

ORIGINAL RESEARCH

Developing a novel sexual health counseling training for HIV healthcare providers in the Netherlands: A mixed method study

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ABSTRACT

Human immunodeficiency virus (HIV) healthcare providers often encounter challenges when discussing sexual health with people with HIV (PWH), despite recognizing its critical role in comprehensive care. Neglecting sexual health can lead to undetected problems, missed opportunities for guidance, and unaddressed psychosocial consequences. To support providers, we developed a theory- and evidence-based intervention using the Intervention Mapping (IM) approach to enhance sexual health counseling and promote discussions about sexuality. The intervention followed six IM steps: needs assessment, formulation of program objectives, selection of theory-based methods, program development, implementation planning, and evaluation through four online surveys measuring behavioral determinants before and after training. Focus groups and surveys confirmed the need for the intervention. After training, providers were more likely to initiate sexual health discussions with PWH during consultations. Positive trends were observed in attitudes, knowledge, social norms, and perceived skills. Overall, the training strengthened providers' confidence and competence, with real-life scenarios reinforcing practical skills.

Key Words: Communication, HIV, Healthcare provider, Nurses, Sexual health, Quality of life

1. INTRODUCTION

Healthcare providers (HCPs), particularly nurses, are expected to be competent in providing sexual health education. However, in nursing care and education, sexual health is often disregarded in favor of other relevant topics, and to avoid discomfort.^[1,2] HCPs experience difficulties in discussing sexual health with patients.^[3-5] During consultations, many physicians and nurses fail to engage in meaningful conversations about sexual health, missing opportunities to prevent negative health events.^[1]

Sexual health is an essential component of overall health and general well-being:^[6] "The ability to have a good sex life and to adapt and self-manage it in the face of social, physical, and emotional challenges in different phases of life".^[7] Such challenges arise in particular among patients with HIV-related medical conditions.^[8]

Efforts have been made training HCP to discuss sexual health in clinical settings.^[9,10] Previous research shows that nurses across various clinical settings often experience barriers to discussing sexual health with patients.^[1] However, sexual

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health, as part of health-related quality of life (HrQoL), should be addressed by all HCPs. They must have tools to initiate sexual health counseling (SHC) when appropriate, encouraging patient participation, especially in the field of HIV. More efforts are needed to promote adequate SHC in this setting. It is crucial to develop training programs that address the needs of people with HIV (PWH) and the learning requirements of their nurses.

Sexual health encompasses a multitude of topics, making it challenging to determine which to prioritize. PWH experience many issues related to sex.^[11] Therefore, HCPs should consider factors related to HIV infection: fear of virus transmission, loss of libido, changes in body image, lack of experiencing pleasure, alongside non-HIV related factors, e.g., aging or lifestyle.^[11] And, even if HCPs know what to discuss, they need to acquire the necessary skills.

Interventions are more effective when developed systematically, grounded in evidence and theory.^[12,13] We applied Intervention Mapping (IM), a systematic protocol for effective, step-by-step decision-making in intervention development, implementation, and evaluation,^[14] distinguishing theories about behavior from theories about change.^[15] IM has proven an effective approach for designing behavior change interventions, including those aimed at reducing sexual prejudice or preventing sexually transmitted infections (STIs).^[16,17]

The aim of this study was to develop an intervention encouraging HCPs to address sexual health during routine HIV consultations. Program development begins with a needs assessment (IM-Step 1): a thorough analysis describing the health-related problem, impact on quality of life, population at-risk, and relevant social-cognitive, behavioral, and environmental factors associated with the problem. Next, planners select target groups and formulate behavioral and social-cognitive change objectives, based on importance and changeability (IM-Step 2). In IM-Step 3, planners apply theory-based behavior change methods as applications in the final program (IM-Step 4), describe the adoption and implementation of the program (IM-Step 5), and the evaluation plan (IM-Step 6).

Below, we give a detailed description of how we systematically developed a tailored intervention for healthcare providers, and present the outcomes.

2. METHODS AND RESULTS

2.1 IM-Step 1: Logic model of the problem

A planning group was established, which produced a needs assessment by creating a logic model of the problem, assessing the context of the intervention, and specifying program goals. The outcome was a list of behaviors and determinants

that contributed to the problem, which served as starting points for the systematic development of an intervention

2.1.1 IM-task 1.1: Establishing a planning group

Members were selected based on their academic experience and expertise in IM, nursing care, and HIV care. The 11 experts had various expertise: interdisciplinary social science/IM, applied psychology/IM, health psychology/IM, nursing science/HIV patient care, physician/HIV patient care, three HIV experts and three HIV nurses: one specialized in sexual health and one the principal investigator (PI). This planning group convened on a monthly basis in various compositions to guide the IM process.^[14] Planning group members are encouraged to think about adoption and implementation from the start.

2.1.2 IM-task 1.2: Needs assessment

Four empirical studies were conducted.^[18–21] First, a cross-sectional survey was conducted among all Dutch HIV physicians (N = 110) and HIV nurses (N = 82) in order to gain further insight into their roles in SHC within routine HIV care.^[20] Participants were recruited via the Netherlands Association of HIV Physicians (NVHB) and the Netherlands Professional Association of HIV Nurses (VCH). Participants completed an online questionnaire about their current practice and involvement in SHC. SHC was provided less by physicians (26.1%) than by nurses (83.9%; $p < .001$). Nurses were more likely to discuss issues about patient well-being and psychosocial functioning. The main reason for not providing SHC was the presence of a third party. Physicians reported this 9% of the time, nurses 60.4%. The second reason was insufficient time due to the limited duration of consultations. The third was that patients themselves do not initiate conversations about SHC, interpreted as meaning that SHC should not be initiated by a physician or nurse. Both groups indicated a need for more practical knowledge and skills about sexual health issues and counseling. The planning group decided on the need for an intervention promoting SHC, specifically by nurses in routine HIV care. Additionally, as HIV in the Netherlands primarily affects men who have sex with men (MSM), the intervention should support HIV nurses in addressing sexual (risk) behavior during routine consultations with MSM with HIV. The second study focused on the experiences of HIV nurses in discussing SHC with MSM.^[18] This involved three semi-structured focus group discussions (FGDs) with 22 HIV nurses from 17 HIV treatment centers. The FGDs were transcribed and analyzed to identify meaningful patterns.^[22] HIV nurses infrequently initiated SHC, and lack of time was again the main barrier. Presence of a third party was never mentioned as a reason for not providing SHC; other reasons included embarrassment and having to cover many issues during routine HIV care,

making prioritization difficult. Nurses mentioned that feeling confident about their knowledge and skills is a prerequisite for SHC.

