SWISS DENTAL JOURNAL SSO Science and Clinical Topics

ISSN 2296-6498
swissdentaljournal.org

Scientific article

Dental treatment needs and treatment frequency of inmates in Basel

Accepted: February 21, 2025
DOI: 10.61872/sdj-2025-01-04
2025, Vol. 135

Marussia Bart[1*], Andreas Filippi[1]
[1] Department of Oral Surgery, University Center for Dental Medicine Basel UZB, University of Basel, Basel, Switzerland

*Correspondence: Marussia Bart, Mattenstrasse 40, CH-4058 Basel. Telephone number: +41786951196, email: bartmarussia@gmail.com

Keywords
Prison, dental treatments, DMFT, drugs, diseases

Abstract

The aim of this retrospective descriptive study was to identify the treatment frequency of prisoners and the associated need for dental treatment, as well as to analyse the associations between the DMFT index, general health conditions (mental health) and health behaviour (cigarette smoking). For this purpose, the medical records (secondary data) from 2018-2020 of 317 inmates receiving dental treatment from two Basel prisons were examined, categorized and statistically evaluated using linear regression models (RECORD 1.1, 1.2).

At the time of the medical history, 87.1% of the inmates were taking at least one medication, 47.9% of them psychotropic drugs and 52.7% analgesics. 5.5% had a hepatitis C virus (HCV) infection. Opioid use correlated with HCV infection: 24.5% of opioid users (m/f) were also HCV+. Teeth had to be removed in 58.7% of inmates. The DMFT index was 1.85 times higher in smokers than in non-smokers. With each pack of cigarettes per day, the DMFT index increased 1.44-fold. The DMFT index in prisoners with mental illness was 1.5 times higher.

Possible approaches to improve general and dental health include drug prevention, withdrawal therapy, sports promotion, dental health education and the provision of oral hygiene products. It is recommended that further studies be conducted with comprehensive examinations of inmates.

Introduction

Prisons are self-contained areas of society with internal structures differing around the world. Access to medical and dental care plays a crucial role in the resocialization of prisoners. As per January 31, 2024, a total of 6881 adults were incarcerated in prisons in Switzerland (1). The prisoners emanated predominantly from socially disadvantaged social groups, which often have an increased incidence of general and dental diseases (2, 3). Prisons ideally strive to successfully reintegrate prisoners into a life of social responsibility and crime-free living. According to Article 75 of the Swiss Penal Code, it is necessary to provide care that corresponds to the living conditions of the inmates, including health care that is comparable to the general population (principle of equivalence) (4).

The health of the body and its well-being also have their starting point in oral health (5). Oral diseases are related to systemic diseases and poor oral health can worsen systemic diseases, such as diabetes mellitus or coronary heart disease (6).

The aim of this study was to identify the treatment frequency of prisoners and the associated need for dental treatment, as well as to analyse the associations between the DMFT index (oral health status), general health conditions (mental health) and health behaviour (cigarette smoking). The research question was: Do the general health conditions (mental illness) and health behaviour (cigarette smoking) of inmates have an impact on the DMFT index? The hypothesis was: If the inmate is a cigarette smoker or has a mental illness, the DMFT index increases. These findings could be used to develop approaches to improve the health of prisoners and at the same time reduce the healthcare costs caused by secondary diseases.

Material and methods

Data collection

An independent investigator who was not involved in the dental treatment retrospectively collected secondary data on inmates receiving dental treatment from the Bässlergut men's prison and the Waaghof mixed-gender remand prison (both in Basel) and anonymized it in an encrypted document (RECORD 12.3). These data came from the analog medical records of the two prisons and the digital medical records of the University Center for Dental Medicine Basel UZB. The sample size was limited on the following inclusion criteria: Number of prison inmates who had received dental treatment in Basel between 2018 and 2020 and were at least 18 years old. The exclusion criteria were that the inmates were minors or that they had a written or verbally documented objection to the further use of the health-related personal data (RECORD 6.1, 12.1, 12.2). The study was approved by the Ethics Committee of Northwestern and Central Switzerland (EKNZ) (2021-00841). The RECORD statement (7) has been followed in the reporting of the study.

Categorization of the data

The data collected could be divided into three topics: Socio-demographic (age, gender and nationality), general medical (main and secondary diagnoses, anamnestic abnormalities such as previous illnesses, drug use, cigarette consumption, allergies, medication, viral infections

such as hepatitis C and human immunodeficiency virus) and dental (number and type of treatments, DMFT index, place of treatment and payer).

Outcome variable

The DMFT index of decayed, missing and filled teeth was determined from the findings of the detainees' dental records. The DMFT index value can be between 0 and 28. In the case of multiple treatments during the study period, the first finding was used in each case, as only the DMFT index of the first check-up was relevant for the present study. The majority of short examinations were carried out with a focus on sextants or quadrants, meaning that only a few complete findings were available.

