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FACILITATORS AND BARRIERS TO SCALING-UP INTEGRATED CARE FOR ARTERIAL HYPERTENSION AND TYPE 2 DIABETES IN SLOVENIA: QUALITATIVE STUDY

PRILOŽNOSTI IN OVIRE ZA IZBOLJŠANJE CELOSTNE OSKRBE ARTERIJSKE HIPERTENZIJE IN SLADKORNE BOLEZNI TIPA 2 V SLOVENIJI: KVALITATIVNA ŠTUDIJA

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ABSTRACT

Introduction: Arterial hypertension and type 2 diabetes are significant contributors to global non-communicable disease-related mortality. Integrated care, centred on person-centred principles, aims to enhance healthcare quality and access, especially for vulnerable populations. This study investigates integrated care for these diseases in Slovenia, providing a comprehensive analysis of facilitators and barriers influencing scalability.

Methods: Qualitative methods, including focus group discussions and semi-structured interviews, were employed in line with the grounded theory approach. Participants represented various levels (micro, meso and macro), ensuring diverse perspectives. Data were collected from May 2019 to April 2020, until reaching saturation. Transcripts were analysed thematically using NVivo software.

Results: Nine categories emerged: Governance, Health financing, Organisation of healthcare, Health workforce, Patients, Community links, Collaboration/Communication, Pharmaceuticals, and Health information systems. Some of identified barriers were political inertia and underutilisation of research findings in practice; outdated health financing system; accessibility challenges, especially for vulnerable populations; healthcare workforce knowledge and burnout; patients' complex role in accepting and managing their conditions; collaboration within healthcare teams; and fragmentation of health information systems. Peer support and telemedicine were the only two potential solutions identified.

Conclusions: This study offers a comprehensive evaluation of integrated care for hypertension and type 2 diabetes in Slovenia, featuring insights into facilitators and barriers. These findings have implications for policy and practice. Monitoring integrated care progress, refining strategies, and enhancing care quality for patients with these two diseases should be priorities in Slovenia.

Keywords:
Integrated care
Hypertension
Type 2 diabetes
Barriers
Facilitators

IZVLEČEK

***Uvod**: Arterijska hipertenzija in sladkorna bolezen tipa 2 sta kronični bolezni, ki pomembno prispevata k smrtnosti zaradi nenalezljivih bolezni. Integrirana oskrba, osredotočena na posameznika, si prizadeva izboljšati kakovost in dostopnost zdravstvenega varstva, zlasti za ranljive skupine prebivalstva. Namen te raziskave je prepoznati ovire in spodbujevalce za izboljšanje integrirane oskrbe teh dveh bolezni v Sloveniji.*

***Metode**: Izvedena je bila kvalitativna raziskava po principih utemeljitvene analize z uporabo fokusnih skupin in polstrukturiranih intervjujev. Udeleženci so predstavljali različne ravni (mikro, mezo in makro), kar je zagotavljalo raznolikost stališč. Podatki so bili zbrani od maja 2019 do aprila 2020, dosežena je bila nasičenost. Transkripte smo tematsko analizirali z uporabo programske opreme NVivo.*

***Rezultati**: Prepoznanih je bilo devet kategorij: politika, financiranje zdravstva, organizacija zdravstvenega varstva, zdravstveni delavci, pacienti, povezava s skupnostjo, sodelovanje/komunikacija, farmacija in zdravstveni informacijski sistemi. Identificirane ovire so bile: politična inertnost in nezadostna implementacija raziskovalnih ugotovitev v prakso, zastarel sistem financiranja, izzivi glede dostopnosti do zdravstvenih storitev (zlasti za ranljive skupine prebivalstva), pomanjkanje znanja in izgorelost zdravstvenih delavcev, kompleksna vloga pacientov pri sprejemanju in obvladovanju njihove bolezni, sodelovanje znotraj zdravstvenih timov in razdrobljenost zdravstvenih informacijskih sistemov. Med predlaganimi priložnostmi sta izstopala implementacija laičnega svetovalca in telemedicine.*

