

Barriers to Dental Care in Drug–Addicted Patients and Methadone Maintenance Beneficiaries:

Grigoli Dzodzuashvili	Nino Chichua	Manana Kalandadze	Giuli Margishvili	Tinatin Dzodzuashvili	Natia Dzodzuashvili	Vladimer Margvelashvili
Ivane Javakhishvili Tbilisi State University, Faculty of Medicine	Ivane Javakhishvili Tbilisi State University, Faculty of Medicine	Ivane Javakhishvili Tbilisi State University, Faculty of Medicine	Center for Mental Health and Prevention of Addiction	Dzodzuashvili Dental Clinic	Dzodzuashvili Dental Clinic	Ivane Javakhishvili Tbilisi State University, Faculty of Medicine

Abstract

Introduction: Substance use, particularly opioid dependence, poses significant public health challenges. Dental care is often neglected among drug users and methadone maintenance therapy (MMT) beneficiaries due to stigma, financial barriers, and psycho–emotional challenges.

Aim of the Study: This study evaluated the disclosure of health conditions (HCV, HIV, substance use, and MMT) to dentists, barriers to dental care, and oral health among MMT beneficiaries and drug users.

Materials and Methods: A cross–sectional study of 276 participants in Tbilisi, Georgia, assessed oral health using DMFT, OHI–S, and Periodontal Index. Data on financial and non–financial barriers, hepatitis status, duration of drug use, and MMT enrollment were analyzed.

Results: Non–disclosure of health conditions was higher among newly enrolled MMT patients (78.98%) than long–term beneficiaries (52.89%, $p < 0.05$). Financial constraints were the primary barrier, with newly enrolled patients showing worse oral health indices.

Conclusions: MMT improves quality of life and oral health, with better disclosure rates compared to drug users first–time Beneficiaries of the methadone maintenance program. Addressing financial and stigma–related barriers is critical for enhancing care access.

Keywords: Methadone maintenance therapy, opioid dependence, dental care, hepatitis C, stigma.

Introduction

Drug use remains a significant public health and societal challenge worldwide, impacting millions of lives annually. In Europe, the issue is particularly pressing, as evidenced by the rising rates of drug-related deaths. In 2022, the European Union recorded at least 6,392 overdose deaths, an increase from 6,166 in 2021. This equates to a mortality rate of 22.5 deaths per million people aged 15–64, highlighting the grave consequences of drug misuse, particularly opioid dependency. These alarming statistics underscore the need for comprehensive prevention strategies, harm-reduction initiatives, and accessible treatment programs, including methadone maintenance therapy. Addressing this complex crisis requires a coordinated effort across healthcare, social services, and public policy to mitigate its impact on individuals and communities. (*Drug-Induced Deaths – the Current Situation in Europe (European Drug Report 2024)* | *Www.Euda.Europa.Eu*, n.d.)

New Human immunodeficiency virus (HIV) cases from injecting drug use in the EU rose to 968 in 2022, up from 662 in 2021, reversing a long-term decline and returning to 2019 levels. This increase, seen in over half the reporting countries, highlights the need to strengthen harm-reduction measures. (*Understanding Europe’s Drug Situation in 2024–Key Developments (European Drug Report 2024)*, n.d.)

Hepatitis C (HCV) is commonly spread among people who inject drugs, primarily due to needle sharing. Strengthening harm-reduction programs and expanding access to treatment are essential to curb its transmission. (*Viral Hepatitis Elimination Barometer among People Who Inject Drugs in Europe About the Elimination Barometer*, n.d.)

The 2021 nationwide serologic survey shows a significant reduction in chronic hepatitis C prevalence and incidence in Georgia, with a 67% decrease in prevalence and a substantial decline in infection rates, including among people who inject drugs (PWID). These improvements highlight the effectiveness of targeted public health efforts. (Walker et al., 2023). However, despite these successes, mortality from hepatitis B and C has increased, emphasizing the continued impact of chronic hepatitis and the need for enhanced treatment and care strategies, particularly for at-risk populations like (PWID). (*Global Guidance on Criteria and Processes for Validation Elimination of Mother-To-Child Transmission of HIV, Syphilis and Hepatitis B Virus*, 2021)

