Structural Deficits in the health care of Prisoners: Results of a cross-sectional Analysis from German Prisons

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Original Article

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Abstract:

Healthcare in prisons offers key opportunities and challenges for public health management. This study analyzes the prevalence of chronic diseases, health differences between prisoners with and without a migration background, care deficits, and preventive measures in German prisons. Based on a nationwide survey of 62 prisons (36% response rate), the results show that 41-50% of prisoners have at least one chronic illness, with significantly higher rates of depression (21-30%) and hepatitis C (11-20%) compared to the general population. Prisoners with a migration background also have a higher prevalence of infectious diseases and drug addiction. While the availability of medication is predominantly rated as good, there are deficits in the updating of positive lists and

in transition management. Prevention was rated as effective, but challenges remain in the transition to extramural care. The results emphasize the need for targeted reforms in the prison system, including culturally sensitive approaches, improved prevention, and aftercare and the integration of prisons into the public healthcare system.

Introduction

Prisons are places with unique challenges in the area of healthcare. In Germany, medical care for prisoners is based on the principle of equivalence, which aims to ensure that prisoners receive medical care that is equivalent to that of the general population (§2 StVollZG; WHO, 2007). However, studies show that the health situation of prisoners is often already worse than that of the general population when they enter prison due to socio-economic disadvantages and risky behavior such as drug abuse (Opitz-Welke et al., 2018). At the same time, specific prison conditions, such as isolation and a lack of stimuli, contribute to exacerbating health problems (Fazel et al., 2017). This applies, in particular, to chronic illnesses, infectious diseases and mental disorders, which occur at a significantly higher prevalence among prisoners than in the general population (RKI, 2021).

However, imprisonment also offers the opportunity to implement targeted health measures in order to improve the health of prisoners while at the same time protecting society from the spread of disease ("Prison Health is Public Health", WHO, 2003). Despite these potential opportunities, the reality in German prisons shows structural deficits in the provision of resources, prevention, and intramural healthcare (Keppler et al., 2010).

This publication examines healthcare in German prisons from the perspective of public health management and sheds light on the connections between healthcare, the prevalence of illnesses, and resocialization measures. The aim is to identify starting points for improved care and sustainable resocialization through targeted public health measures. The analysis is based on data from a nationwide survey of German prisons and a comparison with data from the general population and international studies.

Methodology

This study is based on a nationwide survey that was sent to all 172 prisons in Germany. The aim was to systematically analyze the state of health, the care situation, and the preventive measures in the facilities. A total of 62 prisons took part in the survey, which corresponds to a response rate of 36%.

Study design and data collection

Data was collected using a standardized questionnaire that covered the most important areas of healthcare in the prison system. The questionnaire was divided into four main areas:

1. **Prevalence of chronic diseases:** The prevalence of selected diseases, such as depression, obesity, hepatitis C, and addictions, was estimated and compared with data from the general population.
2. **Cultural differences:** The health situation of detainees with and without a migration background was analyzed in a differentiated manner.
3. **The supply situation:** Questions were asked about the availability of medication, the frequency of updates to the positive lists, and the quality of the treatment regime.
4. **Prevention and aftercare:** The effectiveness of preventive measures and the challenges in the transition from intramural to extramural care were analyzed.

The survey was aimed at the medical directors of the prisons. In order to ensure the comparability of the data, closed response formats were used, such as percentages and Likert scales (e.g., "very good" to "not sufficient"). The complete questionnaire can be found in Appendix I of the paper.

Evaluation and statistical analyses

The data was analyzed descriptively, whereby frequencies and percentages were calculated. The Mann-Whitney U test was used to compare

different subgroups (e.g., German prisoners vs. prisoners with a migration background). This test was chosen because the response scales were ordinal and the sample sizes were limited. Results with a p-value <0.05 were considered statistically significant.