***Zaključki**: Ta študija prinaša celovito oceno integrirane oskrbe hipertenzije in sladkorne bolezni tipa 2 v Sloveniji ter vpogled v raznolika stališča deležnikov. Prednostno nalogo v Sloveniji predstavljajo sledenje napredku integrirane oskrbe, izboljševanje strategij in povečanje kakovosti oskrbe pacientov s tema dvema boleznima.*

***Ključne besede**: integrirana oskrba arterijska hipertenzija sladkorna bolezen tipa 2 ovire priložnosti*

This article was presented at the 2nd ISCPC conference, which took place in Cankarjev dom, Ljubljana, Slovenia, on 23 and 24 November, 2023. The conference was organised by the Community Health Centre Ljubljana and Medical Faculty, University of Ljubljana, Slovenia.

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1 INTRODUCTION

Arterial hypertension (HTN) and type 2 diabetes (T2D) stand as the leading chronic non-communicable diseases, accounting for nearly 70% of all deaths. Consequently, they have emerged as a growing global public health concern, driven by rapid urbanisation, an aging population, and the worldwide spread of unhealthy lifestyles (1, 2). Integrated care has been recognised as a crucial approach to confront this challenge, aligning with the concept of person-centred care. It aims to enhance access to healthcare, as well as its quality and continuity (3). The integrated care model for chronic non-communicable diseases, endorsed by the World Health Organization (WHO), encompasses the following elements: (a) identification, (b) primary healthcare (PHC) treatment, (c) health education, (d) self-management support, and (e) cooperation between care providers (4). Although many countries have partially implemented this model within their health systems, various facilitators and barriers persist across different levels, including patients, healthcare providers, and decision-makers (5, 6). In addition, different health systems worldwide exhibit distinct facilitators and barriers when it comes to scaling up the integrated care for these two diseases (7).

At the PHC level in Slovenia, a capitation system is established, and family physicians play a vital role as gatekeepers. They act as the central coordinators of care, both horizontally – collaborating with other healthcare professionals at the PHC, such as clinical pharmacists, physiotherapists, social workers, clinical psychologists, etc. – and vertically, liaising with specialists at the secondary and tertiary levels, as well as with the community (8). Advanced nurses assume responsibility for screening and managing patients with specific chronic non-communicable diseases, including HTN and T2D, using established protocols (9).

Several studies have been conducted to appraise various dimensions of integrated care, encompassing care models (10, 11), quality indicators (12), the level of knowledge and adherence to clinical guidelines (13, 14), financial considerations (15), the impact on the quality of life (15, 16), extent of patient knowledge (17), and health professionals' perspectives (18).

Despite the aforementioned studies, a comprehensive evaluation of integrated care for HTN and T2D, involving participants from various levels, remains unexplored in Slovenia. To address this gap, this paper utilises qualitative data to (1) identify the perspectives of participants at different levels regarding the implementation of integrated care for HTN and T2D, and (2) identify the facilitators and barriers that affect the scalability of integrated care for HTN and T2D in Slovenia.

2 METHODS

2.1 Study design and settings

This study employed a qualitative study design, utilising focus group discussions (FGDs) and semi-structured in-depth interviews, while applying the grounded theory approach. It was a part of the SCUBY project (SCaleUp diaBetes and hYpertension care) (19).

2.2 Sample

A multi-level WHO-based qualitative framework was employed, which categorises participants into three levels: micro (patients and health professionals), meso (healthcare providers), and macro (regulatory, financial, professional, and scientific stakeholders) (20). Participants were purposively put on the list and then randomly selected. Inclusion criteria were their relevance to the research themes and roles in the health system, ability to communicate verbally, representation of different geographic locations and coverage of all PHC team members (general practitioners, nurses, advanced nurses, prevention nurses, and community nurses). As data collection progressed, additional key informants relevant to the study were identified using the snowballing technique and subsequently added to the participant list.

2.3 Data collection

A common thematic guide was initially developed by a research team based on potential facilitators and barriers, relying on both literature research and contextual knowledge (data is available on request). The main themes were identification, treatment in PHC, health education, self-management, and cooperation between healthcare providers.

