisoners N=66
	n, % (95% CI)	n, % (95% CI)
Nationality (by continent)		
Africa	11, 39.3 (23.1-58.3)	10, 15.2 (8.3-26.1)
Asia	7, 25.0 (12.3-44.2)	49, 74.2 (62.2-83.4)
Europe	3, 10.7 (3.4-28.8)	3, 4.5 (1.5-13.3)
North America and Caribbean	5, 17.9 (7.5-36.7)	4, 6.1 (2.3-15.2)
South America	1, 3.6 (0.5-21.9)	0, 0.0
Unclear	1, 3.6 (0.5-21.9)	0, 0.0
Educational attainment		
None	5, 17.9 (7.5-36.7)	3, 4.5 (1.5-13.3)
Secondary	18, 64.3 (45.1-79.8)	27, 40.9 (29.6-53.2)
Undergraduate	4, 14.3 (5.4-32.8)	29, 43.9 (32.4-56.2)
Postgraduate	1, 3.6 (0.5-21.9)	7, 10.6 (5.1-20.8)
Marital status		
Single	22, 78.6 (59.5-90.1)	49, 74.2 (62.2-83.4)
Cohabiting	2, 7.1 (1.8-24.8)	3, 4.5 (1.5-13.3)
Engaged	0, 0.0	1, 1.5 (0.2-10.2)
Married	4, 14.3 (5.4-32.8)	12, 18.2 (10.5-29.5)
Divorced	0, 0.0	1, 1.5 (0.2-10.2)
	Median (IQR)	Median (IQR)
Age (years)	36 (14.3)	29 (6.8)
Total time spent in detention (days)	165 (218.3)	44 (68.8)
Approximate duration living in UK (years)	14 (5.0)	5 (3.0)

Table 1 Footnotes

CI: Confidence Interval; UK: United Kingdom

599 **Table 2:** Logistic regression analyses for the associations between screened prevalence of mental disorders and foreign national ex-prisoner
600 status in Dover Immigration Removal Centre
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		Foreign National Ex-Prisoners N=28 n, % (95% CI)	Non-Foreign National Ex-Prisoners N=66 n, % (95% CI)	Unadjusted Model		Adjusted Model*	
				OR (95% CI)	p	OR (95% CI)	p
Depression	Present	16, 57.1 (38.9-74.0)	31, 47.0 (35.3-58.9)	1.51 (0.62-3.67)	0.37	1.99 (0.74-5.34)	0.17
	Absent	12, 42.9 (26.0-61.1)	35, 53.0 (41.1-64.7)	<i>Reference</i>	-	<i>Reference</i>	-
GAD	Present	1, 3.6 (0.4-15.5)	8, 12.1 (5.9-21.6)	0.27 (0.03-2.26)	0.23	0.37 (0.04-3.20)	0.37
	Absent	27, 96.4 (84.5-99.6)	58, 87.9 (78.4-94.1)	<i>Reference</i>	-	<i>Reference</i>	-
Mood disorder with psychotic features	Present	6, 21.4 (9.5-38.9)	2, 3.0 (0.6-9.4)	1.87 (0.63-5.54)	0.26	2.30 (0.73-7.23)	0.16
	Absent	22, 78.6 (61.1-90.5)	64, 97.0 (90.6-99.4)	<i>Reference</i>	-	<i>Reference</i>	-
Suicidality	Present	18, 64.3 (45.8-79.9)	37, 56.1 (44.0-67.6)	1.41 (0.57-3.52)	0.46	1.50 (0.56-4.05)	0.42
	Absent	10, 35.7 (20.1-54.2)	29, 43.9 (32.4-56.0)	<i>Reference</i>	-	<i>Reference</i>	-
PTSD	Present	6, 21.4 (9.5-38.9)	11, 16.7 (9.2-27.0)	1.36 (0.45-4.14)	0.58	1.43 (0.44-4.60)	0.55
	Absent	22, 78.6 (61.1-90.5)	55, 83.3 (73.0-90.8)	<i>Reference</i>	-	<i>Reference</i>	-
Drug and/or alcohol problems	Present	11, 39.3 (23.0-57.7)	4, 6.1 (2.1-13.8)	10.03 (2.83-35.50)	<0.01	9.70 (2.60-36.28)	<0.01
	Absent	17, 60.7 (42.3-77.0)	62, 93.9 (86.2-97.9)	<i>Reference</i>	-	<i>Reference</i>	-
Personality disorder	Present	18, 64.3 (45.8-79.9)	36, 54.5 (42.6-66.1)	1.50 (0.60-3.74)	0.38	2.12 (0.75-5.97)	0.16
	Absent	10, 35.7 (20.1-54.2)	30, 45.5 (33.9-57.4)	<i>Reference</i>	-	<i>Reference</i>	-
ASD	Present	8, 28.6 (14.5-46.8)	5, 7.6 (2.9-15.8)	4.88 (1.43-16.63)	0.01	6.43 (1.76-23.45)	<0.01
	Absent	20, 71.4 (53.2-85.5)	61, 92.4 (84.2-97.1)	<i>Reference</i>	-	<i>Reference</i>	-
ADHD	Present	7, 25.0 (11.9-42.9)	4, 6.1 (2.1-13.8)	5.17 (1.37-19.43)	0.02	5.87 (1.50-22.99)	0.01
	Absent	21, 75.0 (57.1-88.1)	62, 93.9 (86.2-97.9)	<i>Reference</i>	-	<i>Reference</i>	-

Table 2 Footnotes

* Adjusted Model: Model adjusted for total time spent in detention (in days)

CI: Confidence Interval; OR: Odds Ratio; GAD: Generalised Anxiety Disorder; PTSD: Post-Traumatic Stress Disorder; ADHD: Attention-deficit Hyperactivity Disorder; ASD: Autism Spectrum Disorder

