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Perspectives of cancer survivors and other stakeholders regarding aspects relevant for the development of an integrated lifestyle intervention for cancer survivors: a qualitative study

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Abstract

Background Cancer survivors often live with the negative consequences of the disease and/or treatment, impacting various dimensions of the survivor's life. Lifestyle interventions improve health related behaviors and health-related quality of life in cancer survivors, with minimal safety concerns. However, current interventions often target limited lifestyle domains and specific cancer types, indicating opportunities for more comprehensive and broadly applicable approaches. Therefore, the aim of this study was to describe the perspectives of cancer survivors and other stakeholders on aspects relevant for the development of an integrated lifestyle intervention for cancer survivors.

Methods This qualitative study comprised ten focus groups, including four with cancer survivors ($n=16$) and six with stakeholders in cancer survivorship care ($n=31$). Reflexive thematic analysis was performed on the transcripts of the focus groups.

Results Five overarching themes were generated: (1) *All* cancer survivors should be offered an integrated lifestyle intervention, (2) Personalization within an integrated lifestyle intervention is essential due to various needs, (3) Communication and collaboration in cancer care needs to improve for optimal (lifestyle) care, (4) An integrated lifestyle intervention should be offered as soon as possible and provided continuously during treatment and aftercare, and (5) An integrated lifestyle intervention for cancer survivors should be organized nationally.

Conclusion These findings guide the development of an integrated lifestyle intervention for cancer survivors that balances accessibility with personalized counselling, all within a thriving healthcare system and financial sustainability. Furthermore, they provide a foundation for designing an integrated lifestyle intervention for cancer survivors embedded in standard cancer survivorship care, that aims to improve quality of life and health outcomes of cancer survivors. For future implementation, participants emphasized the importance of adequate funding, collaboration, and integration into existing care pathways to ensure sustainability and accessibility of an integrated lifestyle intervention.

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Keywords Cancer survivors · Healthcare professionals · Lifestyle · Integrated lifestyle intervention · Intervention development

Introduction

In 2022, approximately 20 million new cancer diagnoses were reported globally [1]. This number is expected to increase to 32.6 million in 2045 [2]. Among others, advances in early detection and treatment have resulted in higher cure rates and extended survival, contributing to the evolving view of cancer as a chronic disease [3, 4]. Consequently, the number of cancer survivors is growing rapidly [5, 6]. An individual is considered a cancer survivor from the moment of diagnosis onward, throughout the remainder of life [7]. Cancer survivors often live with the negative consequences of the disease and/or treatment, impacting various dimensions of the survivor's life [8]. Health-related quality of life (HRQoL) of cancer survivors can be negatively impacted for up to 26 years after diagnosis due to physical and psychosocial consequences [8]. Cancer survivors may experience symptoms such as fatigue, depression, and cognitive decline [8, 9]. Moreover, many cancer survivors have unfavorable health conditions requiring preventive measures, such as osteoporosis, hypertension, heart failure, atherosclerosis, diabetes, and secondary cancers [8, 9]. Given these adverse consequences and the rapidly growing population of cancer survivors, improving their HRQoL is essential, as these interrelated health-issues collectively influence overall quality of life.

Numerous systematic reviews and meta-analyses have demonstrated beneficial effects of healthy lifestyle behaviors on physical and mental well-being [10–13], as well as reducing cancer morbidity, mortality, and recurrence rates among cancer survivors [14–17]. Furthermore, healthy lifestyle behaviors can contribute to prevent cognitive decline [18, 19] and improve cardiovascular health, which is especially relevant given that cancer survivors often have a high risk of cardiovascular disease [20].