Data basis and limitations

The data collected represents around a third of German prisons, which provides a solid basis for analysis. Nevertheless, it must be taken into account that the response rate does not cover all facilities across the board, meaning that distortions due to self-selection cannot be ruled out. In addition, some of the information provided by respondents is based on estimates and subjective perceptions, which can limit the validity of individual results. Despite these limitations, the study provides a comprehensive insight into healthcare and prevention in prisons and offers important starting points for further public health measures.

Results

The results of the survey provide a comprehensive insight into the health situation, care, and prevention in German prisons. The key findings include the prevalence of chronic illnesses, cultural differences between prisoners with and without a migration background, the care situation, and the evaluation of preventative measures.

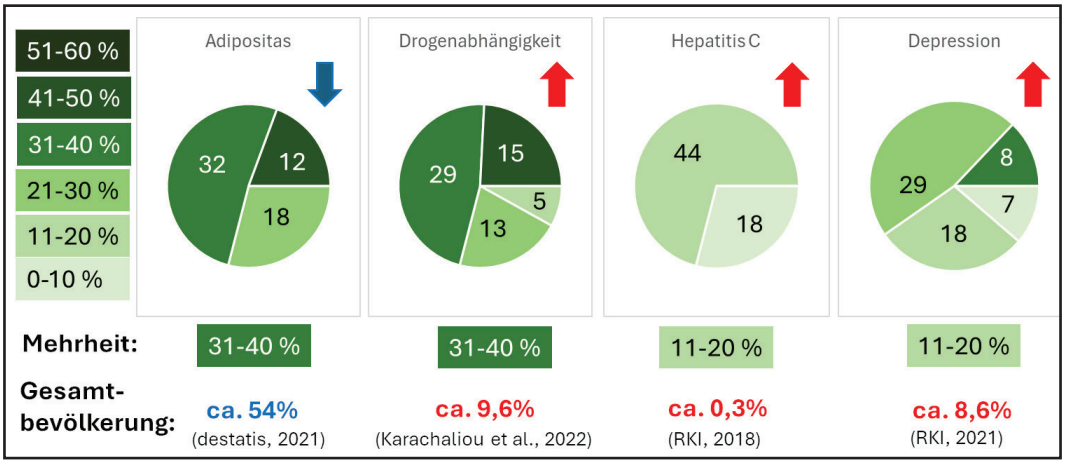
Prevalence of chronic diseases

The survey revealed that 41-50% of prisoners have at least one chronic illness. This figure is comparable to the general male population, in which around 46.4% have at least one chronic illness (RKI, 2021). However, certain illnesses occurred significantly more frequently: Depression was estimated to occur in 21-30% of inmates, compared to 8.6% in the general male population. At 11-20%, hepatitis C also had a significantly higher prevalence than in the general population (0.3%) (RKI, 2021). Obesity, on the other hand, was less common among prisoners (31-40%) than in the general population (54%) (Federal Statistical Office, 2024). A summarized presentation can be found in Figure 1.

Cultural differences and health inequalities

Prisoners with a migrant background showed poorer health scores than German prisoners in several categories. In particular, infectious diseases, such as hepatitis C (19-30% vs. 11-20%) and drug addiction (41-50% vs. 31-40%), were

Figure 1 Summarizing the most important differences between the frequency of certain diseases in prisoners and in the (male) general population in Germany. The numbers in the diagrams describe the number of votes cast by the prisons for this spectrum (n=62).



more common among prisoners with a migrant background. These differences were underpinned by the statistical analysis. The Mann-Whitney U test showed a p-value of <0.0001 for hepatitis C, indicating a statistically significant difference between the two groups. A significant difference was also found for drug addiction ($p = 0.013$), with detainees with a migration background showing significantly higher prevalence rates. These differences are shown in Figure 2.

However, no significant differences were found for other diseases, such as cardiovascular diseases and diabetes ($p > 0.05$), which indicates that these diseases are evenly distributed in both groups. The results emphasize that health inequalities in the prison system are particularly pronounced for infectious diseases and addictions. These inequalities highlight the need to develop culturally sensitive approaches and targeted prevention programs for prisoners with a migrant background.