Main predictors

The main predictors of this study include: mental health (yes/no) and cigarette smoking (smokers/non-smokers) and number of packets of cigarettes smoked per day.

Statistical analysis

Descriptive statistics included frequency (proportion) or mean and median indicated in the text. Depending on the frequency within the given groups either the Fisher's exact or chi-square test were used for the various group comparisons. For continuous parameters like the DMFT index the non-parametric Wilcoxon ranksum test was used. To predict the DMFT index values, linear regression models were performed to calculate the effect sizes for the DMFT index between the given comparisons (e.g. between smokers/non-smokers and mental illnesses). For this purpose, the DMFT index zero values were set to 0.5 and then logarithmically transformed to fulfill the criteria for normal distribution. These linear regression models were further adjusted for gender and age groups. The back-transformed estimates were geometric mean ratios either between groups or per unit of packs of cigarettes per day. A p-value <0.05 was considered as significant. Due to the exploratory nature of the present study, no adjustment was made for multiple testing. Moreover, no explicit sample size calculation was performed. Instead, it was more the intention to get an overview of a relevantly large number of subjects. All analyses were calculated using the statistical program R version 4.2.2. (RECORD 7.1, 22.1).

Results

a) Socio-demographic

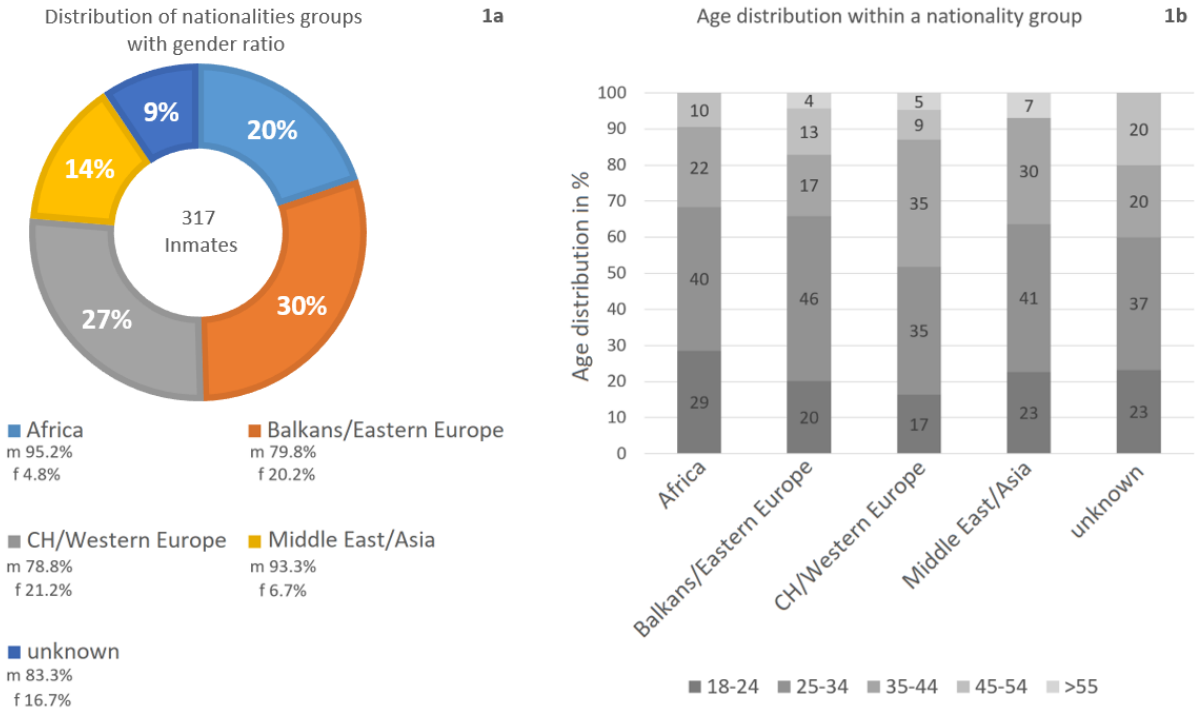


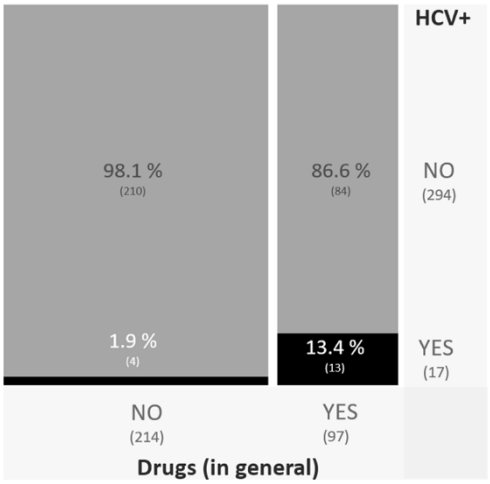
Figure 1. Results of the socio-demographic analysis on age (1a); nationality groups and gender ratio (1b) (m: male, f: fe-male, CH: Switzerland).