The third study was an online survey on the determinants of HIV nurses' discussing SHC with PWH, based on the Theory of Planned Behavior^[23,24] and the findings of the qualitative study.^[19] Seventy-nine HIV nurses completed a self-report questionnaire. Consistent with previous studies, the intention to prioritize SHC was impeded by time concerns and competing priorities. Supportive determinants were positive attitude, high perceived self-efficacy, and confidence in their own skills discussing sexual health. The intention to initiate and discuss sexual risk behavior was again found to be influenced by time concerns and other priorities during consultations, contrasted with a positive attitude and high perceived self-efficacy regarding SHC and confidence in knowledge and skills.^[20]

The fourth study comprised the analysis of video recordings of routine HIV consultations of HIV nurses with PWH from four Dutch HIV treatment centers, using real-life data from clinical practice to assess whether nurses' behaviors during consultations were in line with previous findings.^[21] Four participants from four hospitals consented to participate, and 16 recordings of consultations were analyzed. The duration of consultations, time spent on sexual health issues, topics addressed, and the communication functions and skills employed were all recorded. When sexual health was discussed, the time spent on this topic was relatively brief, with nurses typically adopting a more directive approach rather than engaging in conversation. SHC was not typically discussed during consultations. When discussed, effective communication was rare, and attention to psychological and social factors was limited. Nurses predominantly used technical communication skills and provided STI-test results and medical treatment.

2.1.3 IM-task 1.3: Intervention context

In the Netherlands, HIV care is provided in 24 HIV treatment centers by 110 HIV physicians and 86 HIV nurses. PWH visit an outpatient clinic once or twice a year for consultation with an HIV nurse who monitors patients' health, addresses medical and psychosocial needs, provides additional support and care, or refers to another specialist. All HIV nurses are registered nurses specialized in HIV care and members of the Dutch association of HIV Nurse Consultants. Some obtained a post-graduate qualification, and some completed dedicated sexual health training, provided by STI/AIDS Netherlands, the center for STI-prevention.

The VCH (2015) has developed guidelines; however, these are not recent and reflect a biomedical perspective.^[25] VCH guidelines refer to the relevant European guidelines, which state that all HCPs should ask PWH about their sexual and reproductive health to make sure that PWH receive appropriate and ongoing reproductive counseling. They do not include recommendations on what should be addressed, and how.^[26,27] The work of HIV nurses is mostly based on guidelines developed by the National Organization of HIV Physicians. Hospital managers also determine what and how nurses do their jobs.

2.1.4 IM-task 1.4: Program goals

The results of the needs assessment were summarized in the form of a logic model of the problem (see Figure 1) which identifies the overarching problem to be addressed on the right: suboptimal quality of sexual health and quality of life. Moving to the left, problems arise because PWH may experience multiple sexual health issues, plus the behavioral and environmental factors that may influence their sexual health. The planning group identified these behavioral factors as critical. At the far left of the model the determinants of providing SHC are shown which should be addressed by our intervention.

2.1.5 IM-task 1.5: Specifying program goals

The planning group discussed the findings of the needs assessment and used their expertise to define program goals for the three most important and changeable SHC-behaviors of HIV nurses "during routine HIV consultations":

- 1) Nurses initiate SHC
- 2) Nurses discuss and follow up SH topics more in depth
- 3) Nurses apply effective communication for SHC.

2.2 IM-Step 2: Program outcome and objectives; logic model of change

The planning group used the needs assessment findings to formulate outcomes for nurse behavior and performance objectives for each of these outcomes. Subsequently, the planning group identified important and modifiable determinants of the nurses' behavior. Finally, matrices were created specifying the change objectives for the program.

2.2.1 IM-task 2.1 and 2.2: Expected outcomes for nurses' behavior; performance objectives (PO's)

A multidisciplinary planning group formulated outcomes for the program goal, defined in step 1.5. The PI defined desired changes at the behavioral level (POs), to promote and increase the provision of SHC by nurses, making the required behavior of the nurse specific.

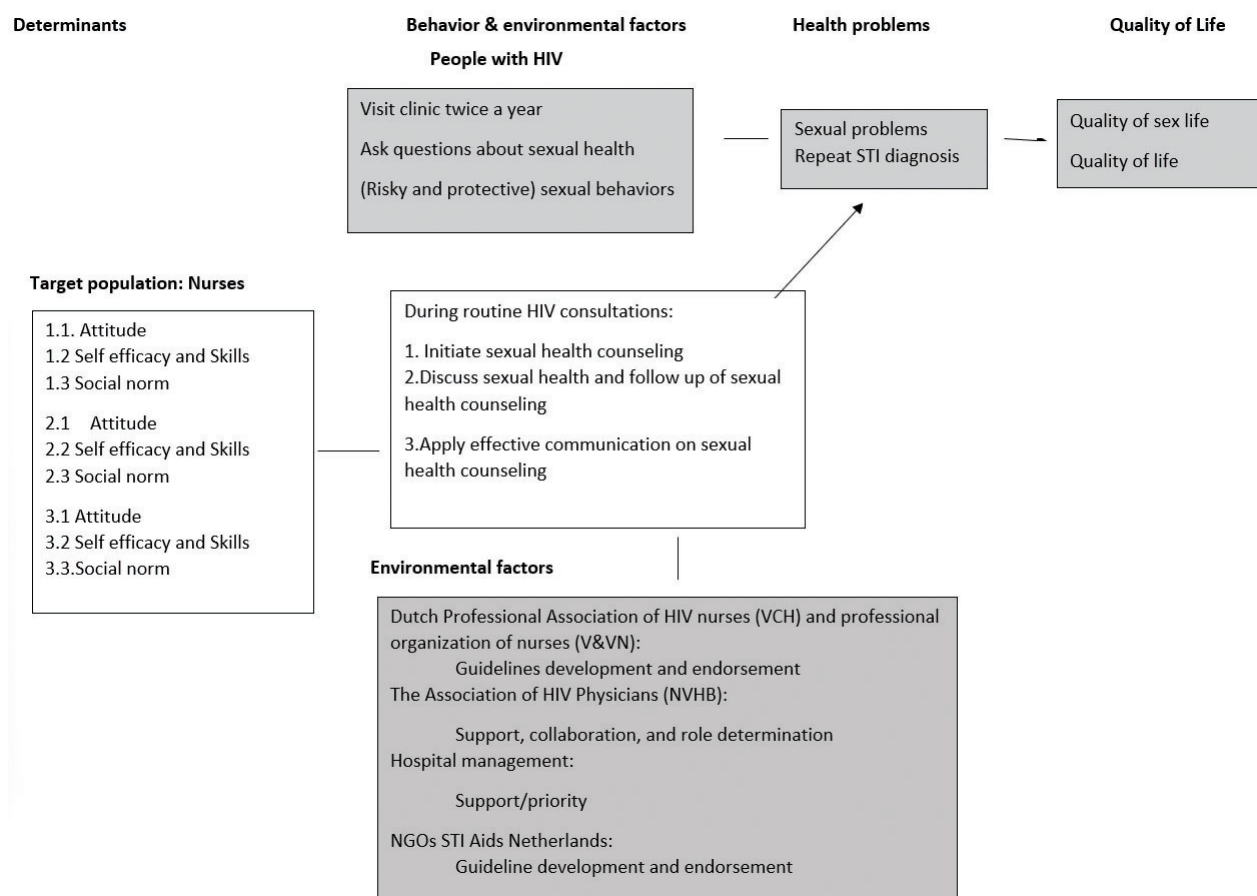


Figure 1. Logic model of the problem of HIV nurses in the Netherlands regarding providing sexual health counseling