Methadone maintenance treatment (MMT) is widely recognized as one of the most effective approaches for managing opioid addiction. It alleviates withdrawal symptoms, reduces cravings, and significantly decreases the risk of relapse. Unlike short-term detox programs, methadone offers long-term stability by blocking the effects of illicit opioids without producing the euphoria associated with misuse, which lowers the likelihood of overdose and facilitates social reintegration. In addition, methadone has been proven to reduce criminal activity and drug-related harm, thereby contributing to a healthier society overall. These benefits make it a superior choice for individuals struggling with opioid addiction compared to other treatment options. (*Heroin and Other Opioids – the Current Situation in Europe (European Drug Report 2023)* | *Www.Euda.Europa.Eu*, n.d.) (Janssen et al., 2024)

Methadone maintenance therapy in Georgia has been administered by the Center for Mental

Health and Prevention of Addiction LLC, a governmental organization, since May 23, 2012. (ისტორიადსაკემიანობა – ფსიქიკურიჯანმრთელობისდანარკომანიისპრევენციისცენტრი, n.d.)The program currently supports more than 13,000 beneficiaries, providing them with essential treatment for opioid dependence. Methadone therapy has been widely recognized as an effective intervention for managing opioid addiction. (Piralishvili et al., 2015)

Methadone maintenance therapy in Georgia has demonstrated a significant positive impact on patients living with HIV. By reducing risky behaviors such as needle sharing, which are major contributors to HIV transmission among people who inject drugs, MMT serves as an effective harm-reduction strategy. Additionally, MMT has been associated with improved adherence to antiretroviral therapy (ART) among HIV-positive individuals. This integration of addiction treatment with HIV care enhances health outcomes, lowers viral load, and improves the overall quality of life for affected patients. The program's effectiveness underscores its critical role in addressing the overlapping challenges of opioid dependence and HIV within high-risk populations.(გამყრელიძეთ., თოდაძე.

მეთადონითჩანაცვლებითთერაპიისფექტურობისშეფასებააივინფიცირებულპაციენტებში, n.d.) Drug users and methadone maintenance therapy (MMT) beneficiaries face significant dental care challenges due to the direct impact of drug use.(Shekarchizadeh et al., 2019)(*The Oral Health Status and Behaviour of Methadone Users in Lithuania – PubMed*, n.d.)MMT and infections such as HIV and Hepatitis C are closely linked with substance addiction.(Treloar et al., 2013)(Guure et al., 2022) Stigma surrounding these conditions often causes patients to conceal their status, which complicates access to the care they need. (Weeks & Stenstrom, 2020; Zwick et al., 2020)Furthermore, there is a risk of transmitting infections like HIV and Hepatitis C during dental procedures, putting both patients and dental professionals at risk. These individuals also experience psycho-emotional challenges, which require special attention during treatment to ensure comprehensive care.(Hovden et al., 2020)

After experiencing stigma, many methadone maintenance therapy patients and drug users face additional non-financial barriers, such as fear of dental treatment and a lack of awareness about the importance of dental care.b(Carlsen et al., 2021) Moreover, financial barriers are a significant challenge, particularly in our country, where many drug users and methadone maintenance therapy beneficiaries lack the economic means to access necessary dental care.

Aim

The aim of our study is to explore whether methadone maintenance therapy beneficiaries and drug users who are currently infected with Hepatitis C, as well as those who were previously infected but have been treated, disclose their Hepatitis C status, HIV status, MMT treatment, or drug use history to their dentists. This research will help identify communication barriers faced by these individuals and improve dental care strategies for these vulnerable populations, ensuring that both current and former patients with Hepatitis C and HIV receive appropriate and effective dental treatment. Additionally, the study will assess how significant a barrier financial status is for MMT beneficiaries and drug users in accessing dental care.

Materials and Methods

At the Center for Mental Health and Prevention of Addiction in Tbilisi, Georgia, a dental health assessment was carried out among 276 patients, following approval from the Ethics Committee. This cross-sectional study aimed to assess and compare the oral health of two distinct groups: 138 individuals who were beginning methadone maintenance therapy for the first time as part of their addiction treatment, and another 138 participants who had been undergoing MMT for a minimum of six months. All participants signed written informed consent forms in compliance with ethical standards before joining the study.