Lifestyle interventions, typically combining dietary advice and physical activity, have been shown to effectively improve health-related behaviors among cancer survivors, thereby enhancing HRQoL and improving domains such as emotional well-being, body image and fatigue, with limited to no safety concerns reported [21, 22]. However, opportunities remain to enhance lifestyle interventions for cancer survivors. Existing lifestyle interventions tend to focus on one or two lifestyle domains, most commonly nutrition, smoking, or physical activity. Other lifestyle factors such as sleep, stress management, and psychological counselling are integrated less often, and combining more than two lifestyle factors is even rarer [9, 23, 24]. When these components are combined, the approach is referred to as an integrated lifestyle intervention, defined as a coordinated healthcare program that incorporates multiple lifestyle domains and behavior change techniques to prevent or mitigate chronic health conditions [25]. Moreover, many interventions focus on specific cancer types, as each type presents unique symptoms and challenges alongside common concerns shared across cancers [24, 26, 27]. The consistently positive outcomes reported in these cancer-specific studies suggest that lifestyle programs may offer benefits to survivors regardless of cancer type. Moreover, lifestyle interventions also rarely incorporate the needs of individuals with limited health literacy, despite its prevalence in approximately one-third of Dutch adults and comparable rates among cancer survivors [28]. Health literacy encompasses not only knowledge but also the ability to access, understand, and apply health information in decision-making [29].

Although lifestyle interventions are beneficial for cancer survivors, challenges remain in both the delivery of lifestyle counselling and its implementation in routine survivorship care [30–33]. Cancer survivors often perceive lifestyle advice as overly generic, fragmented, and largely restricted to the start of treatment, with limited follow-up support [28, 34]. At the same time, fragmented care pathways may require survivors to actively seek lifestyle counselling themselves, while insufficient collaboration between healthcare professionals may hinder the provision of coordinated lifestyle support [28, 35]. Despite a strong willingness to refer patients to lifestyle

services [35, 36], clinicians frequently face time, knowledge, and skill constraints that limit the integration of lifestyle counselling into routine care [37–39]. Moreover, regardless of the inclusion of evidence-based behavior change techniques in some interventions for cancer survivors, insufficient attention has been given to promoting and evaluating sustained behavior change, with long-term follow-up data remaining scarce [6, 40–43].

To build onto the interview-based study of van Aken et al. (2025) [28] about cancer survivors' needs and experiences regarding lifestyle counselling, and to ultimately develop a comprehensive, inclusive, and sustainable integrated lifestyle intervention that aligns with existing care structures, it is essential to incorporate the perspectives of both cancer survivors and other stakeholders in cancer survivorship care regarding aspects relevant to such intervention development. The focus group format will enable participants to build on each other's perspectives, stimulate reflection, and generate new insights that may not have emerged during individual interviews. Therefore, the current qualitative study aimed to describe the perspectives of cancer survivors and other stakeholders in cancer survivorship care on aspects relevant for the development of an integrated lifestyle intervention for cancer survivors, using focus group interviews.

Methods

Study design

This study employed a generic qualitative research design, using focus groups comprising either cancer survivors or other stakeholders. This design allowed for a rich and detailed exploration of the participants' perspectives [44]. The analyses followed the 15-point checklist for conducting thematic analysis of Braun and Clarke [45], and results were reported following the Qualitative Design Reporting Standards of the American Psychological Association (JARS-Qual) [46].

Study population

The term *stakeholders* encompasses all individuals who have an interest in or are affected by the study topic. In this study, cancer survivors were classified as a separate group due to their unique perspectives and experiences. Therefore, the group we hereafter refer to as stakeholders consists of health care professionals and representatives of relevant organizations in cancer survivorship care.

Inclusion criteria for the focus groups with cancer survivors were: [1] adults (18 years and older) undergoing treatment or previously treated for cancer [2], living in the Netherlands, and [3] Dutch speaking. An exclusion criterion was being in the terminal stage, a stage in which treatment is unresponsive and death is imminent [47]. The inclusion criteria for the focus groups with stakeholders were: [1] adults (18 years and older), and [2] working as a healthcare professional in cancer survivorship care, e.g., oncologists, oncology nurses, physical therapists, and dietitians, lifestyle coaches, and representatives of healthcare organizations.

