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TELEMEDICINE SERVICES IN GEORGIAN PENITENTIARY INSTITUTIONS: AWARENESS, UTILIZATION AND PERCEIVED BENEFITS AMONG INCARCERATED INDIVIDUALS

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ტელემედიცინის სერვისები საქართველოს სასჯელაღსრულების დაწესებულებებში: ცნობიერება, გამოყენება და აღქმული სარგებელი პატიმრებში

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² გულ-სისხლძარღვთა და მეტაბოლური დაავადებების პრევენციის ლაბორატორია, პრევენციული მედიცინის დეპარტამენტი, ლოდის სამედიცინო უნივერსიტეტი, პოლონეთი

რეზიუმე

ტელემედიცინა თანამედროვე ჯანდაცვის ერთ-ერთი მნიშვნელოვანი მიმართულებაა, რომლის მნიშვნელობა განსაკუთრებით იზრდება პენიტენციურ სისტემაში, სადაც სამედიცინო მომსახურების ხელმისაწვდომობა ხშირად დაკავშირებულია გეოგრაფიულ, ორგანიზაციულ და უსაფრთხოების გამოწვევებთან.

კვლევის მიზანი იყო საქართველოს პენიტენციურ დაწესებულებებში პატიმართა ტელემედიცინის შესახებ ცნობადობის, ტელეკონსულტაციის გამოყენების გამოცდილების, აღქმული სარგებლის, ბარიერებისა და დამოკიდებულებების შეფასება. ჩატარდა რაოდენობრივი, ჯვარედინ-სექციური კვლევა საქართველოს პენიტენციური სისტემის სამ დაწესებულებაში. კვლევაში მონაწილეობდა 122 რესპონდენტი, ხოლო შერჩევა განხორციელდა არაპრობაბილისტური (მოხერხებულობის) მეთოდით. მონაცემები დამუშავდა აღწერითი სტატისტიკური მეთოდების გამოყენებით. კვლევის შედეგების მიხედვით, რესპონდენტთა 60.7%-ს ჰქონდა ინფორმაცია ტელემედიცინის შესახებ, ტელემედიცინის მთავარ უპირატესობად დასახელდა სამედიცინო მომსახურების დროული მიღება (80.4%), ტელეკონსულტაციის გამოცდილების მქონე რესპონდენტთა 82.1% კმაყოფილი იყო მიღებული მომსახურებით, ხოლო ყველაზე მოთხოვნად სპეციალისტად დასახელდა ფსიქიატრი (72.1%).

კვლევის შედეგები მიუთითებს, რომ ტელემედიცინა დადებითად აღიქმება საქართველოს პენიტენციურ სისტემაში და გააჩნია მნიშვნელოვანი პოტენციალი სპეციალიზებულ სამედიცინო მომსახურებაზე ხელმისაწვდომობის გასაუმჯობესებლად. ფსიქიკური ჯანმრთელობის სერვისებზე მაღალი მოთხოვნა ხაზს უსვამს ტელეფსიქიატრიის შემდგომი განვითარების აუცილებლობას.

1. Introduction. Delivering adequate healthcare within correctional facilities presents a profound systemic challenge. Prisoners have higher rates of chronic diseases, substance use, mental health disorders and communicable infections than the general population, often exacerbated by the prison environment [1-4].

The increased burden of disease in penitentiary institutions, often leads to greater demand for healthcare resources, coupled with necessary security measures. Geographic accessibility is also a critical factor; prisons are usually far from hospitals and medical centers. They are typically situated in peripheral or remote areas, whereas multidisciplinary healthcare centers are primarily located in urban settings [5-8].

In this context, innovative approaches such as telemedicine are increasingly being explored as viable solutions to bridge the healthcare access gap through remote consultations and specialized care. Specifically, telemedicine tackles challenges such as limited on-site healthcare personnel, transportation

logistics and security risks relating to physical medical visits, thus improving the provision of comprehensive care to prisoners [6,9,10].

“All prisoners shall be treated with the respect due to their inherent dignity and value as human beings” [11]. Prisoners should have access to a doctor at all times, regardless of their detention regime, with particular attention to those in solitary confinement. Medical consultations should be provided on time and care should be supervised by healthcare professionals with regular follow-up. All prisoners must receive healthcare equivalent to that available in the civilian sector and they should not have to pay for it if they can't afford it [11-15].

Telemedicine may play a particularly important role in resource-limited healthcare systems, especially within correctional facilities. Remote consultations can help overcome challenges related to geographical accessibility, security requirements, and shortages of healthcare personnel, thereby improving access to timely and specialized medical care [16-18]. However, despite progressive reforms in penitentiary medicine, critical empirical gaps persist regarding service optimization and patient-level adaptation [19-21].