PO 1: Nurses initiate SHC during routine HIV consultations twice a year. Sexual health communication currently does not meet the needs of patients; nurses have expressed that they only discuss sexual health when patients raised the topic.^[20, 28, 29] Moreover, sexual health was not sufficiently addressed between patients and nurses. These findings revealed a strong discrepancy between patients' and nurses' views on who is responsible for initiating this discussion and the willingness and comfort levels. Consequently, nurses should take the initiative, when necessary.^[30, 31]

PO 2: Nurses discuss SHC and follow up those topics linked to sexual health more in depth, twice a year, during routine HIV consultations. Patients regard effective sexuality communication as essential and feel comfortable with it.^[5, 31]

PO 3: Nurses communicate effectively about sexual health during routine HIV consultation twice a year. In our observational study, HIV nurses only occasionally applied communication skills (i.e., asking open questions) and rarely checked if the patient had understood the information given;^[21] in line with earlier studies.^[19, 20]

2.2.2 IM-task 2.3: Determinants of behavioral outcomes and M-task 2.4: Matrix of change objectives (CO's) and IM-task: 2.5 Logic model of change

After formulating these POs, we selected their determinants, based on relevance, strength of the association with the behavior, and changeability. Similarly, setting priorities, because other topics need attention during consultation, which negatively affects nurses' attitude towards SHC as well as the quality of SHC. For example, the presence of a third party (e.g. a translator) is not changeable, but may have influence. Some HIV nurses feel negative emotions, such as embarrassment and discomfort, indicating that perceived skills and personal norms and values are relevant. These insights indicate critical determinants of SHC which are changeable through training, supervision, and support. Finally, a multidisciplinary approach is needed to generate a supportive social norm, encompassing guidelines for HIV nurses, and additional training tailored to the needs of HIV healthcare providers. We identified attitude, social norm and self-efficacy/skills (and their underlying beliefs), as determinants in the matrix of change objectives.

COs were formulated that match each determinant with its

PO, guided by the needs assessment. For example, for “Nurses apply effective communication for talking about sexual health during routine HIV consultation”, “attitude” is one of the determinants; we formulated the CO “Describe applying communication skills as necessary and important”. This CO is necessary and achievable because sexual health is not always discussed during routine HIV consultation and, if brought up, often without structure and/or communication strategies.

A list of possible determinants was compiled, and refined

based on evidence from the literature and needs assessment. The Matrix of Change Objectives was developed connecting Performance Objectives with identified relevant and changeable Determinants, guiding the development of the training program (see Table 1). In the final task of step 2, we created the logic model of change for the intervention, combining performance objectives with determinants. As part of the later program evaluation, questions can be asked to determine whether HIV nurses achieved the performance objectives, which provides valuable information for evaluating the program’s effectiveness.

Table 1. Matrix for behavioral outcome: Nurses initiates, discuss, and apply effective communication of SHC

Performance objectives (PO) of HIV nurses	Personal determinants		
	Attitude (A)	Self-efficacy & skills (SSE)	Social norm (SN)
1. Nurses initiates and start to talk about SHC during routine HIV consultation twice a year.	1. Feel positive about initiating SHC during routine consultation.	1a. Express confidence in the ability to make the decision to initiate the SHC.	1a. State that patients approve and respect their decision to initiate SHC. 1b. Recognize that other professionals or patients have found SHC has enough advantages to be worthwhile to implement them.
2. Nurses discuss and follow up SHC during routine HIV consultation twice a year.	2. Feel positive about discussing SHC twice a year during consultation.	2a. Express confidence in the ability to discuss SHC twice a year. 2b. The nurses demonstrate actively how to use PLISSIT model and response curve when discussing SHC. 2c. Express confidence in applying 1) physical aspects within sexual health and 2) sexual dysfunction when necessary. 2d. Express confidence in applying theory of chemsex/relation/libido/desire linked to HIV to their patient.	2. Acknowledge that the national organization of nurses and physicians recognize applying communication function and skills is important in discussing SHC.
3. Nurses apply effective communicate linked to SHC with PWH during routine HIV consultation.	3a. Describe applying communication skill as necessary and important. 3b. Describes communication as being worth the effort to adopt.	3a. Demonstrate the ability to communicate to patients. 3b. Express confidence in ability to actively using biopsychosocial model during SHC. 3c. Demonstrate the ability of applying effective strategies of King and Hoppe (2013) to create an effective patient-provider dialogue regarding SHC.	3. Recognize that their colleagues SHC find relevant and is seen as part of their professional role.

Notes. Abbreviations SHC sexual health counseling; PWH: people with HIV.

2.3 Overview IM-Step 3: Program design

The logic model of the problem and the logic model of change form the basis for step 3, the selection of theory-based methods and practical applications. The first task was to generate ideas for program themes and to decide on their sequence, together with the planning group. The next task was to choose theory-based change methods to address program objectives. The final task in this step was to design practical applications for these methods.

2.3.1 IM-task 3.1: Generate ideas for the intervention

To ensure the intervention met the needs of HIV nurses, a linkage group of five full-time HIV nurses from various hospitals supported the planning group. This group provided

input on specific questions and tested ideas. Discussions with the linkage group resulted in several general themes for the intervention. First, nurses needed to be aware of a number of topics to be discussed with patients regarding sexual health. In addition, they required more knowledge about sexual health from both medical and psychosocial perspectives. With regard to communication strategies, nurses expressed a desire to exchange counseling experiences with other nurses. These themes were aligned with the earlier needs assessment.

Another vital finding was related to the mode of delivery. The linkage group recommended a flexible, hybrid, 1.5-day face-to-face training program to accommodate users’ needs

and time constraints. The final intervention was a 1.5-day training program. In our intervention, we used elements of a five-day course from 2005 designed for HIV nurses on basic knowledge regarding anatomy and physiology.^[25,32]

For the training, we reviewed literature on interventions for healthcare professionals in clinical settings. Verrasto (2020) found that participation in sexuality education programs significantly improved HCPs' ability to address patients' sexuality issues.^[33] The review emphasized the need for sexual health education and highlighted the importance of investing in training to enhance nurses' skills and comfort. Case studies and role-playing have considerable advantages over traditional lectures. This review supports the importance of providing HCP with at least some training, and the opportunity to organize longer training sessions with interactive activities to enhance their comfort and confidence when counseling patients on sexual issues.

2.3.2 IM-task 3.2: Choose theory- and evidence-based change methods

During three interactive sessions, based on the formulated objectives of the program, the planning and linkage group selected theory- and evidence-based methods for achieving the change objectives. Based on the nurses' experience and the results of the literature search, the most suitable methods were selected and translated into potentially feasible practical applications.^[14,33]

As the HIV nurses in the linkage group mentioned time as a barrier, time management was chosen as an important issue. Moreover, the planning group selected methods and applications appropriate for the context and clinical practice. Examples of the outcomes for PO1 are presented in Table 2. Methods and applications for PO1 (remaining), PO2 and PO3 are described in the supplementary files.

The determinants of the previous steps led to a choice of behavioral change methods that fit into a 1.5-day workshop. The final intervention needed to be flexible in use and easy to adjust, either face-to-face or online.