Recruitment took place from May to September 2024. Participants were recruited following purposive sampling. Recruitment of cancer survivors was conducted through social media, community centers, local cancer support centers, cancer care institutes, patient federation organizations, and referrals from GLINK-consortium (Gecombineerde Leefstijl Interventie Na diagnose Kanker translated as Combined Lifestyle Intervention After Cancer diagnosis) partners. A diverse population, e.g., in terms of gender, age, cancer type, and treatment history, was sought to ensure the inclusion of varied perspectives. Information was provided using research information flyers, written at B1 intermediate language level in order to be comprehensible and accessible to the majority of the adult population in the Netherlands [48]. Cancer survivors who expressed their interest were able to contact the researchers through email or phone to inquire further information and/or indicate their intention to participate. Subsequently, a phone call with researcher BvA was scheduled to introduce the study and assess in- and exclusion criteria. Cancer survivors participating in the focus groups were offered a gift voucher of 25 euros. Recruitment of

stakeholders was conducted through LinkedIn, personal networks of the researchers, and referrals of the GLINK-consortium partners. Researcher NF contacted participants via email to distribute the information letter, assess in- and exclusion criteria, and ensure diversity within the sample. The composition of focus groups was determined by professional background, grouping participants with similar roles to create a safe and open environment.

Interview guides and procedures

Focus groups with cancer survivors were conducted either online or in-person, based on the participant's preference. Each focus group consisted of three to seven participants. Two in-person sessions took place at a university and a community center and were audio-recorded. Two sessions were held online and were audio-recorded via Microsoft Teams. Focus groups with stakeholders were conducted online and recorded audio-visually via Microsoft Teams.

Each focus group was co-facilitated by two researchers (AM or BvA as moderator, and NF as facilitator). The moderator guided the discussion and posed questions, while the facilitator posed exploratory questions and managed practical tasks, such as recording, timekeeping, and taking first-impression notes. BvA moderated the focus groups with cancer survivors, and AM moderated those with stakeholders. All three researchers were trained in interview techniques. Each focus group had a predetermined maximum duration of one and a half hours. AM kept a logbook after each focus group with stakeholders, documenting the course of discussion, the overall atmosphere, adherence to the planned timeframe, and notable observations. Sample adequacy was guided by both breadth of perspectives [49] and information power [50]. Purposive sampling was used to ensure representation of a wide range of professions within the stakeholder population and to include cancer survivors with varying levels of health literacy. Focus group data collection continued until sufficient relevant and rich information had been obtained to address the research question.

The interview guide used for the focus groups with cancer survivors was structured according to the three first phases of Appreciative Inquiry (AI): (1) discover, (2) dream, and (3) design [51], to support exploration of participants' perspectives on intervention development using storytelling. Within each AI phase, Intervention Mapping was used to explore preferences for characteristics regarding content, form and structure of the integrated lifestyle intervention [52]. For an overview of the interview guide for cancer survivors and example questions, see Table 1. During the focus groups with cancer survivors, all participants were first asked to introduce themselves and optionally narrate their course of disease. A PowerPoint presentation with professionally designed illustrations was used during both online and in-person focus groups to provide supplementary visual facilitation about the questions asked and to guide the participants in their train of thought, see Additional file 1.

Table 1 Structure of interview guides, including example questions, used for cancer survivors and other stakeholders

Cancer survivors	Experiences with lifestyle counselling	Dreams about lifestyle counselling	Form of an integrated lifestyle intervention for cancer survivors
Example questions	*- What is your interpretation of lifestyle counselling* *- What are your experiences with lifestyle counselling during and after cancer treatment?*	*- What kind of counselling did, or do you need to live a happy and healthy life?* *- Without limits, what would the future's perfect lifestyle counselling look like?*	*- When should the integrated lifestyle intervention start?* *- Would you prefer group- or individual sessions?* *- When would you be motivated to participate in the intervention?*
Stakeholders	**Attitude towards an integrated lifestyle intervention**	**Development of an integrated lifestyle intervention for cancer survivors**	**Implementation of an integrated lifestyle intervention**
Example questions	*- What do you think the purpose of an integrated lifestyle intervention should be?* *- How do you think patients will react to an intervention like this?*	*- What should be the in- and exclusion criteria for this intervention?* *- Who should give the intervention? And where should it be given?*	*- How should cancer survivors be recruited to participate in an integrated lifestyle intervention?* *- What are important laws and regulations to consider for implementation?* *- Should the integrated lifestyle intervention be part of primary or secondary care?*