Table 3: The distribution of needs among foreign national ex-prisoners and other detainees, identified using the CANFOR

CANFOR Item	Foreign National Ex-Prisoners N=28			Non-Foreign National Ex-Prisoners N=66		
	Unmet need n (%)	Met need n (%)	No need/Not applicable n (%)	Unmet need n (%)	Met need n (%)	No need/Not applicable n (%)
Accommodation	4 (14.3)	19 (67.9)	5 (17.9)	7 (10.6)	46 (69.7)	13 (19.7)
Food	6 (21.4)	21 (75.0)	1 (3.6)	14 (21.2)	52 (78.8)	0 (0.0)
Living environment	0 (0.0)	22 (78.9)	6 (21.4)	2 (3.0)	52 (78.8)	12 (18.2)
Self-care	1 (3.6)	19 (67.9)	8 (28.6)	4 (6.1)	46 (69.7)	16 (24.2)
Daytime activities	13 (46.4)	12 (42.9)	3 (10.7)	28 (42.4)	35 (53.0)	3 (4.5)
Physical health	11 (39.3)	14 (50.0)	3 (10.7)	27 (40.9)	31 (47.0)	8 (12.1)
Psychotic symptoms	5 (17.9)	6 (21.4)	17 (60.7)	4 (6.1)	23 (34.8)	39 (59.1)
Information	7 (25.0)	6 (21.4)	15 (53.6)	14 (21.2)	9 (13.6)	43 (65.2)
Psychological distress	25 (89.3)	3 (10.7)	0 (0.0)	42 (63.6)	18 (27.3)	6 (9.1)
Safety to self	6 (21.4)	10 (35.7)	12 (42.9)	11 (16.7)	28 (42.4)	27 (40.9)
Safety to others	1 (3.6)	13 (46.4)	14 (50.0)	5 (7.6)	25 (37.9)	36 (54.5)
Alcohol	3 (10.7)	1 (3.6)	24 (85.7)	1 (1.5)	2 (3.0)	63 (95.5)
Drugs	6 (21.4)	2 (7.1)	20 (71.4)	1 (1.5)	2 (3.0)	63 (95.5)
Company	22 (78.6)	6 (21.4)	0 (0.0)	36 (54.5)	27 (40.9)	3 (4.5)
Intimate relationships	25 (89.3)	0 (0.0)	3 (10.7)	47 (71.2)	3 (4.5)	16 (24.2)
Sexual expression	22 (78.6)	0 (0.0)	6 (21.4)	45 (68.2)	2 (3.0)	19 (28.8)
Childcare	11 (39.3)	0 (0.0)	17 (60.7)	9 (13.6)	0 (0.0)	57 (86.4)
Basic education	4 (14.3)	20 (71.4)	4 (14.3)	13 (19.7)	41 (62.1)	12 (18.2)
Telephone	0 (0.0)	27 (96.4)	1 (3.6)	1 (1.5)	63 (95.5)	2 (3.0)
Transport	1 (3.6)	14 (50.0)	13 (46.4)	2 (3.0)	35 (53.0)	29 (43.9)
Money	8 (28.6)	9 (32.1)	11 (39.3)	8 (12.1)	28 (42.4)	30 (45.5)
Benefits	4 (14.3)	2 (7.1)	22 (78.6)	2 (3.0)	4 (6.1)	60 (90.9)
Treatment	5 (17.9)	2 (7.1)	21 (75.0)	6 (9.1)	9 (13.6)	51 (77.3)
Sexual offences	0 (0.0)	0 (0.0)	28 (100.0)	0 (0.0)	0 (0.0)	66 (100.0)
Arson	0 (0.0)	0 (0.0)	28 (100.0)	0 (0.0)	0 (0.0)	66 (100.0)

Table 3 Footnotes

CANFOR: The Camberwell Assessment of Needs – Forensic Version

604 **Supplementary Materials**

605

606

607 **Supplementary Table 1:** Logistic regression analyses for the associations between screened
 608 prevalence of mental disorders and foreign national ex-prisoner status in Dover Immigration
 609 Removal Centre, adjusted for approximate duration living in the UK

610

		Adjusted Model*	
		OR (95% CI)	p
Depression	Present	2.21 (0.69-7.06)	0.18
	Absent	<i>Reference</i>	-
GAD	Present	0.33 (0.03-3.90)	0.38
	Absent	<i>Reference</i>	-
Mood disorder with psychotic features	Present	1.72 (0.42-7.00)	0.45
	Absent	<i>Reference</i>	-
Suicidality	Present	1.53 (0.48-4.80)	0.47
	Absent	<i>Reference</i>	-
PTSD	Present	1.40 (0.32-6.04)	0.65
	Absent	<i>Reference</i>	-
Drug and/or alcohol problems	Present	24.03 (3.97-145.35)	<0.01
	Absent	<i>Reference</i>	-
Personality disorder	Present	2.19 (0.67-7.18)	0.20
	Absent	<i>Reference</i>	-
ASD	Present	4.10 (0.81-20.76)	0.09
	Absent	<i>Reference</i>	-
ADHD	Present	8.74 (1.46-52.19)	0.02
	Absent	<i>Reference</i>	-

611

612 **Supplementary Table 1 Footnotes**

*Adjusted Model: model adjusted for approximate duration living in the UK (time in years from year of arrival in the UK to 2015)

OR: Odds Ratio; CI: Confidence Interval; GAD: Generalised Anxiety Disorder; PTSD: Post-Traumatic Stress Disorder; ADHD: Attention-deficit Hyperactivity Disorder; ASD: Autism Spectrum Disorder