A stratified random sampling approach was utilized to select participants from various subgroups, based on criteria such as the duration of opioid dependence (under 1 year, 1–3 years, 3–5 years, 5–10 years, and over 10 years) and the length of time enrolled in the methadone maintenance program (under 1 year, 1–3 years, 3–5 years, 5–10 years, and over 10 years). The study also included individuals diagnosed with hepatitis C, those undergoing or who had completed treatment for hepatitis C, and those living with HIV. After stratification, participants were allocated to one of two groups:

Group 1: First-Time Methadone Maintenance Program Group

Group 2: Long-Term Beneficiaries of Methadone Maintenance Therapy

The research employed a questionnaire developed in accordance with established dental research standards to investigate key dimensions of oral health. It gathered information on participants' oral hygiene practices, challenges in accessing dental care, and whether they disclosed details about their hepatitis C or HIV status, methadone treatment, or substance use to their dentists. Additionally, the survey explored financial and non-financial obstacles to receiving dental care, examining how these factors were influenced by the duration of opioid dependence or participation in the methadone maintenance program.

Our dental examination protocol employs a combination of indices to assess various aspects of oral health and prosthetic planning. the Oral Hygiene Index Simplified (OHI-S), the DMFT index (Decayed, Missing, and Filled Teeth) and the Periodontal Index.

Data analysis was carried out using version 23 of the Statistical Package for the Social Sciences (SPSS). A significance threshold of $p < 0.05$ was used to evaluate differences between variables. The dataset was systematically arranged into tables, and descriptive statistical methods were applied for analysis.

The assessment of oral health was performed using artificial light and a disposable dental examination kit, which included a tray, mouth mirror, dental explorer, tweezers, cotton rolls, and bibs, along with the WHO CPI periodontal probe.

Results

In Group I, 138 patients were surveyed regarding hepatitis C. Of these, 38 patients (27.53%) reported that they had been diagnosed with hepatitis C. From the total 138 patients, 92 (66.67%) had received treatment for the condition, while 8 (5.79%) were unaware of their hepatitis C status. The analysis yielded a statistically significant p -value of 0.001.

From the 38 patients who had been diagnosed with hepatitis C, 4 patients (10.52%) reported a

history of illicit drug use for 1 year, 20 patients (52.63%) had a history of illicit drug use for 1–3 years, 2 patients (5.26%) for 3–5 years, 10 patients (26.31%) for 5–10 years, and 2 patients (5.26%) for more than 10 years. P-value 0.001

From the 92 patients who received treatment, 8 patients (8.69%) had a history of illicit drug use for 1 year, 18 patients (19.56%) for 1–3 years, 10 patients (10.86%) for 3–5 years, 17 patients (18.47%) for 5–10 years and 39 patients (42.39%) for more than 10 years. P-value 0.0375

Table 1. Duration of Illicit Drug Use and Hepatitis C Status in First-Time Methadone Maintenance Program Patients.

First-time Methadone Maintenance Program Group – 138 Patients			
Duration of illicit drug use	Patients Unaware of HCV Status	Patients with Active HCV	HCV Treated Patients
	8 Patients – 5.79%	38 Patients – 27.53%	92 Patients – 66.67%
Less than 1 year	2 Patients – 25%	4 Patients – 10.52%	8 Patients – 8.69%
1–3 years	2 Patients – 25%	20 Patients – 52.63%	18 Patients – 19.56%
3–5 years	NA	2 Patients – 5.26%	10 Patients – 10.86%
5–10 years	4 Patients – 50%	10 Patients – 26.31%	17 Patients – 18.47%
More than 10 years	NA	2 Patients – 5.26%	39 Patients – 42.39%

In Group II, a total of 138 patients were surveyed. Of these, 14 patients (10.14%) reported having hepatitis C. Among the group, 122 patients (88.4%) indicated that they had received treatment previously, while only 2 patients (1.44%) were unaware of their hepatitis C status. Among the 14 patients with hepatitis C, 6 (42.85%) had been involved in a Methadone Maintenance Program (MMP) for less than one year. 3 patients (21.42%) had participated in the program for 1 to 3 years, 4 patients (28.37%) for 3 to 5 years, and 1 patients (7.14%) for more than 10 years. P-value 0.0485

Among the 122 patients who had previously been treated for hepatitis C, 6 (4.91%) had been involved in a Methadone Maintenance Program (MMP) for less than one year. 12 patients (9.83%) had participated in the program for 1 to 3 years, 11 patients (9%) for 3 to 5 years, 20 patients (16.39%) for 5 to 10 years, and 73 patients (59.83%) for more than 10 years. P-value 0.0375

Table 2. Duration of MMT Enrollment and Hepatitis C Status in Long-Term MMT Patients.