All interviews and FGDs were conducted in person by a researcher, accompanied by an observer who documented non-verbal communication. A team consisted of three researchers who had received advanced training from the experienced researcher APS prior to the commencement of the study, and were actively engaged in their roles as researchers during the study period. The research objective was introduced again prior to conducting interviews and FGDs, and participants were asked to provide written informed consent. Each participant was introduced using their first name.

The meetings took place at a designated location with audio recording equipment. Each session lasted between 30 to 90 minutes and was audio recorded. Data saturation was achieved. The interviews and FGDs were transcribed verbatim.

2.4 Analysis

Analysis was conducted using the QSR NVivo software. Thematic mapping facilitated the systematic identification of recurring themes and their interrelationships. The final codebook was developed through a stepwise process consistent with the grounded theory approach, incorporating both inductive (bottom-up) and deductive principles.

Two independent researchers carried out the analysis for each interview or FGD. They identified, compared, and categorised elements and concepts, employing open-coding principles to generate a list of emerging themes. The independence and clarity of each theme, as well as the criteria for its application and potential areas of overlap, were thoroughly evaluated. After achieving a consensus on the utility of each proposed theme, two researchers independently coded a transcript using a "chunking" approach, where subsets of text were assigned one or more themes and used to represent the specific context (21, 22). Themes were then gathered in categories and split in subthemes.

The iterative analysis employed participant, method, researcher and supervisor triangulation, enabling a comprehensive exploration of facilitators and barriers to integrated care for HTN and T2D.

2.5 Ethical consideration

The protocol of the overarching SCUBY project has received approval from the Institutional Review Board of the Institute of Tropical Medicine (ref: 1323/19) and the National Ethics Committee of Slovenia (ref: 0120-219/2019/4).

3 RESULTS

3.1 Participants

In total, 15 FGDs were conducted with participants at the micro level (seven with patients and eight with health professionals), along with 23 interviews (11 at the meso level and 12 at the macro level), spanning the period from May 2019 to April 2020. A detailed description of the FGDs with patients, FGDs with health professionals, and interviews is provided in Tables 1, 2, and 3, respectively.

3.2 Identified facilitators and barriers to scale-up

3.2.1 Governance

In the theme of "Political interest, commitment, and power dynamics", the barrier was the inactive and unresponsive political structure in Slovenia. Additional barriers emerged in the "Stakeholder collaboration" theme, with participants highlighting that innovations and adjustments are introduced without consulting relevant

Table 1. Participants in the focus group discussions with patients.

Characteristic	N	%
Gender		
male	14	33.3
female	28	66.7
Place of residence		
urban	32	76.2
rural	9	21.4
n/a	1	2.4
Age group		
≤49	1	2.4
50-54	1	2.4
55-59	2	4.8
60-64	2	4.8
65-69	11	26.2
70-74	10	23.8
75-79	10	23.8
80-84	3	7.1
≥85	2	4.8
Disease		
HTN	14	33.3
T2D	18	42.9
HTN and T2D	10	23.8
Employment status		
employed	5	11.9
unemployed	1	2.4
retired	35	83.3
n/a	1	2.4

Legend: HTN – arterial hypertension; T2D – type 2 diabetes; N – number

Table 2. Participants in the focus group discussions with patients.

Characteristic	N	%
Gender		
male	4	8.3
female	44	91.7
Workplace location		
urban	26	54.2
rural	22	45.8
Profession		
general practitioner	11	22.9
practice nurse	1	2.1
advanced nurses	20	41.7
prevention nurse	6	12.5
community nurse	10	20.8

Legend: HTN – arterial hypertension; T2D – type 2 diabetes; N – number

Table 3. Participants in the interviews.

Participants level	Participant
Meso	Community Health Centre Ljubljana (3 interviews)
	and Postojna
	Institution for informal home care
	Municipality of Ljubljana (2 interviews)
	Associations of patients with chronic diseases (2 interviews)
	Associations of patients with chronic diseases
	Nursing home
Macro	The National Institute of Public Health (2 interviews)
	The Health Insurance Institute of Slovenia
	Ministry of Health (2 interviews)
	Chamber of Pharmacies of Slovenia
	Health Council at Ministry of Health
	Nurses and Midwives Association of Slovenia
	Medical Faculty of Ljubljana, Department of Family medicine (3 interviews)
	Medical Chamber of Slovenia

Legend: HTN – arterial hypertension; T2D – type 2 diabetes

experts. Moreover, already published research findings are not acknowledged by policymakers and remain unimplemented.