2.3.3 IM-task 3.3: Select or design practical applications

Translating behavioral change methods into applications requires a sufficient understanding of the theory behind the method, especially the parameters necessary for the effectiveness of the change process in practice.^[15] Table 2 provides an overview of the intervention for PO1: "Providers initiate SHC", including theory-based change methods, their translation into practical applications, and how these relate to earlier determinants. E.g., the change objective "Feel positive about initiating SHC during consultation" is related to 'attitude', leading to methods for changing attitudes, e.g. "Direct experience,

to encourage a process whereby knowledge is created through the interpretation of experience". Theoretical knowledge about sexuality was taught by multiple experts, each of whom tried to transfer their knowledge through examples from practice. The participants were then asked to practice initiating SHC during the training and in their own clinics. On the second day, role-play was used again to assess the nurses' attitudes when actively initiating SHC.

2.4 Overview IM-task 4: Program production

The first task is to refine the program structure and organization generated in IM-Step 3. The second task is to prepare plans for the program content. These documents will guide production, ensuring that the program materials and activities are relevant and follow the parameters for their selected methods and practical applications. The final task in this step is to pre-test, refine, and produce program materials.

2.4.1 IM-task 4.1: Refine program structure and organization

The project group developed a program based on all input, which was then presented to the linkage group for discussion and adjusted in two meetings. The project team, composed of three field experts, finalized the program based on established parameters, which include methods, applications, and specific details, outlined in the sections on the SHC pilot program (see Table 2, 2.1 and 2.2).

The 2005 sexual health training for HIV nurses consisted of five full days; nurses found this to be an excessive burden on their daily practice. We designed the new training to be one full and one-half day, with an interval of three months to increase the learning effect. The training was designed for all HCPs providing care for PWH and working in a hospital or public health organization. It was anticipated that approximately 33% of all HIV nurses in the Netherlands would participate: 28 participants. The training was accredited for both physicians and nurses in the field of HIV by the Accreditation Committee of the Quality Register. HCP are required to earn a certain number of these points in order to maintain their registration.

The linkage group considered it important to start on the first day with plenary expert talks rather than small group discussions, given the lack of knowledge indicated by participants and the discomfort they sometimes felt discussing sexual health. Speakers were selected based on expertise and experience; and invited for a face-to-face meeting to discuss the exact content of their contributions to prevent overlap. The duration varied: 30-45 minutes. Actors were approached through a national network in sexology, and context and case studies were explained during a one-on-one online conver-

sation. A week before the first training day, case-scenarios were reviewed in a joint online meeting involving the project group and three actors. Due to the national nature of the meeting, Utrecht was chosen, being centrally located.

Table 2. Overview of PO1 of sexual health counselling pilot program including methods, parameter and applications

Method and parameter of PO1: Nurses initiate SHC	Application
Attitude	
Feel positive about initiating SHC during consultation	
Shifting perspective: Encouraging taking the perspective of the other.	In the role play we discussed, practiced the different case studies from the patient's perspective. E.g.; what is it like for the patient to use this opening sentence? One nurse was able to practice the same case following feedback multiple times. And process the comments during practice.
Direct experience: Encouraging a process whereby knowledge is created through the interpretation of experience.	Theory in the morning is applied by 2 experts through case examples. Afterwards asked to practice in clinical setting and on return day to try again through role plays.
Information about health consequences: Provide information (e.g. written, verbal, visual) about health consequences of performing the behavior	The presentations of day 1 focuses on the fact that if you don't discuss the same complaints e.g. STD or libido loss, the same symptoms keep coming back. The importance of discussing and recording interventions was explained. This used to be more on intuition. By recording, evaluating and discussing the outcomes, the nurse can better refer or treat.
Credible source: Present verbal or visual communication from credible source in favour of or against the behavior	While practicing in practice through role playing the techniques learned will be applied. On day 2 there is a lot of attention for specific behavior to influence the outcome of a conversation.
Perceived skills & Self-efficacy	
Express confidence in the ability to initiate SHC	
Verbal persuasion: Using messages that suggest that the participant possesses certain capabilities.	Two expert nurses explained step by step through their own case histories how to put theory into practice. They also actively involve and empower the audience.
Planning coping response: Prompting participants to list potential barriers and ways to overcome these.	In small groups we discussed what would you do differently in your own hospital as a result of learning about SHC and practicing.
Demonstration of the behavior: Provide an observable sample of the performance of the behavior, directly in person or indirectly e.g. via film, pictures, for person to aspire to or imitate.	During both days there was a case study that was fully developed by 2 people via power point and discussed step by step in the group. On both days, role plays were practiced at different times.
The nurse demonstrates skills of initiating sexual health counselling in a practical setting	
Behavioral practice/rehearsal: Prompt practice or rehearsal of the performance of the behavior one or more times in a context or at a time when the performance may not be necessary, in order to increase habit and skill.	After practicing with role-play (actors), observed by colleagues and moderators. Nurses positive points about their skills are discussed with feedback so they can use them in clinical setting. Day 1 through self-submitted case studies, the skills of the nurses was evaluated and provided with feedback, and discussed anonymously in presentations by experts. Day 2, case studies were again discussed and nurses were given opportunities to practice in various roles multiple times; as observers, nurses, and listeners.
Social norm	
States that the patients approve and respect their decision to initiate SHC	
Credible source: Present verbal or visual communication from a credible source in favour of or against the behavior.	Informing patients at start consultation using share decision making that SHC is a topic to bring up.
Recognize that other professionals have found SHC has enough advantages to be worthwhile to implement them	
Information about others' approval: Provide information about what other people think about the behavior.	Talk to each other about how things are arranged within your own setting and with mutual agreements with colleagues. Here, a lot of attention was paid to the practice with examples to exchange experiences.
Social comparison: Draw attention to others' performance to allow comparison with the person's own performance.	Have a plenary discussion in small groups and discuss the differences and similarities within each other's setting.

Notes. The parameters for these methods can be found in Kok et al. (2016). Abbreviation; SHC sexual health counselling.

2.4.2 IM-task 4.2: Content of the program

Prior to the training, participants received two assignments: 1) write up a patient case in which the participant encountered difficulties addressing or discussing sexuality; 2) outline a sexology network in their own region, to determine if that network was comprehensive or if there were more potential partners.

The first part of day 1 started with an opening by the project group presenting a case study of their own clinical practice related to positive sexual health when discussing sexual health. Then followed three talks on basic knowledge about sexuality, focusing on sexual health problems linked with attitude, self-efficacy, skills and social norms. All presenters interacted with the audience by asking questions via

mentimeter.com.

The second part of day 1 involved translating theory into conversations in daily practice during routine consultation, introduced from the perspective of the nurse, followed by how-to-apply theoretical models during consultation. Then: conversation techniques, illustrated with examples, followed by an explanation which barriers and facilitators nurses and physicians may experience; from the provider's perspective. This allowed participants gaining a better understanding of how the theoretical concepts can be applied in real-life, and identifying factors that may hinder or support effective communication about sexuality. Small groups reviewed and discussed video recordings of routine HIV consultations. These sessions were mainly interactive to create a safe atmosphere and to build up confidence among participants. At the end of the second part of the first day, participants returned to the earlier case study and were asked to consider in their own network whom they could refer patients to in the region of their hospital.

The third part of day 1 was focused on clinical practice. Participants watched video footage of consultations in small groups and were asked questions (e.g. "what did you notice?") to engage them in conversations about the practice of SHC. This third part ended with a plenary session in which the importance of a sexology referral network was discussed based on a case study presented by two project group members. After this plenary session, participants were asked to map out their own network at home, make it comprehensible, and bring it to day 2.