Long-Term Beneficiaries of Methadone Maintenance Therapy – 138 Patients			
Duration of MMT	Patients Uaware of	Patients with Active	HCV Treated

Enrollment	HCV Status	HCV	Patients
	2 Patients – 1.44%	14 Patients – 10.14%	122 Patients – 88.4%
Less than 1 year	NA	6 Patients – 42.85%	6 Patients – 4.91%
1–3 years	NA	3 Patients – 21.42%	12 Patients – 9.83%
3–5 years	2 Patients – 100%	4 Patients – 28.37%	11 Patients – 9%
5–10 years	NA	NA	20 Patients – 16.39%
More than 10 years	NA	1 Patients – 7.14%	39 Patients – 42.39%

Out of the total 276 patients, 12 (4.35%) reported living with HIV. In Group I, only 2 patients (1.45%) had HIV, while in Group II, 10 patients (7.25%) reported being HIV-positive. The difference between the two groups was statistically significant, with a p-value of 0.0345. In Group I, out of 138 patients, 60 (43.5%) reported that they cannot visit the dentist for treatment due to financial problems. In Group II, 96 (69.6%) patients reported the same. p-value 0.000

Regarding fear of visiting the dentist, 2 (1.4%) patients in Group I reported having fear, while 14 (10.1%) patients in Group II reported the same. p-value 0.000

Table 3. Prevalence of Barriers to Dental Care Among First-Time Methadone Maintenance Program Participants

First-Time Methadone Maintenance Program Group –138 Patients	
Fear of Visiting the Dentist	2 patients – 1.4%
Patients Not Disclosing Hepatitis C, HIV, MMT, or Drug Use to Dentists	109 Patients – 78.98%
Unable to Visit Dentist Due to Financial Issues	60 Patients – 43.5%

In Group I, 109 patients (78.98%) and in Group II, 73 patients (52.89%) do not disclose their Hepatitis C status, HIV status, MMT treatment, or drug use history to their dentists.

Table 4. Prevalence of Barriers to Dental Care Among Long-Term Methadone Maintenance Therapy Beneficiaries

First-Time Methadone Maintenance Program Group –138 Patients	
Fear of Visiting the Dentist	14 patients – 10.1%

Patients Not Disclosing Hepatitis C, HIV, MMT, or Drug Use to Dentists	73 Patients – 52.89%
Unable to Visit Dentist Due to Financial Issues	96 Patients – 69.6%

The high level of caries experience, as indicated by a DMFT >13.9, was 89.1% in Group I and 71.7% in Group II, and 9.0–13.9 was 8.7% in Group I and 21.7% in Group II, with a p-value of 0.001.

The high level of caries experience, as indicated by a DMFT >13.9, was also recorded in 53.6% of patients with more than 10 years of illicit drug use experience, while only 10.8% of patients with less than 1 year of illicit drug use experience had a high caries level (p = 0.003).

According to the Oral Hygiene Index (Simplified), poor hygiene (3.0–6.0) was observed in 24.6% of Group I and 17% of Group II, while good hygiene (0.0–1.2) was observed in 9.4% of Group I and 22.5% of Group II, with a p-value of 0.000.

Severe periodontal conditions (CEJ beyond 11.5 mm) were observed in 37.0% of Group I and 12.6% of Group II.

Discussion

The reluctance of patients to disclose their hepatitis C, HIV status, involvement in MMT, or history of substance use to dental professionals is concerning. This non-disclosure can lead to suboptimal care and missed opportunities for the reluctance of patients to disclose their hepatitis C, HIV status, or history of substance use to dental professionals is concerning. This non-disclosure can lead to suboptimal care and missed opportunities for early intervention. The stigma associated with these conditions likely plays a significant role in this behavior, highlighting the need for dental professionals to create a more accepting and supportive environment to encourage open communication.

The study also highlights the intertwined nature of chronic conditions such as hepatitis C, HIV, and substance use disorders. The higher prevalence of HIV among long-term MMT beneficiaries and the significant portion of patients with untreated hepatitis C emphasize the need for integrated healthcare services that address both addiction and its associated health complications. Furthermore, the correlation between the duration of opioid use and higher caries experience underscores the cumulative impact of prolonged substance use on oral health.