This issue is particularly relevant in Georgia, where considerable efforts have been made to improve primary healthcare services in the penitentiary system and to enhance digital health governance. Nevertheless, the adoption and practical application of telemedicine within the correctional healthcare system have received relatively little research attention [19].

Amid the global growth of digital healthcare, there is limited data in the literature on the awareness and experience of telemedicine among prisoners. Identifying user perceptions and attitudes is crucial to ensuring the successful planning and implementation of remote medical services in prisons [22-24].

Therefore, the aim of the study was to assess the awareness, perceived benefits and attitudes towards telemedicine services among prisoners in Georgian penitentiary institutions (3 institutions were selected). The study also examined barriers to the use of teleconsultation by beneficiaries and areas of potential future demand for services.

2. Materials and Methods. This quantitative, cross-sectional study was conducted between January 1, 2025 and March 1, 2025 in three penitentiary institutions of the Georgian penitentiary system. A total of 122 respondents participated in the study. A non-probability (convenience) sampling method was applied.

The study was planned in accordance with ethical principles. Ethical approval was obtained from the Medical Ethics Committee of the National Center for Disease Control and Public Health named after L. Sakvarelidze (IRB0000215).

The aim of the study was to assess prisoners' knowledge, attitudes, level of satisfaction, perceived benefits, and barriers regarding telemedicine services in selected penitentiary institutions in Georgia. Based on this aim, the following objectives were established: to assess the level of awareness and knowledge regarding telemedicine services; to examine the experience and frequency of teleconsultation use; to evaluate satisfaction and attitudes toward teleconsultation services; and to identify the most demanded medical specialties for teleconsultation within the penitentiary system.

2.1. Statistical analyses. The statistical analyses were performed using the Statistica software package (StatSoft Polska Sp.z o.o. 2026, version 5.2.67; www.statsoft.pl). Descriptive statistics were used to summarise the sociodemographic characteristics, patterns of health care utilisation, awareness of telemedicine and attitudes towards teleconsultation services among incarcerated individuals. Categorical

variables are expressed as frequencies and percentages. Since the satisfaction-related variables were measured on Likert scales, medians and interquartile ranges were used to summarise the responses. A comparative descriptive analysis was performed by gender and by type of penitentiary institution. Results were presented by tables, bar charts and median plots.

3. Results. The study was conducted in three penitentiary institutions in Georgia and included 122 respondents. The majority of participants were male 74%, while females accounted for 26% of the sample. The largest age group was 40–50 years, representing 35.2% of all respondents. Most participants were convicted prisoners 90.2%, whereas 9.8% were awaiting a court decision. A substantial proportion of respondents had completed higher education 50%. Nearly half of the participants had been serving a sentence for a period ranging from one to five years.

According to the results of the study, 60.7% of respondents had information about telemedicine, while 38.5% were not aware of the concept. In addition, 45.9% believed that it is possible to receive accurate medical services through telemedicine. 45.9% of beneficiaries (n=56) used teleconsultation during their sentence; about half of them used it 1 or 2 times, while the rest used it 3 times or more.

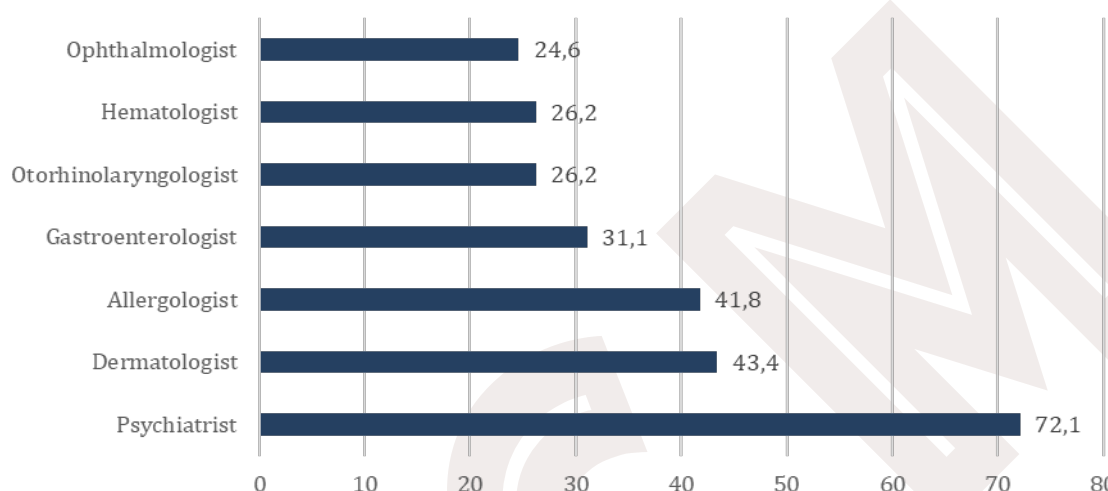
The majority of the study participants perceived telemedicine as the provision of healthcare services using information and communication technologies (58.2%) and the implementation of medical services remotely (55.7%). In addition, 36.9% of respondents associated telemedicine with all of the listed components. It is noteworthy that almost a third of the participants (32.8%) considered telemedicine only as telephone communication with a doctor. When asked which specialists would be most in demand for remote consultations, the participants' answers were distributed as follows: The most popular specialist was a psychiatrist (72.1%). Also named were a dermatologist (43.4%), an allergologist (41.8%), and a gastroenterologist (31.1%).