"Innovations are implemented without prior piloting, but the pilot should be first and then implementation." (Meso level, female, code ZDL-113)

Within the "Policy, regulation, strategy" theme, potential facilitators encompass reduced taxes on healthy food choices and health-promoting recreational and educational activities. Additionally, possible improvements in food labelling, including larger and more comprehensive nutrient information, were identified. Ensuring that accurate content related to HTN and T2D is included in the media (internet, radio, television, etc.) was also deemed beneficial. Moreover, creating a national-level unified website for T2D and HTN, offering verified medical information in one location, implementing prescription training, and introducing a nominal pharmacy fee for medication collection to reduce excess medications at home were other facilitators that were identified.

3.2.2 Health financing

In the "Health insurance and social protection" theme, the outdated healthcare financing system, which prioritises service quantity over quality, was acknowledged as a barrier. A consensus emerged that reform is needed to support an integrated care model. In the "User financial payment" theme, the increasing demand for patient co-payments for services and medications was recognised, with an agreement that patients should not bear the financial burden of healthcare financing. Within the "Budget/Sources of funding" theme, participants linked the aforementioned issue to budget constraints, inefficient spending, and inadequate resource allocation.

"Financing models should be modernised to better suit integrated care, e.g., by focusing on health outcomes." (Macro level, female, code MB-36)

3.2.3 Organisation of healthcare

In the "Primary healthcare level" theme, the barriers related to healthcare facility accessibility based on location and the related financial burdens were identified. Urban areas struggle with a shortage of parking spaces near healthcare facilities, while rural regions face difficulties due to long distances to healthcare facilities. The introduction of advanced nurses in family practices was seen as a facilitator, enhancing monitoring and patient education. Patients less comfortable with technology faced a barrier when transitioning to new electronic communication methods, such as email or web portals.

In the "Secondary and tertiary healthcare level" theme, prolonged waiting times, which lead patients to opt for self-funded healthcare services, were acknowledged as a significant barrier.

Within the "Integration throughout the healthcare continuum" theme, participants noted the barrier of the duplication of services across various healthcare providers (e.g., patients with T2D often receive redundant treatments from family medicine doctors, advanced nurses, and diabetologists). They emphasised that expanding the range of services available at the PHC level and enhancing home care could be potential facilitators. Tailoring care to individual patient needs could also be encouraged by implementation of comprehensive and specific treatment plans, which include well-defined tasks for patients. Additionally, the adoption of telemedicine, especially for vulnerable populations such as geographically distant, elderly, or immobile patients, was highlighted as an effective strategy.

"Our experience with telemedicine pilot projects taught us that some patients with HTN have been over-treated, while for patients with T2D it was empowering to receive feedback on their measurements." (Macro level, female, code ZDT-5)

In the "Teamwork" theme, the barrier that was identified was the lack of clearly defined responsibilities among healthcare providers. Conversely, the introduction of dietitians, mental health consultants, and social advisors into PHC teams, along with the well-defined delegation of tasks, were all identified as facilitators.

Within the "Quality of care" theme, the implementation of regular supervision meetings aimed at improving patient care, education, risk management, and overall well-being was a recognised facilitator.

3.2.4 Health workforce

Within the "Time burden" theme, the barrier of a shortage of medical personnel leading to excessive workloads and an elevated risk of burnout was identified. The burden of administrative tasks was also acknowledged as hindering curative and, particularly, preventive activities.

"Physicians are burdened by computer tasks, reducing their ability to fully engage during check-ups." (Patient, male, code FSFB-304)

Within the "Education and training" theme, the barrier of insufficient knowledge and a lack of regular refreshment, including understanding patient motivation, were discerned. It was also acknowledged that healthcare workers at times fell short in offering adequate support, displayed impatience, were resistant to alternative treatment methods, and set a poor example by consuming unhealthy food and smoking in the presence of patients.