Among drug users, there were more active hepatitis C cases and fewer treated patients. However, among MMT beneficiaries, there were fewer hepatitis C infections and a higher number of previously treated patients.

At the Center for Mental Health and Prevention of Addiction, free hepatitis C screening tests are available, which may explain why more MMT beneficiaries have been previously treated for hepatitis C. Additionally, the hepatitis C elimination program of Georgia offers free testing and treatment with direct-acting antivirals (DAAs) for all citizens. This initiative has also contributed to a significant number of drug users receiving prior treatment. The MMT program positively

impacts patients' quality of life, motivating beneficiaries to participate in the hepatitis C elimination program in Georgia. (Anti-HCV, n.d.)(Nguyen et al., 2017)

Additionally, MMT beneficiaries who have been enrolled in the program for a longer period demonstrate a higher number of treated hepatitis C cases. This suggests that the duration of MMT enrollment is related to the number of hepatitis C patients treated, indicating a correlation between time spent in the program and the treatment of hepatitis C. There were also more untreated cases at the beginning of the MMT program.

A significant stigma surrounds methadone maintenance therapy, illicit drug use, hepatitis C, and HIV, often discouraging patients from disclosing their conditions to dentists. However, patients in Group II were more likely to disclose their conditions compared to those in Group I. Additionally, individuals enrolled in MMT for a longer duration tend to be more open about their conditions and more likely to inform their dentists, compared to newly enrolled patients or active drug users.

Only a small number of patients in both groups reported a fear of dental treatment. However, the more significant barrier to seeking dental care is the patients' financial status. Most individuals in both groups face financial challenges and typically visit the dentist only for urgent needs.

In Group II, more patients disclosed their conditions to their dentists, and there were also more treated cases of hepatitis C compared to Group I. Additionally, the prevalence of high rates of dental caries (DMFT > 13.9), poor oral hygiene status (OHI-s), and periodontal health issues was lower among MMT beneficiaries. These improvements were associated with the duration of enrollment in the program, with better oral health conditions observed in patients who had been enrolled for a longer time.

Conclusion

The study highlights the critical need for dental professionals to create a supportive, stigma-free environment to encourage the disclosure of health conditions, such as hepatitis C, HIV, and substance use, particularly among MMT beneficiaries. Low rates of disclosure can lead to the spread of infections among patients, dental professionals, and clinic staff. An integrated, interdisciplinary approach to healthcare, which combines dental care with addiction and chronic disease management, is essential to improve patient outcomes. Addressing the barriers related to financial constraints and stigma will ensure better access to care and more effective management of both oral and general health conditions for this vulnerable population.

References:

- Anti-HCV. (n.d.). *Characteristic n Weighted % Estimated number of adults >18 Hepatitis C Elimination in Georgia HCV Genotypes Prevalence and Estimated Number of HCV RNA+ Individuals by Regions and Cities*.
- Carlsen, S. E. L., Isaksen, K., Fadnes, L. T., Lygren, O. J. S., & Åstrøm, A. N. (2021). Non-financial barriers in oral health care: a qualitative study of patients receiving opioid maintenance treatment and professionals' experiences. *Substance Abuse Treatment, Prevention, and Policy, 16*(1). <https://doi.org/10.1186/S13011-021-00379-6>
- Drug-induced deaths – the current situation in Europe (European Drug Report 2024) | www.euda.europa.eu*. (n.d.). Retrieved December 8, 2024, from https://www.euda.europa.eu/publications/european-drug-report/2024/drug-induced-deaths_en
- Global Guidance on Criteria and Processes for Validation Elimination of Mother-To-child Transmission of HIV, Syphilis and Hepatitis B Virus*. (2021). World Health Organization.
- Guure, C., Obiri-Yeboah Laryea, S. M., Dery, S., Baptista Da Silva, C., Asamoah-Adu, C., Ayisi-Addo, S., Loglo, M. G., Mohammed, A., & Torpey, K. (2022). Behavioural Risk for HIV, Hepatitis B, and Hepatitis C Infections among a Population of Drug Users and Injectors across Four Regions in Ghana. *Interdisciplinary Perspectives on Infectious Diseases, 2022*. <https://doi.org/10.1155/2022/2544481>
- Heroin and other opioids – the current situation in Europe (European Drug Report 2023) | www.euda.europa.eu*. (n.d.). Retrieved December 8, 2024, from https://www.euda.europa.eu/publications/european-drug-report/2023/heroin-and-other-opioids_en
- Hovden, E. S., Ansteinsson, V. E., Klepaker, I. V., Widström, E., & Skudutyte-Rysstad, R. (2020). Dental care for drug users in Norway: dental professionals' attitudes to treatment and experiences with interprofessional collaboration. *BMC Oral Health, 20*(1). <https://doi.org/10.1186/S12903-020-01240-1>
- Janssen, E., Vuolo, M., Spilka, S., & Airagnes, G. (2024). Predictors of concurrent heroin use among patients on opioid maintenance treatment in France: a multilevel study over 11 years. *Harm Reduction Journal, 21*(1). <https://doi.org/10.1186/s12954-024-00934-x>
- Nguyen, L. H., Nguyen, L. H. T., Boggiano, V. L., Hoang, C. D., Van Nguyen, H., Le, H. T., Le, H. Q., Tran, T. D., Tran, B. X., Latkin, C. A., Zary, N., & Vu, M. T. T. (2017). Quality of life and healthcare service utilization among methadone maintenance patients in a mountainous area of Northern Vietnam. *Health and Quality of Life Outcomes, 15*(1). <https://doi.org/10.1186/s12955-017-0633-9>