The supply situation

The availability of medication was rated as "very good" or "good" by 80% of the facilities surveyed, while 20% rated the supply as "limited." New medications are only added to the positive lists in most institutions every few years, which limits the timeliness of treatment options. The assessment of the treatment regime for specific illnesses showed a mixed picture: While addiction disorders were often perceived as better treated than outside prison, care for cancer and depression was more often rated as worse. A graphical summary can be found in Figure 3.

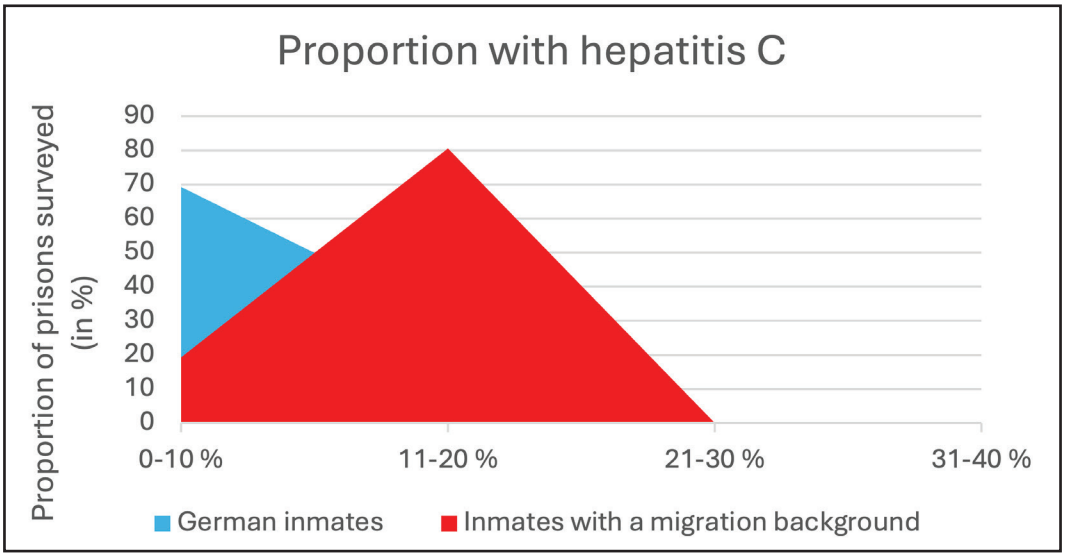
Prevention and state of health on release from prison

The majority of prevention measures in prisons were rated as "effective" (35%) or "very effective" (52%). However, many facilities reported problems with the transition from intramural to extramural care after release. Common difficulties included a lack of continuity of medical care (88.7%), social and financial problems (83.9%), and insufficient coordination between facilities (88.7%). The state of health on release from prison was assessed as "unchanged" or "worse" in 71% of the facilities, which indicates existing deficits in intramural care and aftercare.

Discussion

The results of this study provide valuable insights into the health situation, care conditions,

Figure 2 Cultural differences in the incidence of hepatitis C (top) and drug addiction (bottom) among prisoners in Germany (in both cases p<0.05; surveyed prisons: n=62).



and prevention in German prisons. In the following section, the most important findings are categorized and discussed in the context of existing literature, and implications for public health management are derived.