In the period from 2018 to 2020, a total of 317 inmates from the two prisons (Waaghof and Bässlergut) in the canton of Basel-Stadt received dental treatment. 84.9% (n=266) of them were men and 15.1% (n=48) women (Fig. 1a). The age of the inmates was between 18 and 75 years and was divided into five age groups, with the 25-34 age group being the largest (Fig. 1b), (RECORD 13.1).

b) General medical

Medical history	Gender	n(%)
Medications		
None	m/f	41 (12.9)
Anticoagulated	m	6 (2.2)
	f	0 (0.0)
Psychotropic drugs	m/f	152 (47.9)
Analgesics	m/f	167 (52.7)
Pre-existing conditions		
None	m/f	210 (66.2)
Mental	m/f	47 (14.8)
Viral	m/f	21 (6.7)
Diabetes	m/f	9 (2.8)
Epilepsy	m/f	7 (2.2)
Asthma	m/f	17 (5.4)
Allergies		
None	m/f	268 (84.5)
Pollen	m/f	18 (5.7)
Food	m/f	14 (4.4)
Medication	m/f	11 (3.5)
Animal hair	m/f	4 (1.3)
Viral infections		
Human immunodeficiency virus positive (HIV+)	m	2 (0.8)
	f	0 (0.0)
Hepatitis C virus positive (HCV+)	m	14 (4.2)
	f	6 (13.0)
Drug use		
General	m	82 (30.5)
	f	17 (35.4)
Opioids	m	37 (13.8)
	f	13 (27.1)
Alcohol abuse	m/f	29 (9.1)
Cigarettes	m/f	182 (57.4)

2a



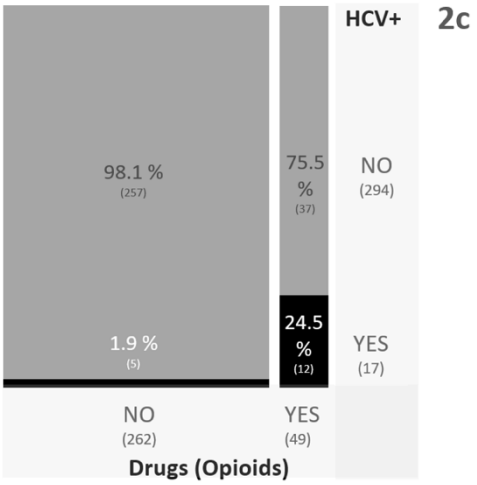


Figure 2. Results of the general medical history (2a); specific correlation of drug use (general) to HCV+ (2b); specific correlation of opioids to HCV+ (2c). *Percentage of inmates m/f: n=317, m: n=269, f: n=48 (viral infection m: n=265, f: n=46) Shaded in gray: gender-specific percentages, m: male, f: female.

A total of 311 medical history forms were completed in full, with six missing information on viral infections. The patients' details were categorized into the following groups: Medications, pre-existing conditions, allergies, viral infections and drug use. The correlation of drug use in general (Chi-square test p<0.001) and opioids (Fisher's exact test p<0.001) to HCV+ was shown more specifically in mosaic plots (Fig. 2b and 2c). Among drug users, 13.4% (n=13) reported HCV+ infection, compared to 24.5% (n=12) among opioid users. General drug use was similar for both genders. The use of opioids was about twice as high among women as among men (Chi-square test p=0.034) (Fig. 2a). 5.5% (n=17) had an HCV infection, women were more frequently affected (13.0%, n=6) than men (4.2%, n=14) (Fisher's exact test p=0.026). After cigarettes (m/f: 57.4%, n=182), opioids (m/f: 15.8%, n=50) were the most frequently consumed drug (Fig. 2a). In the anamnesis, 87.1% (n=276) of inmates reported medical drug use, with each inmate taking an average of around three medical drugs (mean 3.1 (SD 2.9), median 3 (IQR 2-9)). About half of the inmates consumed psycho-tropic drugs and/or analgesics. About

one third of the detainees had pre-existing medical conditions, the most common being mental or viral. No hepatitis A and B infections were reported (Fig. 2a).