3.2.5 Patients

Barriers identified in the "Patient empowerment" theme were that some patients find it challenging to accept a new illness and may not fully accept responsibility for their health and self-care, often shifting it onto the healthcare system. Although they have access to reliable and verified information, they frequently struggle to follow medical instructions and recommendations, such as regular medication use or attendance at workshops.

In the "Lifestyle" theme, participants recognised the barriers associated with the motivation to make lifestyle changes. Incentivising patients who adopt a healthy lifestyle was thus identified as a facilitator.

"If you've lived unhealthily for 60 years, your body initially resists change. It is hard, but progress can be made with gradual steps." (Patient, male, code FSBA-180)

3.2.6 Community link

Within the "Patients associations" theme, patient associations were identified as a facilitator by playing a crucial role in bridging the gap between healthcare professionals and the general public. They are seen as valuable sources of reliable information about diseases, empowerment, and emotional support. Patients put a high level of trust in these associations.

In the "Individuals" theme, participants recognised the positive impact of educating patients' family members. This education can improve patient care and reduce the burden on the healthcare system.

Within the "Informal caregivers" theme, the introduction of peer supporters was highlighted as a facilitator to address the shortage of healthcare professionals and empower patients and their families. These would be individuals living with HTN and T2D who receive specialised training to offer reliable information to other patients.

"Patients are more inclined to trust peer supporters who can relate through shared experiences - these cannot be received from health professionals." (Meso level, male, code DDO-162)

Within the "Local community" theme, multiple facilitators were recognised. Participants underscored the authority of municipalities (local authorities) and the need for them to play a more active role in promoting a healthy lifestyle. Additionally, there was a call for systematic education on maintaining a healthy lifestyle to be included in primary schools. Moreover, participants emphasised the importance of employers encouraging their employees to embrace healthy habits.

3.2.7 Collaboration/communication

Within the "Horizontal and vertical collaboration" theme, participants noted barriers in both horizontal (within healthcare teams) and vertical collaboration (between different levels in the healthcare system). The latter is limited to formalised systems of referrals and reports, which are considered inadequate. Consequently, the exchange of information is challenging.

"Collaboration between healthcare professionals and social workers is severely lacking, despite the pivotal role of social issues in elder care." (Meso level, female, code ZDL1-215)

3.2.8 Pharmaceutical

Within the "Pharmaceutical" theme, the participants noted that one facilitator was the role of the pharmaceutical industry and pharmacies in educating and advising patients on the safe and effective use of medications. Nonetheless, the participants also pointed out the barrier of an excessive focus on product sales by these entities, which, in their opinion, hinders the provision of trustworthy information regarding the effectiveness of specific drugs and dietary supplements.

"I have reservations about pharmacies due to the overwhelming advertising in pharmacies, making me question the reliability of their information." (Patient, female, code FSBA-315)

3.2.9 Health information systems

In the "Fragmentation" theme, a barrier to the flow of information was found in the excessive number of health information systems, which lacked interconnectedness.

Within the "Data Management System" theme, data protection regulations were identified as an additional complicating factor. Conversely, in the "E-health" theme, the introduction of improved and more user-friendly interfaces for information systems was recognised as a facilitator.

4 DISCUSSION

This study represents a comprehensive exploration of integrated care for HTN and T2D in Slovenia, providing insights into the perspectives of participants at various levels within the healthcare system. It contributes to the existing body of knowledge from recent studies on this subject (18, 23). The study identified a range of barriers and facilitators related to the scaling-up of integrated care for these chronic conditions in various categories, including Governance, Health financing, Organisation of healthcare, Health workforce, Patients, Community links, Collaboration/Communication, Pharmaceutical, and Health information systems.