Prevalence of chronic diseases

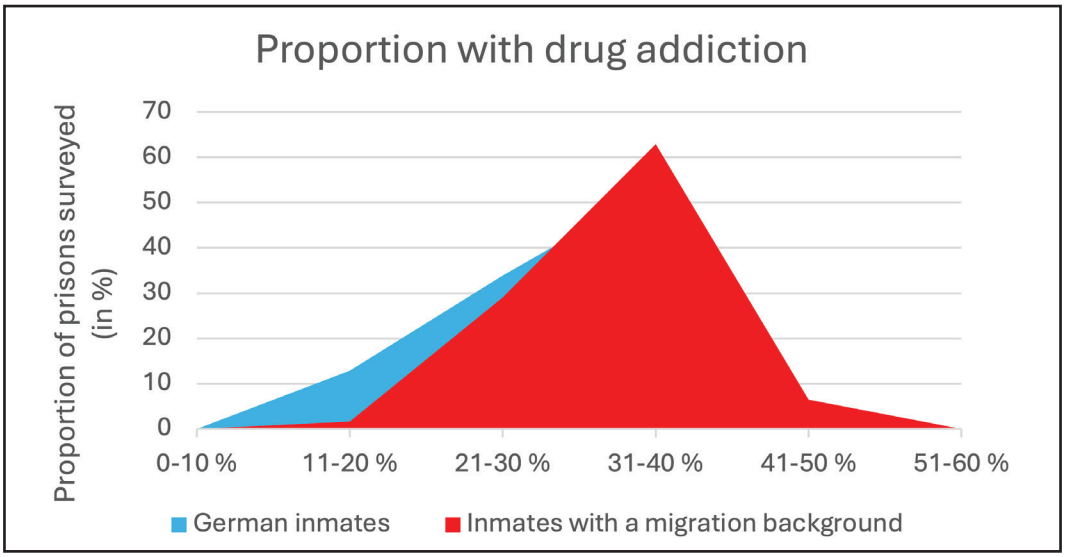
The results show that the proportion of prisoners with at least one chronic illness (41-50%) is comparable to the general male population (46.4%) (RKI, 2021). This similarity could be due to the comparable age structure of the two groups, although older people are underrepresented in prisons (approx. 5% of prisoners are over 60 years old) (Statista, 2023). However, the higher prevalence of specific diseases, such as depression (21-30% vs. 8.6%) and hepatitis C (11-20% vs. 0.3%), illustrates that prisoners are disproportionately affected by socioeconomic stress and health risk factors (Fazel et al., 2017).

The high prevalence of depression is supported by studies that point to the psychological stress caused by prison conditions, such as isolation, a lack of social support, and stigmatization (Opitz-Welke et al., 2018; Bedaso et al., 2020). There is also a lack of adequate psychotherapeutic services in many prisons, which further increases the discrepancy with the general population. Hepatitis C also shows a significantly higher prevalence among prisoners, which is linked to risk factors such as intravenous drug use and inadequate preventive measures at the start of imprisonment (WHO, 2023).

Cultural differences and health inequalities

Analyzing the differences between German prisoners and those with a migrant background revealed significant differences in the prevalence of certain diseases. Hepatitis C and drug addiction were significantly more common among detainees with a migrant background, which was confirmed by the results of the Mann-Whitney U test ($p<0.0001$ and $p=0.013$, respectively). These findings are in line with international literature, which points to socioeconomic burdens and limited access to medical services as the main causes (Lungu-Byrne et al., 2020; Fazel et al., 2017). At the same time, the study shows that language and cultural barriers can make access to healthcare even more difficult. Culturally sensitive approaches, as proposed by Kosendiak et al. (2022), could provide a remedy here.

Figure 3 A summarized comparison of the assessment of treatment regimens inside and outside prison for defined illnesses (n=62).



Supply situation in the prisons

There are considerable deficits in medical care in prisons. Although the availability of medication was rated as "good" or "very good" in 80% of the facilities, the delayed inclusion of new medication in the positive lists remains a problem. These limitations could contribute to the fact that the care of certain diseases, such as depression and cancer, is perceived as poorer compared to the general population (Opitz-Welke et al., 2018). At the same time, care for addiction was rated as better in many facilities, which could be due to targeted programs such as therapeutic communities (Richardson & Zini, 2020).

Human resources in correctional centers also pose a challenge. A shortage of specialists and the limited availability of specialized treatment services have been identified as key obstacles (WHO, 2023). Urgent measures are needed here to ensure the equivalence of care in line with the principle of equivalence.