c) Dental medicine

Dental treatments	n(%)
Place of treatment	
Prison Waaghof	232 (73.2)
Dental clinic	40 (12.6)
Prison Waaghof and Dental clinic	45 (14.2)
Type of treatment	
Tooth removal	186 (58.7)
Local tooth cleaning/curettage	55 (17.4)
Filling therapy	53 (16.7)
Other	19 (6.0)
Control	13 (4.1)
Removable prosthetics	11 (3.5)
Myoarthropathie	3 (0.9)
Root canal treatment	3 (0.9)

3a

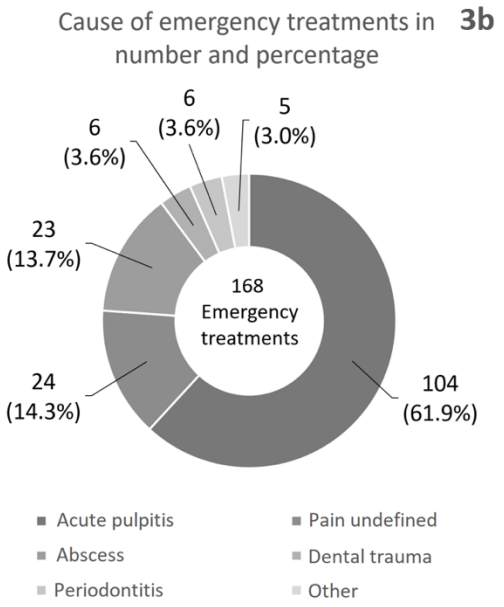


Figure 3. Results of dental treatment (3a); cause of emergency treatment (3b), *percentage of detainees n=317.

On average, each inmate received dental treatment 2.3 times, with over half receiving only one treatment (mean 2.3 (SD 2.6), median 1 (IQR 1-2)). 33 patients (10.4%) were not treated at their own request.

The dental treatments were divided into location and type (Fig. 3a), and the cause was assigned to the emergency treatments (Fig. 3b). "Other" treatment types included nine desensitisations/fluoridations, three re-cemented crowns, two wound treatments, three edge/pre-contact grinding therapies, one orthodontic case and one surgical polyp removal. The "Control" category consisted of eight (2.5%) general dental examinations, two (0.6%) post-trauma check-ups, two (0.6%) mucosal examinations and one (0.3%) wound check-up (Fig. 3a). The most common reason for emergency treatment was acute pulpitis. The "others" were lockjaw, bone sequestrum, peri-implantitis, fistula and alveolitis (Fig. 3b).

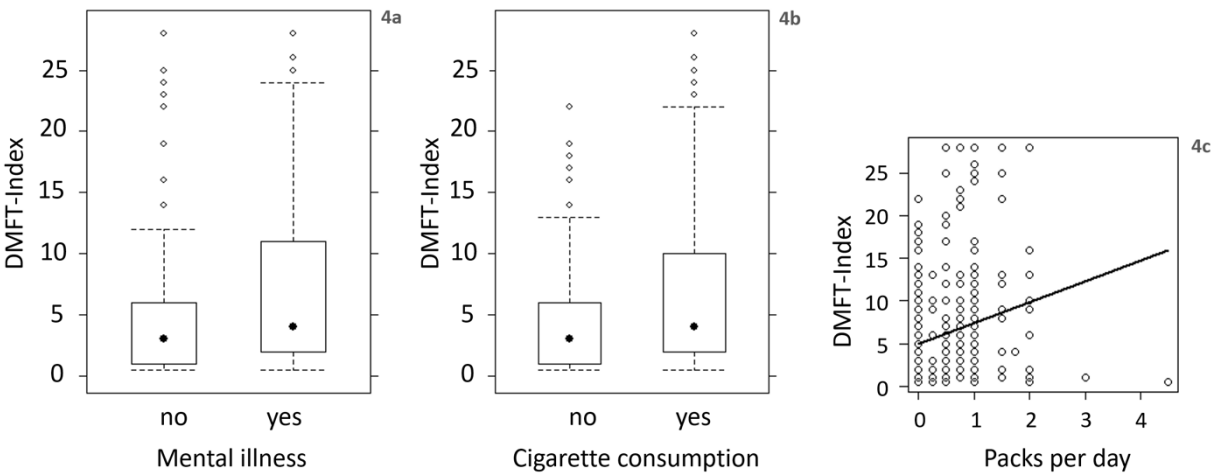


Figure 4. Box plot depicting the Influence of mental illness on the DMFT index (4a); Box plot depicting the Influence of cigarette consumption on the DMFT index (4b); Scatter plot depicting packs of cigarettes per day on the DMFT index (4c); Boxes indicate interquartile ranges, horizontal lines median values of the data, whiskers the minima and maxima (dots indicate outliers).