On day 2, the focus was on role-playing and practicing case

scenarios for sexual health counseling, with the help of actors. Day 2 began with a plenary session, in which the theory from day 1 was integrated into practical examples. Two members of the project group went through a case study. Next, the participants dispersed into small groups and practiced their own case scenarios with actors, focused on skills training. Participants engaged in conversations as both professionals and observers, focusing on key points from a handout. This handout, along with observer notes, later guided evaluations of participants' attitudes and behaviors during case practice. Participants engaged in simulated scenarios applying their knowledge and skills related to discussing sexual health. These role-plays allowed them to simulate real-life interactions with patients, improving their communication techniques and addressing challenges they might encounter. By actively participating, participants had the opportunity enhancing their confidence and competence in discussing sensitive topics.

Day 2 concluded with a plenary session featuring reflections from one participant per group on their role-playing experiences and interactions with actors. Next, a plenary discussion about sexuality, sexual health guidelines, the clinical setting, how colleagues view discussing SHC during consultation, and possible differences between hospitals. A case study highlighted the importance of a robust referral network. Homework assignments were also discussed, and participants received the fully elaborated case studies from both days, providing a step-by-step guide on paper. Additionally, they were given the theoretical models discussed on day 1 in written form. Table 3 provides an overview of the SHC training program.

Table 3. Program of the pilot training sexual health counseling

Program	Agenda
Day 1	
Part one (3 hours) Overview of sexual health in the field of HIV	Positive sexual health: a case study Sexual and reproductive anatomy of males and females Psychological perspective related to sexual health and HIV Sexual problems and HIV (sexual behavior and STIs)
Part two (2 hours) Initiating and discussing sexual health in clinical practice	Discussing sexual health: from theory to clinical practice. Case examples and benefits of discussing sexual health Theoretical models: biopsychosocial model, PLISSIT, communication strategies linked with case studies Sexual history: which questions to ask, attitude of the care provider, how to apply theoretical models during counseling Barriers and facilitators of discussing sexual health from a provider's perspective Recognizing the importance of SHC; case studies
Part three (60 minutes) Clinical practice	Real life video registrations of consultations in clinical practice Practical tips and exploring referral options Summary via case study of theory discussed day 1.
Day 2	
Part one (60 minutes) Skills building & clinical practice	How to apply theoretical sexual models in a conversation (including communication skills) Capability of initiating sexual health and having an in-depth conversation Demonstrating skills: self-efficacy and assertiveness of care providers
Part two (90 minutes) Skills building	Scenarios of real-life case studies are discussed Role playing (effective patient-provider dialogue)

Notes. Abbreviation; SHC: sexual health counseling; STI: sexual transmitted infection.

2.4.3 IM-task 4.3: Pre-test, refine, and produce program materials

The program material compiled by the linkage process consisted of three elements. Initially, all experts provided a PowerPoint presentation to support the talk. The presentations were checked by members of the linkage group to prevent overlap, whether the content was sufficiently relevant; and to make final adjustments. The talks were mostly from a medical perspective; however, after input from the linkage group, more attention was given to the psychosocial aspect of sexuality. After the training, these presentations were sent to the participants at their request. Case studies from day 1 and 2 were three examples from the practice of an HIV nurse who was also a consultant sexologist, fully developed by the linkage group according to the theoretical models explained earlier. The linkage group assessed the case studies on content, relevance and applicability in daily practice, and final adjustments were made. After the training, all participants received the fully developed case studies to take home. An interview guide ensured that they discussed the same questions during their role-play practice.

2.5 Overview IM-task 5: Program implementation plan

Implementation Mapping was applied within IM-step 5 and involves five specific tasks, iteratively applied to involve all adopters and implementers, implementation outcomes, determinants, and objectives.^[14] We applied the five specific Implementation Mapping tasks to bridge the gap between the development of effective programs and their actual implementation in the HIV care setting.

2.5.1 IM-task 5.1: Conduct an implementation needs assessment

The program adopters are HCPs within HIV care. Due to the strong involvement of the linkage group, the focus was on HIV nurses, with HIV physicians being indirectly involved. To bring the pilot training to national attention properly, monthly contact was made with the VCH-board, and three times with the NVHB-board. It was important that HCPs agreed to participate in the entire training program. Sometimes, participants would need to negotiate with their managers and colleagues to secure the time required for attending the training.

The linkage group was a highly active group that kept all relevant stakeholders (VCH, NVHB, and soaids) informed on a monthly basis through periodic mailings. Moreover, from the beginning, this group was in close contact with other HIV nurses, HIV physicians, HIV prevention programmers, sexual health experts, and PWH. The first author provided multiple lectures, to physicians about the results of the needs assessment and to nurses on nursing practice. The request for

more attention to sexual health training came from the linkage group itself, and members dedicated extra hours through their own hospitals, ensuring that conditions such as time and intrinsic motivation from the group itself would facilitate the future development of the intervention.

2.5.2 IM-task 5.2: Identify adoption and implementation outcomes, performance objectives, determinants, and change objectives

During discussions with the board of physicians (NVHB), we noticed that sexuality was not a priority topic. Therefore, we decided focusing primarily on nurses as future implementers, as described in the performance objectives. Members of the linkage group engaged in lectures and interactive discussions at three meetings with as many nurses as possible, aiming for them to recognize the value of the training and to encourage them to sign up. The program implementers were responsible for the content of the training, ensuring that the speakers' presentations aligned well with the level and knowledge of the nurses.

Additionally, the curriculum was tailored to the performance objectives of Step 1: "Nurses initiate sexual health conversations during routine HIV consultations, discuss and delve deeper into sexual health topics during routine HIV consultations, and apply effective communication techniques for sexual health conversations during routine HIV consultations". The determinants attitude, self-efficacy, skills, and social norms were incorporated into the training objectives (IM-Step 1). The linkage group focused specifically on attitude, particularly in the months leading up to the training. In all meetings, it was emphasized that the nurse's positive attitude towards sexuality is crucial for effectively discussing this topic in consultations. In addition, workshops and discussions were held at conferences targeting SHC in the Netherlands, emphasizing the importance of the performance objective "initiating sexual health counseling" as part of the professional roles of physicians and nurses.

2.5.3 IM-task 5.3: Select theoretical methods and design implementation strategies

To promote that nurse actually signed up for the training, we employed various methods: persuasive communication, modelling, and mobilization. Alongside addressing nurses' attitudes, we also focused on the fact that sexuality is not always discussed according to effective communication strategies. Through discussions and lectures, we made the target group realize the need for changing current behavior and engaging in conversations about the findings of the needs assessment and what this means for practice. Articles already published from our needs assessment were circulated among members of the VCH and the NVHB.

2.5.4 IM-task 5.4: Produce implementation protocols

Aside from much attention being given to promoting the training among stakeholders, the linkage group and planning group convened to discuss which documents would be best utilized prior to, during, and after the training. First, a video (shared via LinkedIn) was utilized, featuring a nurse in real practical setting addressing the challenges of discussing SHC. The aim of this video was to acknowledge the problem from a practical standpoint and encourage participation in the training. In addition to monthly updates sent via emails to all VCH members to raise awareness about the training, various materials were used on the day itself. Regarding knowledge, the theoretical models used by speakers in their presentations were printed and distributed onsite among participants in consultation with the speakers prior to the event.