Table 1. Sociodemographic and science-related characteristics of study participants (n=122)

Variable	Category	Number (n)	Percentage (%)
Gender	Male	90	74.0
	Female	32	26.0
Age Group	18–28	31	25.4
	29–39	33	27.0
	40–50	43	35.2
	51+	15	12.3
Legal Status	Awaiting Trial	12	9.8
	Convicted	110	90.2
Education Level	Incomplete Secondary Education	12	9.8
	Secondary Education	33	27.0
	Incomplete Higher Education	16	13.2
	Higher Education	61	50.0
Type of Penitentiary Institution	Women's Special Facility	32	26.2
	Closed-Type Penitentiary Institution	56	45.9
	Low-Risk Correctional Facility	34	27.9
Marital Status	Married	69	56.6
	Single	52	42.6
	Other	1	0.8
Time Served	Less than 1 Year	33	27.0
	1–5 Years	58	47.5

	More than 5 Years	30	24.5
	Prefer Not to Answer	1	0.8
Remaining Sentence	Less than 1 Year	39	31.9
	1–5 Years	51	41.8
	More than 5 Years	13	10.6
	Unknown	10	8.1
	Prefer Not to Answer	8	6.6

Figure 1. Demand for Teleconsultation by Medical Specialty



Among participants who had experience with teleconsultation (n=56), 82.1% reported being satisfied with the service received, while 17.9% preferred not to answer the question. The most frequently reported benefit was timely access to healthcare services (80.4%), followed by receiving care with fewer resources (57.1%) and avoiding transportation-related inconvenience (53.6%). The most commonly reported barriers were internet connectivity problems (23.2%) and insufficient technological skills (23.2%). Notably, 26.8% of respondents reported experiencing no barriers during teleconsultation use.

Table 2. Perceived benefits and barriers of teleconsultation among participants (n=56)

Category	Item	N	%
Benefits	Timely access to medical care	45	80.4
	Receiving healthcare with fewer resources	32	57.1
	Avoidance of transportation-related inconvenience	30	53.6
Barriers	Internet connectivity problems	13	23.2
	Lack of technological skills	13	23.2
	Difficulties related to screen-based communication	2	3.6
	No barriers encountered	15	26.8

Figure 2. Attitudes Toward Teleconsultation Among Participants

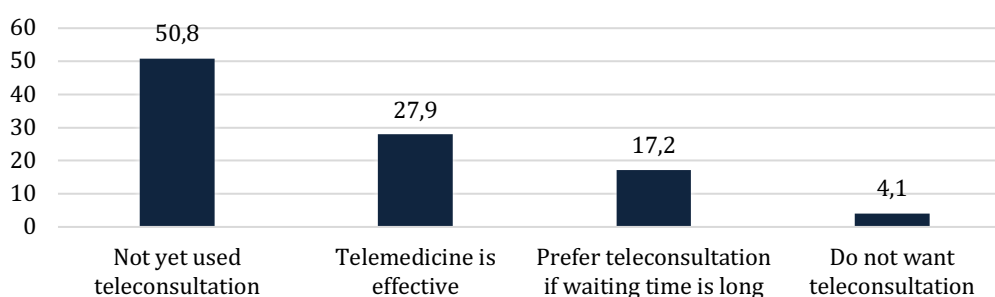


Figure 2 shows the participants' attitudes towards teleconsultation. The majority of respondents (50.8%) have not yet used the teleconsultation service. In addition, 27.9% of respondents believe that telemedicine is an effective medical service, and 17.2% indicate that they would prefer teleconsultation in case of a long wait. Only 4.1% expressed their unwillingness to use the service.

4. Discussion. A survey conducted in Georgian penitentiary institutions revealed that 60.7% of participants (n=122) were aware of telemedicine. 45.9% of respondents had used teleconsultation at least once. Given that the service has only been operating for a few years in Georgian penitentiary institutions, the results obtained indicate a relatively satisfactory level of awareness and use of telemedicine, as shown in international studies [23]. A systematic review showed that the use of telemedicine in prisons is associated with increased access to medical services, patient satisfaction, and more efficient use of healthcare resources. One of the main findings of the study was that 80.4% of participants cited timely access to services as an advantage of telemedicine, as shown in the study "Telemedicine: contributions, difficulties and key factors for implementation in the prison setting" [24], which, among other issues, discusses the importance of remote consultation for timely access to services. It is also reported that despite the potential benefits of the service, the implementation of telemedicine in Spanish prisons is still limited and inconsistent. Similarly, the present study also revealed that despite the high demand for medical services, 50.8% of participants have not yet used teleconsultation.