On average, each inmate had a DMFT index of 6, whereby a DMFT index of 3 was calculated for more than half of the inmates (mean 6.0 (SD 6.9), median 3 (IQR 1-8)). The DMFT index is divided into decayed (mean 1.9 (SD 2.7), median 1 (IQR 0-2)), missing (mean 2.2 (SD 4.3), median 1 (IQR 0-2)) and filled (mean 2.0 (SD 3.3), median 0 (IQR 0-2)) teeth. The average cigarette consumption was half a pack per day (mean 0.5 (SD 0.6), median 0.5 (IQR 0-1)). Inmates with mental illness had a 1.50-fold increase in the DMFT index (linear regression p=0.002), in smokers it was 1.85-fold higher (linear regression p<0.001) and increased 1.44-fold per pack/day (linear regression p=0.001) (Fig. 4a, 4b, 4c).

Of the dental treatment costs, 19.2% (n=61) were covered by social insurance, 1.6% (n=5) by supplementary health insurance, 0.3% (n=1) by accident insurance and 0.3% (n=1) by disability insurance. The largest proportion (78.6%, n=249) was settled via the prison, i.e. the dental bills were debited to the inmate's special-purpose account. The prison covered the costs or part of the costs if there were insufficient personal funds. If the inmate was released before the bill was received, the costs were covered by the prison.

Discussion

The low dental awareness in this study is shown by the fact that general dental examinations were rarely performed on inmates and that inmates are not aware that cigarette and drug use has an impact on oral health. A Finnish study of inmates showed that despite daily tooth brushing, oral health and dental status were insufficient (8). Tooth extractions were common and costly treatments such as root canal therapy were rarely performed. Acute pulpitis was the main cause of emergency treatments, although most pulpitis could be prevented through prevention and oral hygiene (9).

In Switzerland, drug use (injection or intranasal) was the main route of HCV transmission (10). In this present study, a correlation between drug use and HCV was evident, as 13.4% of drug users were HCV-positive. Overall, 5.5% of prisoners were HCV-positive, significantly more than in the Swiss and global population (0.1-0.4% and 1% respectively) (11).

Opioids were the most commonly used illicit drug among inmates and also a risk factor for dental health. Opioid use promotes tooth decay, periodontitis, teeth grinding and jaw necrosis (12). In this study, it was striking that women in prison consumed opioids about twice as often as men; in the Swiss population, this ratio was reversed (13). The correlation between opioid use and HCV infection made it clear that the use of opioids favored the transmission of HCV.

The average cigarette consumption of the inmates was half a pack per day. Cigarettes were the most frequently consumed legal drug. More than half of the inmates smoked, significantly more than in the Swiss population (27.1%) (14). Cigarette consumption increases the risk of periodontitis, squamous cell carcinoma and tooth loss (12). A British study - conducted on female inmates - showed that increased smoking behaviour correlated with high caries activity and deep periodontal pockets (15). This study highlights the impact of smoking on dental health, as smokers had a 1.85-fold increase in the DMFT index and a 1.44-fold increase ($p=0.001$) per pack/day.

An increased DMFT index was also found in people with mental illness. Psychotropic drugs in particular were consumed by almost half of the inmates, although the reason for taking them (e.g. pain, mental illness or withdrawal therapy) was unclear. An Indian study showed that the isolated environment in prisons made inmates more depressed and that this affected the body's systemic and oral health, with problems such as periodontitis occurring more frequently (16). Furthermore, the use of antidepressants and neuroleptics can lead to dry mouth and impair the natural protection of the teeth (17). The present study also showed that 78% of inmates took at least one medication and 53% took an analgesic, significantly more than in the Swiss population (50% and 24% respectively) (18).

To improve the general and dental situation in prisons, sports promotion, drug prevention and dental health education are suggested. Studies have shown that behavioural therapies have a positive effect on the psychosocial behaviour of incarcerated persons and that measures such as psychotherapy, yoga or sports promotion contribute to improving health and dental status (19, 20). Young adulthood is a favorable age for health promotion and therefore also lends itself to drug prevention (21). These approaches could improve the general and dental health of prisoners and reduce expensive treatment costs. It is recommended that further studies be conducted with comprehensive examinations of inmates in order to record complete dental findings and not overlook any aspects of the health analysis.

Limitations of the study

The examinations were performed by different dentists. There was no calibration performed, thus discrepancies may arise in data collection. All data was collected by an independent person without another independent control person checking the data. Data on other factors associated with oral health, such as frequency of tooth brushing, were not included. The majority of short examinations were carried out with a focus on sextants or quadrants, meaning

that only a few complete findings were available. The DMFT index represented a minimum value that could be higher if the findings were complete (RECORD 19.1).