- Piralishvili, G., Otiashvili, D., Sikharulidze, Z., Kamkamidze, G., Poole, S., & Woody, G. E. (2015). Opioid Addicted Buprenorphine Injectors: Drug Use During and After 12-Weeks of Buprenorphine-Naloxone or Methadone in the Republic of Georgia. *Journal of Substance Abuse Treatment, 50*, 32-37. <https://doi.org/10.1016/j.jsat.2014.10.003>
- Shekarchizadeh, H., Khami, M. R., Mohebbi, S. Z., Ekhtiari, H., & Virtanen, J. I. (2019). Oral health status and its determinants among opiate dependents: A cross-sectional study. *BMC Oral Health, 19*(1), 1-7. <https://doi.org/10.1186/S12903-018-0691-3/TABLES/5>
- The oral health status and behaviour of methadone users in Lithuania – PubMed.* (n.d.). Retrieved November 30, 2024, from <https://pubmed.ncbi.nlm.nih.gov/29806656/>
- Treloar, C., Rance, J., & Backmund, M. (2013). Understanding Barriers to Hepatitis C Virus Care and Stigmatization From a Social Perspective. *Clinical Infectious Diseases, 57*(suppl_2), S51-S55. <https://doi.org/10.1093/CID/CIT263>
- Understanding Europe's drug situation in 2024-key developments (European Drug Report 2024).* (n.d.).
- Viral hepatitis elimination barometer among people who inject drugs in Europe About the elimination barometer.* (n.d.).
- Walker, J. G., Tskhomelidze, I., Shadaker, S., Tsereteli, M., Handanagic, S., Armstrong, P. A., Gamkrelidze, A., Vickerman, P., Josephine, W. G., Irina, T., Shaun, S., Maia, T., Senad, H., Paige, A. A., Amiran, G., & Peter, V. (2023). Insights from a national survey in 2021 and from modelling on progress towards hepatitis C virus elimination in the country of Georgia since 2015. *Eurosurveillance, 28*(30), 2200952. <https://doi.org/10.2807/1560-7917.ES.2023.28.30.2200952>
- Weeks, C., & Stenstrom, D. M. (2020). Stigmatization of opioid addiction based on prescription, sex and age. *Addictive Behaviors, 108*. <https://doi.org/10.1016/J.ADDBEH.2020.106469>
- Zwick, J., Appleseth, H., & Arndt, S. (2020). Stigma: how it affects the substance use disorder patient. *Substance Abuse Treatment, Prevention, and Policy, 15*(1). <https://doi.org/10.1186/S13011-020-00288-0>
- გამყრელიძე თ., თოდაძე ხ. მეთადონით ჩანაცვლებითი თერაპიის ეფექტურობის შეფასება აივ ინფიცირებულ პაციენტებში. (n.d.). <https://doi.org/10.1111/j.1360>
- ისტორია და საქმიანობა – ფსიქიკური ჯანმრთელობის და ნარკომანიის პრევენციის ცენტრი. (n.d.). Retrieved December 29, 2024, from <https://mhpa.ge/istoria-da-saqmianoba/>