Additionally, we incorporated case studies submitted by participants before the training. Speakers integrated these into their discussions. Also, during the first day of training, video footage from the observational study in the needs assessment in IM-step 1 was utilized. These videos were viewed (with permission) to discuss attitudes, self-efficacy, and skills. The goal was to engage in conversations about what is observed in practice and what that means after completing day 1 part two.

2.5.5 IM-task 5.5: Evaluate implementation outcomes

We did effectively reach our target audience $N = 34$. The application of various methods during the training, connected to implementation outcomes, determinants, and objectives, became clear for the participants. They also saw those as integral parts of this nursing training. After 1.5 days, they gained a clearer understanding of the three performance objectives and how those relate to their own practice.

What did not work well in this step was our decision to use experienced actors in role-playing scenarios with participants' own submitted case studies for the guided practice method: participants found it tense to practice with actors they don't know, especially with colleagues present.

2.6 Overview IM-Step 6: Pilot evaluation

The setup of this pilot training as an intervention was small-scale, making it impossible to conduct a RCT. We did a process evaluation of the intervention in combination with an evaluation of the effect, we assessed both the self-reported behaviors and their determinants in four online questionnaires (see supplementary) using pre- and post-pilot design.

This study was exempt from formal medical ethics review as stipulated in the Medical Research Involving Human Subjects Act of the Netherlands, as no patients were included and the study did not involve medical or behavioral interventions of patients.

The baseline questionnaire was administered via email two days before the training. Participants who had not completed the questionnaire were invited to complete it on the day before the training started. The second questionnaire (T1) was distributed before the second training day. Following the conclusion of the second day, the third questionnaire (T2) was sent with two-week reminder. Six weeks later, the fourth questionnaire (T3) was distributed, again with a two-week reminder.

The limited sample size precludes statistical comparison testing. We provide descriptive analysis of the outcomes (see Table 4). We kept the questionnaires as short as possible to reduce participant burden. At baseline, we did not include skills due to the focus of day 1 being on attitude and self-efficacy. Additionally, we chose not to include social norms at T3 assuming no change after T2. The process evaluation (T2) was assessed using a Likert scale (1 = poor, 5 = excellent).

In total, 37 participants followed day 1 of the training (16 online): 34 nurses, 2 physicians and 1 social worker; 20 nurses also participated on day 2. Participants were positive about all outcomes at baseline, then dipped after day 1, followed by an upward trajectory after day 2.

Table 4. Outcome evaluation of the pilot training at baseline, before training day 2 (T1), immediately after day 2 (T2), and six weeks after day 2 (T3)

Determinants	Items	Cronbach's alpha	Baseline, mean $\pm$ SD (N = 34)	T1, mean $\pm$ SD (N = 20)	T2, mean $\pm$ SD (N = 20)	T3, mean $\pm$ SD (N = 19)
Attitudes	4	0.83	5.26 $\pm$ 1.02	4.73 $\pm$ 1.42	4.94 $\pm$ 1.22	5.49 $\pm$ 0.79
Self-efficacy	6	0.74	5.00 $\pm$ 0.98	4.35 $\pm$ 1.44	4.51 $\pm$ 1.32	4.91 $\pm$ 0.75
Social norms	3	0.82	5.10 $\pm$ 0.94	4.96 $\pm$ 1.78	5.48 $\pm$ 1.71	–
Knowledge	1		4.30 $\pm$ 1.41	4.08 $\pm$ 1.41	4.50 $\pm$ 1.40	5.40 $\pm$ 1.19
Perceived skills	1		–	4.17 $\pm$ 1.55	4.30 $\pm$ 1.46	6.00 $\pm$ 0.80
Intention to initiate	6	0.72			5.89 $\pm$ 0.61	5.85 $\pm$ 0.59

The evaluation of the effect of the pilot training with 20 participants who took part in both days revealed a positive trend in the determinants of participants' attitudes, social norms, knowledge, and perceived skills. Additionally, the intention to initiate sexual health care seems high but does not appear to have changed.

The process evaluation (data not in Table 4) showed that participants were positive about the clinical relevance of the complete program ($M = 4.32$, $SD = .70$). The quality of the discussions was rated positively: 3.88 ($SD = .54$). Participants also indicated that enough time was spent on each topic: 4.08 ($SD = .41$). A large-scale evaluation should take place during the further development and implementation of this pilot training.

3. DISCUSSION

Effective training has the potential to enhance providers' ability to comfortably discuss sensitive sexual health issues.^[1,4,34] Our study provides significant insights into developing an intervention aimed at encouraging healthcare professionals (HCPs) to address sexual health during routine HIV consultations. By applying Intervention Mapping for design and Implementation Mapping, we aimed to assess whether promoting initiating conversations and sexual health counseling could enhance both the frequency and quality of counseling in these consultations. Significant involvement from nurses in the HIV field led to the development of an intervention tailored to their needs, which positively influenced participants' attitudes, social norms, knowledge, and perceived skills over time.

The finding that the majority of our participants were nurses aligns with previous research that has primarily examined nurses' attitudes, knowledge, experiences, and barriers to discussing sexual health.^[5,31,35] While nurses play a crucial role in educating patients about sexual health care,^[1] it is essential to recognize that both nurses and physicians should proactively engage with patients regarding their sexual concerns. Echoing the study by Johndottir,^[36] our focus extended beyond nurses to include a diverse group of healthcare professionals. Nevertheless, during the training, nurses predominated, with only nurses present on the second day. This underscores a potential gap in collaborative care, as both HIV physicians and nurses expressed responsibility for providing sexual health care.^[30] Our findings suggest that, while there is ambiguity regarding the division of responsibility, nurses, particularly those specializing in HIV care, are well-trained and positioned to address sexual health issues. Given their substantial involvement in all phases of the intervention model, it is imperative to prioritize nurses as the primary providers of nursing care, especially in the context

of sexual health.

Nevertheless, while there is substantial knowledge regarding the application of Intervention Mapping in developing tailored interventions,^[37,38] systematic training programs specifically designed for clinical nurses in the field of HIV remain scarce. Moreover, research evaluating the impact of these programs on nurses' knowledge, attitudes, and self-efficacy is limited, and existing initiatives often lack comprehensiveness.^[39] To address this gap, we developed a training program aimed at meeting these needs and assessed its effects on the aforementioned determinants. Although we integrated all steps of Intervention Mapping and aligned determinants with behavior change strategies, the training program we developed, which emerged after completing all stages—including matrices and performance objectives—did not achieve our primary goal of improving the frequency and quality of sexual health counseling. The intention to initiate sexual health care was high before the intervention,^[19] therefore this intervention has not translated into observable changes in intentions. We focused the evaluation of the training's on assessing the determinants that were the aim of the intervention. We changed these through various behavior change methods, which may have overshadowed the focus on the ultimate performance objectives. Moving forward with the development of this pilot training, further research is necessary to better define performance objectives, particularly objective assessment of behaviour. Emphasising those related to in-depth discussions about sexual health and the application of effective communication techniques. This will ultimately facilitate more productive conversations about sexuality, ensuring that patients receive comprehensive care.