Conclusion

The low dental awareness in this study is shown by the fact that general dental examinations were rarely performed on inmates and that inmates are not aware that cigarette and drug use has an impact on oral health. Cigarettes and opioids were the most commonly consumed drugs and were also a risk factor for dental health. An increased DMFT index was found in smokers and in inmates with mental illness. To improve the general and dental situation in prisons, sports promotion, drug prevention and dental health education are suggested.

Zusammenfassung

Einleitung

Das Ziel der vorliegenden Untersuchung bestand darin, die Behandlungshäufigkeit von Inhaftierten und den damit verbundenen zahnärztlichen Behandlungsbedarf zu identifizieren und kategorisieren, sowie die Zusammenhänge zwischen dem DMFT-Index (oraler Gesundheitszustand), dem allgemeinen Gesundheitszustand (psychische Gesundheit) und dem Gesundheitsverhalten (Zigarettenrauchen) zu analysieren. Durch diese Erkenntnisse könnten Ansätze zur Verbesserung der Gesundheit von Inhaftierten entwickelt werden, um gleichzeitig die Gesundheitskosten zu senken, die durch Folgeerkrankungen entstehen.

Material und Methoden

Von einem unabhängigen und nicht an der zahnärztlichen Behandlung beteiligten Prüfer wurden Sekundärdaten zahnmedizinisch behandelter Inhaftierter aus zwei Gefängnissen retrospektiv erfasst und in einem verschlüsselten Dokument anonymisiert. Diese Daten der Jahre 2018 2020 stammten aus den analogen und digitalen Krankenakten der Inhaftierten, konnten in drei Kategorien eingeteilt werden (soziodemografisch, allgemein- und zahnmedizinisch) und waren in Kombination Grundlage der deskriptiven statistischen Auswertung. Die Untersuchung wurde von der Ethikkommission Nordwest- und Zentralschweiz (EKNZ) (2021-00841) genehmigt.

Resultate

Insgesamt wurden 317 Inhaftierte zahnmedizinisch behandelt. 84.9% davon waren Männer und 15.1% Frauen. Das Alter der Inhaftierten lag zwischen 18 und 75 Jahren. Von den Drogenkonsumenten gaben 13.4% eine HCV+ Infektion an, während es bei den Opioidkonsumenten 24.5% waren. Der allgemeine Drogenkonsum war bei beiden Geschlechtern ähnlich hoch. Der Konsum von Opioiden war bei Frauen etwa doppelt so hoch wie bei Männern. 5.5% hatten eine HCV-Infektion, Frauen waren häufiger betroffen (13.0%) als Männer (4.2%). Nach Zigaretten (m/w: 57.4%) waren Opioide (m/w: 15.8%) die am häufigsten konsumierte Droge. Etwa die Hälfte der Inhaftierten konsumierten Psychopharmaka und/oder Analgetika. Der häufigste Grund für eine Notfallbehandlung war die akute Pulpitis. Durchschnittlich hatte jeder Inhaftierte ein DMFT-Index von 6, wobei bei über der Hälfte der Inhaftierten ein DMFT-Index von 3 errechnet wurde (mean 6.0 (SD 6.9), median 3 (IQR 1-8)). Der durchschnittliche Zigarettenkonsum lag bei einer halben Packung pro Tag (mean 0.5 (SD 0.6), median 0.5 (IQR 0-1)). Inhaftierte mit psychischen Erkrankungen hatten einen 1.50-fach erhöhten DMFT-Index, bei Rauchern war er um das 1.85-fache erhöht und stieg um das 1.44-fache (p=0.001) pro Packung pro Tag.

Diskussion

Die vorliegende Untersuchung zeigte ein mangelndes zahnmedizinisches Präventionsbewusstsein, denn nur 2.5% der Inhaftierten liess eine allgemeine zahnärztliche Untersuchung durchführen. Es wurde eine Korrelation zwischen Drogenkonsum und HCV deutlich, denn 13.4% der

Drogenkonsumenten waren HCV-positiv. Opioide waren die unter Inhaftierten am häufigsten konsumierte illegale Droge und zugleich ein Risikofaktor für die Zahngesundheit. Frauen konsumierten im Gefängnis etwa doppelt so häufig Opioide wie Männer. Die Korrelation zwischen Opioidkonsum und HCV-Infektionen verdeutlichte, dass die Einnahme von Opioiden die Übertragung von HCV begünstigte. Der durchschnittliche Zigarettenkonsum der Inhaftierten lag bei einer halben Packung pro Tag. Zigaretten waren die am häufigsten konsumierte legale Droge. Über die Hälfte der Inhaftierten rauchte. Der Einfluss des Rauchens auf die Zahngesundheit wurde deutlich, denn bei Rauchern war der DMFT-Index um das 1.85-fache erhöht und stieg um das 1.44-fache ($p=0.001$) pro Packung/Tag. Ein erhöhter DMFT-Index wurde auch bei psychisch Erkrankten festgestellt. Speziell Psychopharmaka wurden von fast der Hälfte der Inhaftierten konsumiert, wobei der Grund der Einnahme (z.B. Schmerzen, psychische Erkrankungen oder Entzugstherapien) unklar war. Zur Verbesserung der allgemeinen und zahnmedizinischen Situation in Gefängnissen wird die Sportförderung, Drogenprävention und Aufklärung zur Zahngesundheit vorgeschlagen. Durch diese Ansätze könnte die allgemeine und zahnmedizinische Gesundheit der Inhaftierten verbessert und teure Behandlungskosten reduziert werden.