Prevention and aftercare

The effectiveness of preventative measures in the prisons was predominantly rated positively, but the data also shows clear gaps, particularly in the transition to extramural care. A lack of continuity of medical care and social problems such as financial insecurity were cited as key challenges by over 80% of the facilities. This is in line with the literature, which identifies the transition from intramural to extramural care as a critical point for the health of ex-prisoners (Fazel et al., 2017; WHO, 2023). The introduction of standardized discharge preparation and health passports could help to reduce these deficits and improve aftercare.

Implications for public health management

The results presented here make it clear that prisons play a central but often neglected role in the healthcare system. Their importance lies not only in the care of a particularly vulnerable population group, but also in their influence on public health. Targeted public health management measures are needed to address the identified deficits in care and prevention.

Improving preventive measures

The high prevalence of certain infectious and addictive diseases among prisoners, such as hepatitis C and drug addiction, underlines the urgency of comprehensive prevention programs. The World Health Organization (WHO) emphasizes that prisons are "epidemiological hotspots" for the spread of communicable diseases and calls for the introduction of regular testing upon entry into prison and standardized vaccination programs (WHO, 2021). Studies show that systematic testing and treatment programs for hepatitis C in prison not only improve individual health, but can also reduce the spread of the disease after release (Kouyoumdjian et al., 2016). In the area of addiction, therapeutic communities and substitution programs offer effective approaches that should be promoted more strongly (Richardson & Zini, 2020). At the same time, psychosocial interventions should be integrated to prevent relapse and support resocialization. Pilot projects in European prisons have shown that a combination of medical care and psychosocial support significantly increases treatment success (McLeod et al., 2020).

Ensuring adequate care

Treatment in German prisons suffers from structural deficits that include a limited availability of modern medication and staff shortages. Delayed access to innovative therapies due to infrequently updated positive lists is a significant problem. As emphasized by Keppler et al. (2010), regular revisions of these lists are essential to ensure the equivalence of care in accordance with the equivalence principle.

In addition, the shortage of specialists, especially psychiatrists, is a key obstacle to optimal care (Stöver, 2008; Stöver, 2015). Better remuneration and specific training programs for medical staff could create incentives to increase the attractiveness of this field of work. At the same time, the increased use of telemedicine could help to bridge supply bottlenecks. Initial projects in the UK have shown that telemedicine consultations can significantly improve access to specialists (Valentim et al., 2023).

Improving the transition to extramural care

A smooth transition from intramural to extramural care is essential in order to avoid relapses and deterioration in health after imprisonment. The frequently reported problems, such as a lack of continuity of care and social difficulties, make it clear that existing structures are inadequate. The introduction of standardized discharge preparations, such as the creation of "health passports," could help to ensure continuity of care and facilitate access to external healthcare facilities (WHO, 2021). Greater involvement of community health services in the release process could also help to close the care gap. In Canada, collaboration between prisons and community health centers has proven to be an effective model for improving aftercare and facilitating reintegration into society (Kouyoumdjian et al., 2016).

Integration of the prison system into the healthcare system

The prison system should not be viewed in isolation, but as an integral part of the public health system. Prisons offer a unique opportunity to address health inequalities and provide medical care to hard-to-reach populations ("Prison Health is Public Health", WHO, 2007). To achieve this, greater cooperation between justice and health authorities is necessary. The implementation of national health strategies that explicitly include the prison system could help to standardize care and improve it in the long term.

Conclusion

The results of this study make it clear that prisons play a central role in public health management. Despite comparable prevalence rates of chronic diseases to the general population, prisoners show significantly higher rates of infectious diseases and mental illnesses, particularly hepatitis C and depression. At the same time, deficits in care, prevention and the transition to extramural care reveal the urgent need for targeted reforms. Prisons offer a unique opportunity to address health inequalities and strengthen public health. Greater integration of the prison system into the healthcare system, culturally sensitive prevention approaches, and systematic transition management can utilize this potential in the long term.

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