The interview guide used for the focus groups with stakeholders was different than the interview guide used for cancer survivors. The interview guide was based on Measurement Instrument for Determinants of Innovations (MIDI) [53], the Process-evaluation framework of Saunders et al. [54], and Diffusion of Innovations by Rogers [55]. MIDI was used by incorporating innovation-, user-, organization-, and socio-political context-related determinants to formulate relevant questions [53]. The Process-Evaluation framework of Saunders et al. [54] provided a structured approach to inquire into process components of health promotion programs. This framework was used to formulate questions about recruitment of participants for the intervention and context factors [54]. Diffusion of Innovations by Rogers [55] is a theory which explains how new ideas, practices and technologies spread within a society or organization. For this reason, it was used as a basis to formulate questions about successful dissemination and adoption of an integrated lifestyle intervention. For an overview of this interview guide and example questions, see Table 1. During the focus groups with stakeholders, all participants were asked to introduce themselves and describe their career trajectories. A PowerPoint presentation was used to initiate the discussion, outlining the purpose of the GLINK study and the conceptual design of the integrated lifestyle intervention, see Additional file 2. Participants were explicitly informed that the conceptual design reflected a preliminary idea only and that all elements remained open modification based on stakeholder input. This conceptual design included among others the use of a support team, targeting cancer survivors after treatment, excluding palliative patients and the concept of Positive Health. Positive Health conceptualizes health as the ability to adapt and to self-manage, in the face of social, mental and physical challenges of life [56]. In this perspective, health is no longer an ideal end goal, but a dynamic ability that can be present with and without disease and may therefore serve as a relevant guiding principle for behavior change interventions. Subsequently the discussion was guided by the stakeholder interview guide, which served as the framework for exploring relevant topics. Additionally, Google Jamboard was utilized to enhance the interactivity of the focus groups. For example, stakeholders were asked to rate the current aftercare for cancer survivors between 1 and 10 using Jamboard, to ensure that all participants could provide their first reaction. Member checking and re-interviews were not performed because this study aimed to explore perspectives across relevant stakeholder groups rather than verify individual accounts. Additionally, to minimize participant burden, no further data collection activities were undertaken.

Data-analysis

Audio- and audiovisual-recorded interviews were transcribed verbatim using Amberscript and incorporated with relevant non-verbal communication by researchers NF and BvA. Reflexive thematic analysis was conducted following the six steps described by Braun and Clarke [45, 57], applied iteratively and revisited as needed. Reflexive thematic analysis was well-suited to this study as it facilitates detailed exploration of participants subjective experiences and opinions, and also emphasizes the active role of the researcher in theme development, encouraging critical engagement with one's assumptions and interpretations [58]. NvdM read all the transcripts and listened to some audio(visual) recordings to familiarize with the data. Following familiarization, data-analysis was conducted exclusively on the transcripts to ensure consistency across data sources. Despite the use of separate interview guides for cancer survivors and other stakeholders, all focus groups explored aspects of the same research question. Therefore, data from both participant groups were integrated and analyzed as a single dataset. During coding, transcripts from cancer survivor and stakeholder focus groups were reviewed in an alternating and random order to facilitate continuous comparison across perspectives. While reading the transcripts, preliminary notes were taken and relevant sentences were highlighted (step (1) data familiarization). Qualitative data analysis software (ATLAS.ti) was used to support coding and the generation of themes and subthemes. Two focus groups (one comprising cancer survivors and the other comprising lifestyle coaches, selected to ensure sufficient data utility) were double coded by NvdM and AK independently. NvdM coded the remaining eight focus groups individually. All relevant data related to the aim of this study was coded using both latent and semantic coding, primarily using an inductive approach (step (2) generating codes). Existing codes and code descriptions were continuously reviewed and refined to reflect emerging insights from the data. Due to the data's richness, closely