In our study, patients emphasised the challenges associated with accepting a new illness and taking responsibility for their health. These findings align with a previous study that reported a significant impact of T2D on dietary choices and reliance on others, including family life (16). Our study underscores the crucial role of patient empowerment through education and self-management to improve disease management outcomes, consistent with previously published research (10, 18, 24, 25). However, another study suggests that, despite the implementation of the National Diabetes Prevention and Care Development Programme in Slovenia from 2011 to 2020, knowledge levels among elderly patients with T2D either remained stagnant or worsened (17). Therefore, our study advocates for the exploration of innovative approaches to structured patient education, such as national websites providing verified and reliable information on chronic diseases. In the literature several concepts have been identified as promising approaches, such as T2D-care groups in the Netherlands and group appointments in Canada (24, 25).
The findings of our study highlight that patients have acknowledged the growing demand for co-payments for healthcare services and medications, as well as the increasing costs of transportation and healthy food. These factors present a significant challenge to effective care (18). Out-of-pocket expenses account for the second-largest portion (28.2%) of all HTN-related treatment costs in Slovenia, only behind expenditures on medicines (15). Potential solutions to address these barriers, as identified in our study, could include reducing taxes on activities and products that encourage a healthy lifestyle and implementing reforms in healthcare financing.

In addition to the shortage of healthcare personnel, our study has revealed that certain participants observed that some healthcare professionals do not consistently update and improve their knowledge about HTN and T2D. Another published study also indicated that the management strategies of Slovenian family physicians for HTN may not always align with accepted HTN-guidelines (14). Similar barriers have also been identified in international contexts (26). In our study, healthcare workers emphasised their need for enhanced knowledge in motivating patients, recognising its potential to reduce their daily responsibilities.

The results of our study reveal a predominant trend in healthcare delivery at the PHC level. The introduction of advanced nurses within family practices, actively screening patients for HTN and T2D, and providing regular check-ups, have all been recognised as making a significant contribution to holistic care (11). Similar findings were also reported in Switzerland (27). In Belgium, although the contribution of advanced nurses is acknowledged and they are increasingly employed in PHC practices, the lack of well-defined task descriptions still hinders their broader implementation (23, 28, 29). Another study that assessed six aspects of integrated care for HTN and T2D in Slovenia revealed that while patient identification was nearly fully implemented, self-management support lagged behind (10). These findings align with the results of our own study, and two possible solutions were identified. The introduction of peer supporters, who share their own experiences in managing HTN or T2D, is likely to be accepted by all participants (30). In addition, the implementation of telemonitoring can improve care for vulnerable patients, such as the elderly or those living in geographically distant areas (31).

4.1 Strengths and limitations of the study

The strengths of this study lie in its comprehensive examination of integrated care for HTN and T2D in Slovenia. To establish credibility, we employed a triangulation approach by using multiple data collection methods, engaging various researchers and supervisors, and involving participants from different healthcare levels and diverse data collection settings. To ensure the transferability of our findings, we provided not only a detailed account of the participants' experiences, but also the contextual factors. To maintain dependability and confirmability, we applied precise descriptions and maintained consistency in both data collection and analysis methods.

Nonetheless, this study has certain limitations. Firstly, the study's participants from the healthcare sector were solely recruited from PHC settings. Professionals working in secondary and tertiary healthcare may possess differing viewpoints that were not included in this study. Secondly,

transcripts were not shared with the participants for their feedback or correction, which could have limited their ability to provide input and validate the data.

5 CONCLUSION

This qualitative study has illuminated the perspectives of participants at different levels in Slovenia concerning integrated care for HTN and T2D. It underscores the imperative for multifaceted strategies addressing governance, health financing, the workforce, patient education, and healthcare system organisation. The insights garnered from this study hold significant value for guiding future healthcare policies and practices. To build upon this foundational knowledge, further research is imperative to monitor the progress of integrated care initiatives, gauge their impact on patient outcomes, and refine strategies for mitigating the identified barriers. The findings should act as a driving force for sustained efforts aimed at enhancing the quality of care for patients with HTN and T2D in Slovenia.

CONFLICTS OF INTEREST

The authors declare that no conflicts of interest exist.

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ETHICAL APPROVAL

The protocol of the overarching SCUBY project has been approved by the National Ethics Committee of Slovenia (ref: 0120-219/2019/4).

AVAILABILITY OF DATA AND MATERIALS

The data presented in this study can be obtained upon request from the corresponding author.

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