45.9% believed that telemedicine could provide accurate medical care. A similar result was shown by a study conducted in a Colorado prison, which highlighted the importance of remote consultations for a vulnerable population such as prisoners [1]. Respondents cited internet connectivity problems and lack of technological skills as barriers to using the service. Similar challenges have been described in various academic sources, where technical infrastructure and digital competencies are considered important factors for the successful implementation of telemedicine [24,25]. Despite the above barriers, our study results indicate a positive attitude towards telemedicine, as only 4.1% of respondents expressed a lack of desire to use the service. This result indicates that telemedicine is an acceptable format for the majority of beneficiaries and there is potential for further expansion of the service. It is also worth noting an important result of the study: a large majority of respondents (72.1%) named a psychiatrist as a specialist in demand.

Mental health management remains one of the important challenges of the penitentiary system. In this context, the Deslich study on Telepsychiatry in Correctional Facilities emphasizes that telepsychiatry is the most practical and effective model of telemedicine in a penitentiary environment [26]. This approach not only increases access to specialized services, but also plays a critical role in maintaining continuity of care [23]. Our findings are consistent with this international trend: the vast majority of respondents (72.1%) named psychiatrists as the most sought-after specialist. This finding may reflect the substantial mental health needs commonly reported among incarcerated populations. A similar phenomenon is observed in other empirical studies, where prisoners clearly prefer telemedicine when assessing their mental health needs [27]. In addition, eliminating the need for transportation of prisoners outside the institution for such specific consultations significantly increases patient comfort and lays the foundation for a much more humane, patient-centered approach to penitentiary health care [24].

Accordingly, the further development of telepsychiatric services in Georgian penitentiary institutions may have important practical and ethical implications.

5. Conclusion. Our empirical study showed that the interest and initial awareness of telemedicine in the Georgian penitentiary system is quite promising. A significant part of the beneficiaries clearly perceives the practical benefits of remote healthcare, where the main advantage is the timely receipt of

medical services. The position of those convicts who already have personal experience is particularly noteworthy; the high level of satisfaction recorded among them indicates that the digital format has great potential for acceptance in penitentiary institutions. Beyond the infrastructural analysis, the study highlighted the critical need for mental health care. The high demand for psychiatric services expressed by prisoners confirms that the development of telepsychiatry should become one of the top priorities in the Georgian penitentiary reality. Of course, the full implementation is currently hampered by technical barriers — primarily, unstable Internet connections and the lack of digital literacy. However, these limitations do not detract from the main value of telemedicine: it can radically improve access to specialized medical services where geographical barriers exist.

Ultimately, the findings allow us to conclude that remote clinical services are a strategic lever for the modernization of the prison healthcare system. In order to move to a larger model, it is necessary to establish a technological base and expand the telepsychiatric network. Only with such interventions will it be possible for persons deprived of their liberty to have the constitutional right to receive quality, confidential and timely medical care.

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SUMMARY

Introduction: Telemedicine is one of the important directions in modern healthcare, which is particularly relevant in the prison system, where access to medical services is often associated with geographical, organizational, and security-related challenges. The aim of the study was to assess the awareness of telemedicine among individuals in Georgian penitentiary institutions, their experience with teleconsultations, perceived benefits, barriers, and attitudes.

Materials and Methods: A quantitative, cross-sectional study was conducted from January 1 to March 1, 2025, in three institutions of the Georgian penitentiary system. A total of 122 respondents

participated in the study. Selection was done using a non-probabilistic (convenience) sampling method. The data were processed using descriptive statistical methods.

Results: 60.7% of respondents had knowledge about telemedicine, while 45.9% had used teleconsultation services at least once. 45.9% of participants believed that it is possible to receive accurate medical care through telemedicine. The main advantage of telemedicine identified was timely access to medical services (80.4%). The main barriers to using teleconsultation were found to be internet connectivity issues (23.2%) and lack of technological skills (23.2%). Among respondents who had experience with teleconsultation, 82.1% were satisfied with the received service. The most in-demand specialist was a psychiatrist (72.1%). Only 4.1% of respondents expressed no desire to use teleconsultation.

Conclusion: The study results suggest that telemedicine is well-received in Georgia's penitentiary system and holds significant potential for improving access to specialized medical services. The high demand observed in the field of mental health highlights the importance of further developing telepsychiatry. Despite existing technical barriers, further integration of telemedicine could make a meaningful contribution to increasing the efficiency of the prison healthcare system.

Keywords: telemedicine, teleconsultation, penitentiary system, healthcare accessibility