related codes were consolidated to maintain a comprehensive overview. Thereafter, NvdM generated subthemes based on conceptual similarities and underlying patterns. These subthemes were then iteratively compared and reorganized. Through this process of comparing and refining subthemes, overarching themes were developed and defined as patterns of shared meaning, supported by a central organizing concept [57]. NvdM presented an overview of the initial codes and generated subthemes and themes to AM, NF, IS, and AK (step (3) organizing codes into themes and subthemes), to discuss and provide feedback on the categorization of codes into subthemes and themes. Themes were continuously refined through a reflexive review, ensuring they accurately represent the complexity of the dataset (step (4) reviewing potential themes). Themes and subthemes were defined and named by NvdM after another round of feedback of AM, IS, and AK (step (5) defining and naming themes). For writing the manuscript, NvdM translated the themes, quotations, and interview guides to English, and the translations were checked by an official translation center named Taalcentrum-VU. The manuscript was written by NvdM and checked by all other co-authors (step. 6 writing the report).

Trustworthiness

To ensure trustworthiness of the study, several strategies were employed throughout the research process. Credibility was enhanced by conducting multiple focus groups with diverse participants. Also, most questions were open-ended, allowing participants to respond freely in any direction. Reflexive thematic analysis was conducted iteratively, with NvdM engaging in continuous reflexivity to acknowledge and examine her own assumptions and influence on the interpretation of the data. Two focus groups were independently double coded by NvdM and AK. The independently coded data was discussed to explore additional perspectives; a process that enriched the depth and quality of the data analysis.

Research team and collaboration

The present study is a collaboration between the Vrije Universiteit Amsterdam and Christelijke Hogeschool Ede and is part of the overarching GLINK-project. The GLINK-project is among the first trials in the Netherlands aiming to develop an integrated lifestyle intervention for improving HRQoL of cancer survivors through lifestyle changes. The research team comprised all Dutch female researchers with a practical, academic, or combined background, aged between 25 and 55 years. The team included two junior researchers (NvdM and BvA), a research assistant (NF), a PhD candidate (AM), a postdoc researcher (AK), an assistant professor (MH), a general practitioner (GP) and associate professor (KvA), professor of applied sciences (WK), and a full professor (IS). The research team collectively brought expertise in prevention, health promotion, health psychology, oncology, primary care, supportive care, participant engagement, nursing, nutrition, and movement sciences, and almost all members had background in conducting qualitative research. The majority of the team had prior experience with cancer, either through professional background or through personal connections, such as family members. These experiences combined with their expertise contributed to strengthening both data collection and analysis.

Results

The study included 47 participants, comprising sixteen cancer survivors and 31 stakeholders. Among the sixteen cancer survivors who participated in the focus groups, five were also interviewed individually by Van Aken et al. (2025) [28]. Therefore, a prior professional relationship existed between the moderator (BvA) and these participants. No relationship existed with the remaining participants.

Of the 31 additional stakeholders recruited for the profession-specific focus groups, five were also cancer survivors, thereby representing both stakeholder and survivor perspectives. For more characteristics of cancer

survivors and stakeholders, see Table 2. Ten focus groups were conducted, of which four included cancer survivors (mean duration 82 ± 6 min, range 73–90) and six included stakeholders (mean duration 86 ± 3 min, range 81–90).

Five overarching themes were generated: (1) *All* cancer survivors should be offered an integrated lifestyle intervention, (2) Personalization within an integrated lifestyle intervention is essential due to various needs, (3) Communication and collaboration in cancer care needs to improve for optimal (lifestyle) care, (4) An integrated lifestyle intervention should be offered as soon as possible and provided continuously during treatment and aftercare, and (5) An integrated lifestyle intervention for cancer survivors should be organized nationally. For an overview of the themes and associated subthemes, see Table 3.