Résumé

Introduction

L'objectif de cette étude était d'identifier et de catégoriser la fréquence des traitements des détenus et les besoins en soins dentaires qui en découlent, ainsi que d'analyser les associations entre l'indice CAO (état de santé bucco-dentaire), les conditions de santé générales (santé mentale) et le comportement de santé (tabagisme). Ces connaissances pourraient permettre de développer des approches visant à améliorer la santé des détenus, tout en réduisant les coûts de santé engendrée par les maladies secondaires.

Matériel et méthodes

Un examinateur indépendant et non impliqué dans les soins dentaires a collecté rétrospectivement des données secondaires sur des détenus ayant reçu des soins dentaires dans deux prisons et les a rendues anonymes dans un document codé. Ces données des années 2018-2020 provenaient des dossiers médicaux analogiques et numériques des détenus, pouvaient être classées en trois catégories (sociodémographique, médecine générale et dentaire) et constituaient, une fois combinées, la base de l'analyse statistique descriptive. L'étude a été approuvée par la Commission d'éthique du Nord-Ouest et de la Suisse centrale (EKNZ) (2021-00841).

Résultats

Au total, 317 détenus ont bénéficié de soins dentaires. 84.9% d'entre eux étaient des hommes et 15.1% des femmes. L'âge des détenus se situait entre 18 et 75 ans. Parmi les consommateurs de drogues, 13.4% ont déclaré une infection par le VHC+, contre 24.5% chez les consommateurs d'opioïdes. La consommation générale de drogues était similaire pour les deux sexes. La consommation d'opioïdes était environ deux fois plus élevée chez les femmes que chez les hommes. 5.5% avaient une infection par le VHC, les femmes étaient plus souvent touchées (13.0%) que les hommes (4.2%). Après les cigarettes (h/f : 57.4%), les opioïdes (h/f : 15.8%) étaient la drogue la plus fréquemment consommée. Environ la moitié des détenus consommaient des psychotropes et/ou des analgésiques. La raison la plus fréquente d'un traitement d'urgence était la pulpite aiguë. En moyenne, chaque détenu avait un indice CAO de 6, avec un indice CAO de 3 pour plus de la moitié des détenus (mean 6.0 (SD 6.9), median 3 (IQR 1-8)). La consommation moyenne de cigarettes était d'un demi-paquet par jour (mean 0.5 (SD 0.6), median 0.5 (IQR 0-1)). Les détenus souffrant de troubles psychiatriques avaient un indice CAO 1.50 fois plus élevé ; chez les fumeurs, il était multiplié par 1.85 et augmentait de 1.44 (p=0,001) par paquet/jour.

Discussion

La présente étude a révélé un manque de sensibilisation à la prévention dentaire, puisque seuls 2.5% des détenus ont subi un examen dentaire général. Une corrélation entre la consommation de drogues et le VHC a été mise en évidence, puisque 13.4% des consommateurs de drogues étaient positifs au VHC. Les opioïdes étaient la drogue illégale la plus consommée

par les détenus et constituaient également un facteur de risque pour la santé dentaire. Les femmes étaient environ deux fois plus susceptibles de consommer des opioïdes en prison que les hommes. La corrélation entre la consommation d'opioïdes et les infections par le VHC a montré que la prise d'opioïdes favorisait la transmission du VHC. La consommation moyenne de cigarettes chez les détenus était d'un demi-paquet par jour. La cigarette était la drogue légale la plus consommée. Plus de la moitié des détenus fumaient. L'influence du tabagisme sur la santé dentaire était évidente, puisque l'indice CAO était 1.85 fois plus élevé chez les fumeurs et augmentait de 1.44 fois (p=0,001) par paquet/jour. Une augmentation de l'indice CAO a également été constatée chez les personnes souffrant de troubles psychiques. Les psychotropes en particulier étaient consommés par près de la moitié des détenus, sans que la raison de leur prise (par ex. douleurs, maladies psychiques ou cures de désintoxication) ne soit claire. Pour améliorer la situation générale et dentaire dans les prisons, il est proposé de promouvoir le sport, la prévention de la toxicomanie et l'éducation à la santé dentaire. Ces approches permettraient d'améliorer la santé générale et dentaire des détenus et de réduire les frais de traitement coûteux.