To facilitate productive discussions on sexual health counseling during consultations, it is essential to employ appropriate behavior change methods in training that help to effectively influence behavior. While these behavioral change methods have been successfully implemented in various settings,^[39] some were less effective in our training. For instance, we utilized guided practice, an effective method for enhancing self-efficacy and skill development. We incorporated both video footage and real-life case studies, which, according to the linkage group, were well-suited for the HIV context. However, the use of video footage resulted in participants spending excessive time discussing the scenario's context rather than focusing on the primary goal of reinforcing sexual health discussions. This led to a negative atmosphere during the group viewing of the videos. In contrast, the incorporation of participants' own case studies, combined with small group discussions guided by a structured set of questions around sexuality, was positively received. This approach likely contributed to an improvement in their perceived skill.

Possibly guided practice was in this case not the best selected of the behaviour change methods. Still, it is important to focus on how to enhance the self-efficacy of HIV nurses in the ongoing development of the training program. Moreover, targeting self-efficacy alone may not lead to behavior change; there are other relevant determinants. Also, when applying change methods, it is crucial to ensure that the parameters for a method's effectiveness are met. According to the literature, methods of behaviour change must target the specific determinants that are selected, with practical, specific applications, and reflecting the parameters of the theory-based methods they embody. Stronger multidisciplinary collaboration is needed, involving experts such as behavioral scientists in the development of behavior change methods, who should work closely with healthcare professionals in the HIV field.

The intervention presented in this study has several notable strengths. First, our study significantly contributes to the literature on Intervention Mapping by thoroughly documenting the entire process and highlighting the unique challenges we encountered, which may be valuable for others applying this framework. Additionally, the project originated as a grassroots initiative among HIV nurses eager to enhance their practice, which ignited interest in developing a tailored intervention. This process involved collaboration with key stakeholders in the HIV field, including patient organizations, NVHB, VCH, and Soa AIDS Netherlands. A highly engaged linkage group of HIV nurses from across the country played a critical role in promoting the training at meetings and conferences, making participant recruitment relatively straightforward. However, we acknowledge the possibility of selection bias among the participating nurses. Lastly, the well-structured nature of HIV care in the Netherlands has fostered an effective network of professionals in this field. The COVID-19 pandemic necessitated a shift to a hybrid training format, which, despite presenting challenges, also demonstrated that the training could remain effective even when components needed to be adapted for remote delivery.

This study is not without limitations. The before and after design, having neither a control group nor randomization weaken the validity of the findings. However, the twenty HIV nurses who completed all four questionnaires represent 24% of all the HIV nurses in the Netherlands. Finally, another limitation of our study is that due to practical constraints, the questionnaire did not measure all the performance objectives. This may explain why we did not achieve our primary goal, as we focused too heavily on influencing the participants' determinants rather than also addressing intention and behavior, as outlined in the Theory of Planned Behavior (Ajzen).^[23] Nevertheless, these results should be viewed as an initial step in a pilot evaluation and can serve as a foundation for devel-

oping a comprehensive training program that incorporates all aspects of the TPB.

In conclusion although this evaluation as the final step of IM provides valuable insight into which determinants of HCPs working in the field of HIV can be influenced, it is desirable to further develop this intervention. We still do not have a complete understanding of how to influence HCP behavior in such a way that all three performance objectives of the training are achieved and sexual health counselling is fully discussed. A recommendation for further development of the intervention is to place more focus on the performance objective two and three, discussing sexual health in more depth, applying the appropriate communication techniques, and evaluating intentions and behavior. An example could be through observations, such as reviewing one's own recordings of consultations, watching oneself back, and receiving feedback. For the further development of the pilot training, it is essential to involve not only nurses but also to encourage more active participation from physicians. Although physicians are not the primary providers for discussing sexual health counseling, literature indicates that patients rarely initiate conversations about sexuality-related issues. A common explanation for this is that patients expect healthcare professionals, such as physicians, to address these topics if they consider them important.^[36] The role of physicians in sexual health counseling, as well as nurses highlighted in our needs assessment, is crucial during routine HIV consultations. Additionally, since effective communication requires collaboration between patients with HIV and healthcare professionals, it is recommended to enhance the involvement of patient associations in the development of this pilot training. When HCPs listen and communicate with patients, they are likely to develop a shared understanding with regard to sexual health that may improve future decision making and the quality of sexual care patients with HIV receive.

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AUTHORS CONTRIBUTIONS

Suzanne de Munnik: Writing – original draft, Methodology, Formal analysis, Conceptualization. John de Wit: Writing – review & editing, supervision. Chantal de Daas: Methodology, data curation, writing – review & editing. Sigrid Vervoort: validation, review & editing. Heidi Ammerlaan: Visualization.

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No additional data are available.

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REFERENCES

- [1] Fennell R, Grant B. Discussing sexuality in health care: a systematic review. *J Clin Nurs*. 2019; 28: 3065–76. PMID:31017326 <https://doi.org/10.1111/jocn.14900>
- [2] O'Connor SR, Connaghan J, Maguire R, et al. Healthcare professional perceived barriers and facilitators to discussing sexual well-being with patients after diagnosis of chronic illness: A mixed-methods evidence synthesis. *Patient Education and Counseling*. 2019; 102(5): 850–863. PMID:30578104 <https://doi.org/10.1016/j.pec.2018.12.015>
- [3] Åling M, Lindgren A, Löfall H, Okenwa Emegwa L. A scoping review to identify barriers and enabling factors for nurse–patient discussions on sexuality and sexual health. *Nurs Rep*. 2021; 11(2): 253–66. PMID:34968203 <https://doi.org/10.3390/nursrep11020025>
- [4] Dyer K, das Nair R. Why don't healthcare professionals talk about sex? A systematic review of recent qualitative studies conducted in the United Kingdom. *J Sex Med*. 2013; 10: 2658–70. PMID:22846467 <https://doi.org/10.1111/j.1743-6109.2012.02856.x>
- [5] Kelder I, Sneijder P, Klarenbeek A, et al. Communication practices in conversations about sexual health in medical healthcare settings: A systematic review. *Patient Education and Counseling*. 2022; 105(4): 858–868. PMID:34366226 <https://doi.org/10.1016/j.pec.2021.07.049>
- [6] World Health Organisation. Sexual and Reproductive Health Defining Sexual Health. 2006. Available from: https://www.who.int/reproductivehealth/topics/sexual_health/sh_definitions/en/
- [7] Van Lunsen RHW, Laan ETM. Sexual health. : A Life Course Approach In book: textbook of Obstet. Gynaecol. Bohn Stafleu van Loghum. 2019; 177–94. https://doi.org/10.1007/978-90-368-2131-5_10
- [8] De Tubino Scanavino M, Mori E, Nisida VV, et al. Sexual Dysfunctions Among People Living with HIV With Long-Term Treatment with Antiretroviral Therapy. *Sexual Medicine*. 2022; 10(5): 100542. PMID:35870269 <https://doi.org/10.1016/j.esxm.2022.100542>
- [9] Mrad H, Vinette B, Chouinard A, et al. Educational interventions to improve communication about sexual health between nurses and gynecologic oncology patients: A narrative review. *Canadian Oncology Nursing Journal*. 2022; 32(1): 30–37. PMID:35280073 <https://doi.org/10.5737/236880763213037>
- [10] Sung SC, Lin YC. Effectiveness of sexual healthcare education in nursing students' knowledge, attitude, and self-efficacy on sexual healthcare. *Nurse Education Today*. 2013; 33(5): 498–503. PMID:22789872 <https://doi.org/10.1016/j.nedt.2012.06.019>
- [11] De Vincentis S, Tartaro G, Rochira V, et al. HIV and sexual dysfunction in men. *J Clin Med*. 2021; 10(5): 1088. PMID:33807833 <https://doi.org/10.3390/jcm10051088>
- [12] de Bruin M, Viechtbauer W, Hoppers HJ, Schaalma HP, Kok G. Standard care quality determines treatment outcomes in control groups of HAART adherence intervention studies. *Health Psychol*. 2009; 28(6): 668–74. PMID:19916634 <https://doi.org/10.1037/a0015989>
- [13] Bartholomew Eldredge LK, Markham CM, Ruiter RAC, et al. Planning health promotion programs: an Intervention Mapping approach. 4th ed. San Francisco: Jossey Bass; 2016.
- [14] Fernandez ME, Ruiter RAC, Markham CM, et al. Intervention Mapping: perspective and examples. *Front Public Health*. 2019; 7: 209. PMID:31475126 <https://doi.org/10.3389/fpubh.2019.00209>
- [15] Kok G, Gottlieb NH, Peters GJY, et al. A taxonomy of behaviour change methods. *Health Psychol Rev*. 2016; 10(3): 297–312. PMID:26262912 <https://doi.org/10.1080/17437199.2015.1077155>
- [16] Mevissen FEF, Kok G, Watzels A, et al. Sexual prejudice reduction program. *Sex Res Soc Policy*. 2017; 15(4): 433–51. PMID:30416605 <https://doi.org/10.1007/s13178-017-0301-1>