Acknowledgements

The author denies any possible conflict of interest related to this study.

References

1. Bundesamt für Statistik. Freiheitsentzug: Inhaftierte im Januar 2024. 2024 Apr 29.
2. Baybutt M, Dooris M, Farrier A. Growing health in UK prison settings. Health Promot Int. 2019 Aug 1;34(4):792-802.
3. Stürup-Toft S, O'Moore EJ, Plugge EH. Looking behind the bars: emerging health is-sues for people in prison. Br Med Bull. 2018 Mar 1;125(1):15-23.
4. Galli F. Das Magazin zum Straf- und Massnahmenvollzug. prison-info. 2019 Feb 1;44:2.
5. Fiorillo L. Oral Health: The First Step to Well-Being. Medicina (Kaunas). 2019 Oct 7;55(10):676.
6. Tavares M, Lindefjeld Calabi KA, San Martin L. Systemic diseases and oral health. Dent Clin North Am. 2014 Oct;58(4):797-814.
7. Benchimol EI, Smeeth L, Guttmann A, Harron K, Moher D, Petersen I, Sørensen HT, von Elm E, Langan SM; RECORD Working Committee. The REporting of studies Con-ducted using Observational Routinely-collected health Data (RECORD) statement. PLoS Med. 2015 Oct 6;12(10):e1001885.
8. Vainionpää R, Peltokangas A, Leinonen J, Pesonen P, Laitala ML, Anttonen V. Oral health and oral health-related habits of Finnish prisoners. BDJ Open. 2017 Mar 3; 3:17006.
9. Bernard J H. Pulpitis. MSD Manual. 2024 Nov 1;1.
10. Bundesamt für Gesundheit. Sexuell übertragene Infektionen und Hepatitis B/C in der Schweiz im Jahr 2022: eine epidemiologische Übersicht. Bull BAG. 2023 Nov 27;(48):46.
11. Bundesamt für Gesundheit. Hepatitis C in der Schweiz: epidemiologische Situation 2015-2018. Bull BAG. 2019 Nov 4;(45):12-24.
12. Sahrmann P. Risikofaktoren für die Zahngesundheit – Nicht-übertragbare Erkrankun-gen (NCDs). Bericht BAG. 2022 Sep 1;2022/142004650:15-42.
13. Gmel G, Kuendig H, Notari L, Gmel C. Suchtmonitoring Schweiz – Konsum von Alko-hol, Tabak und illegalen Drogen in der Schweiz im Jahr 2016. Sucht Schweiz. 2017;93.
14. Bundesamt für Statistik. Schweizerische Gesundheitsbefragung Tabakkonsum 1992-2022. 2024 Jul 2;1-6.
15. Rouxel P, Duijster D, Tsakos G, Watt RG. Oral health of female prisoners in HMP Hol-loway: implications for oral health promotion in UK prisons. Br Dent J. 2013 Jun;214(12):627-32.
16. Rawlani SM, Chawla R, Rawlani S, Rathi V, Gadge R, Choube S. Oral health status and prevalence of premalignant lesions in prisoners of Central Jail of Amravati, Ma-harashtra, India. Indian J Cancer. 2019 Jul-Sep;56(3):280-281.
17. Tan ECK, Lexomboon D, Sandborgh-Englund G, Haasum Y, Johnell K. Medications That Cause Dry Mouth As an Adverse Effect in Older People: A Systematic Review and Metaanalysis. J Am Geriatr Soc. 2018 Jan;66(1):76-84.
18. Bundesamt für Statistik. Schweizerische Gesundheitsbefragung 2017 Standardtabel-len: Jede zweite Person nimmt in der Schweiz wöchentlich Medikamente zu. Me-dienmitteilung. 2019 Mar 28.
19. Falk Ö, Sfendla A, Brändström S, Anckarsäter H, Nilsson T, Kerekes N. Personality and trait aggression profiles of male and female prison inmates. Psychiatry Res. 2017 Apr;250:302-309.
20. Kerekes N, Brändström S, Nilsson T. Imprisoning Yoga: Yoga Practice May Increase the Character Maturity of Male Prison Inmates. Front Psychiatry. 2019 Jun 13;10:406.

21. Amstad F, Suris J, Barrense-Dias Y et al. Gesundheitsförderung für und mit Jugendli-chen und jungen Erwachsenen – Wissenschaftliche Erkenntnisse und Empfehlungen für die Praxis. Gesundheitsförderung Schweiz Bericht. 2022 Nov 1;(9):16.

Statistics

1. R Core Team (2022). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org.