- [17] Wolfers ME, van den Hoek C, Brug J, et al. Intervention Mapping for STI prevention. *BMC Public Health*. 2007; 7: 141.
- [18] De Munnik S, Daas CD, Ammerlaan H, et al. Let's talk about sex: a qualitative study exploring HIV nurses' experiences. *Int J Nurs Stud*. 2017a; 76: 55-61. PMID:28938103 <https://doi.org/10.1016/j.ijnurstu.2017.09.002>
- [19] De Munnik S, Vervoort SCJM, Ammerlaan HSM, et al. From intention to STI prevention. *J Adv Nurs*. 2017b; 73(12): 2953-61. PMID:28661015 <https://doi.org/10.1111/jan.13372>
- [20] De Munnik S, Vervoort SCJM, Kraan L, et al. Sexual health counselling by Dutch HIV healthcare providers. *AIDS Care*. 2021.
- [21] De Munnik S, Den Daas C, Ammerlaan HSM, et al. Communication practices between MSM with HIV and HIV specialist nurses. *J Assoc Nurses AIDS Care*. 2025; 36(4): 411-26. PMID:39964778 <https://doi.org/10.1097/JNC.0000000000000525>
- [22] Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006; 3(2): 77-101. <https://doi.org/10.1191/1478088706qp0630a>
- [23] Ajzen I. The theory of planned behavior. *Organ Behav Hum Decis Process*. 1991; 50: 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- [24] Ajzen I. Constructing a Theory of Planned Behaviour questionnaire. 2006; 1-12.
- [25] V&VN Verpleegkundig Consulenten HIV. Expertisegebied Verpleegkundig Consulenten HIV. 2nd ed. 2023.
- [26] Clinicalinfo.hiv.gov. Sexual health. 2024. Available from: <https://clinicalinfo.hiv.gov/en/overall-search?search=sexual+health>
- [27] European AIDS Clinical Society. Sexual and reproductive health. 2024. Available from: <https://eacs.sanfordguide.com>
- [28] Magnan MA, Reynolds K. Barriers to addressing patient sexuality. *Clin Nurse Spec*. 2006; 20(6): 285-92. PMID:17149019 <https://doi.org/10.1097/00002800-200611000-00009>
- [29] Rimmer RB, Rutter CE, Lessard CR, et al. Sexuality discussions in burn care. *J Burn Care Res*. 2010; 31(4): 579-89. PMID:20523230 <https://doi.org/10.1097/BCR.0b013e3181e4d66a>
- [30] Bauer M, Haesler E, Fetherstonhaugh D. Let's talk about sex: older people's views on the recognition of sexuality and sexual health in the healthcare setting. *Health Expect*. 2015; 19(6): 1237-50. PMID:26448550 <https://doi.org/10.1111/hex.12418>
- [31] Zhang X, Sherman L, Foster M. Sexual health discussions in the U.S.: a scoping review. *Patient Educ Couns*. 2020; 103(11): 2205-13. PMID:32601041 <https://doi.org/10.1016/j.pec.2020.06.019>
- [32] Aidsfonds. Richtlijn seksuele gezondheid bij mensen met hiv. 2008. Available from: <https://www.yumpu.com/nl/document/read/20242375/richtlijn-seksuele-gezondheid-bij-mensen-met-hiv-soa-aids>
- [33] Verrastro V, Saladino V, Petrucci F, et al. Sexuality education for health professionals. *Int J Environ Res Public Health*. 2020; 17(7): 2186. PMID:32218258 <https://doi.org/10.3390/ijerph17072186>
- [34] Ford K, das Nair R. Why don't healthcare professionals talk about sex? *J Sex Med*. 2013; 10(11): 2658-70. PMID:22846467 <https://doi.org/10.1111/j.1743-6109.2012.02856.x>
- [35] Klaeson K, Hovlin L, Guvå H, et al. Sexual health in primary care. *J Clin Nurs*. 2017; 26(11-12): 1545-54. PMID:27324221 <https://doi.org/10.1111/jocn.13454>
- [36] Jonsdottir II, Zoëga S, Saevarsdottir T, et al. Changes in attitudes and practices among oncology professionals. *Eur J Oncol Nurs*. 2016; 21: 24-30. PMID:26952675 <https://doi.org/10.1016/j.ejon.2015.12.004>
- [37] Bakhuis Roozeboom MC, Wiezer NM, Boot CRL, et al. Use of Intervention Mapping for occupational risk prevention and health promotion: a systematic review. *Int J Environ Res Public Health*. 2021; 18(4): 1775. PMID:33670376 <https://doi.org/10.3390/ijerph18041775>
- [38] Fassier J-B, Sarnin P, Rouat S, Péron J, et al. Interventions developed with the Intervention Mapping protocol in work disability prevention: a systematic review of the literature. *J Occup Rehabil*. 2019; 29(1): 11-24. PMID:29948471 <https://doi.org/10.1007/s10926-018-9776-8>
- [39] McAuliffe L, Bauer M, Fetherstonhaugh D, et al. Education of residential aged care staff regarding sexuality and sexual health in later life. *J Clin Nurs*. 2016; 25(5-6): 883-885. PMID:26822000 <https://doi.org/10.1111/jocn.13179>