All cancer survivors should be offered an integrated lifestyle intervention

The focus groups provided an in-depth insight into experiences and perceptions regarding the inclusivity and accessibility of lifestyle counselling.

Both cancer survivors and stakeholders reported that lifestyle counselling is limited in standard cancer survivorship care and stated that such counselling should be easily accessible and inclusive for everyone after a cancer diagnosis *(subtheme 1a)*. However, the provision of lifestyle counselling often depends on the attending healthcare professional's time, personal interest, and expertise in lifestyle-related care. Cancer survivors perceived that physicians were often overworked and only focused on medical treatment, leaving little to no room for lifestyle

Table 2 Characteristics of cancer survivors and stakeholders

Cancer survivors (n=16)	
Gender	
Males	7
Females	9
Age range	41-86 years
Mean age (SD*)	62 (14) years
Type of cancer	
Breast	6
Esophagus	1
Jaw	1
Lymph-node	1
Lung	1
Prostate	4
Rectum	1
Testicle	1
Stakeholders (n=31)	
Years of experience in oncology	0-30
Mean years of experience in oncology (SD*)	8 (7.5)
Types of profession	
Hematology nurse	1
Lifestyle coach	7
Lobbyist for prevention	2
Occupational psychologist	1
Occupational therapist	1
Oncological dietitian	3
Oncological physiotherapist	3
Oncological surgeon	1
Oncology nurse	2
Oncology nurse specialist	3
Radiation oncologist	1
Representatives of organizations in cancer survivorship care	6

* SD = standard deviation

Table 3 Themes, subthemes and contributing stakeholder groups*

Theme	Subthemes	Cancer survivors	Oncology Healthcare providers	Allied health providers	Lifestyle coaches	System-level stakeholders
1. **All cancer survivors should be offered an integrated lifestyle intervention** 	a) Lifestyle counselling should be easily accessible and inclusive for everyone after a cancer diagnosis	√	√	√	√	√
	b) Participants should be intrinsically motivated to participate in an integrated lifestyle intervention	√	√	√	√	√
	c) Including patients with a palliative diagnosis in the integrated lifestyle intervention	√	√	√	√	√
	d) An integrated lifestyle intervention should be linguistically inclusive, ensuring that it is also available in languages other than Dutch		√	√		
	e) Involve relatives and close contacts in the integrated lifestyle intervention	√				√
	f) Accessibility should be ensured regarding practical matters	√		√	√	√
2. Personalization within an integrated lifestyle intervention is essential due to various needs 	a) Limited time in standard care constrains opportunities for personalized support	√	√		√	√
	b) Current lifestyle counselling is too general	√			√	√
	c) Diverse needs across target population	√	√	√		
	d) Every individual has unique challenges and defining experiences	√	√	√	√	
	e) A wide range of optional topics should be included in the intervention	√	√	√	√	√
	f) Self-management is beneficial and essential for cancer survivors	√	√	√	√	√
	g) Emphasis on individual goals and needs, for instance in individual sessions	√	√	√	√	√
3. Communication and collaboration in cancer care needs to improve for optimal (lifestyle) care 	a) Streamlined communication between disciplines optimizes healthcare delivery		√	√	√	
	b) Communication via an app can facilitate interaction among healthcare professionals	√	√			
	c) Collaboration between primary and secondary care should improve	√	√	√		√
	d) Collaboration between formal and informal care enhances comprehensive patient counselling	√				√
	e) Combining the integrated lifestyle intervention for cancer survivors with existing initiatives	√	√	√		√
	f) Involve different types of healthcare professionals in the intervention and keep them informed	√	√	√	√	√
4. An integrated lifestyle intervention should be offered as soon as possible and provided continuously during treatment and aftercare 	a) Start as soon as possible	√	√	√	√	√
	b) An integrated lifestyle intervention for cancer survivors should also be used as a preventive tool to prevent complaints and recurrence			√	√	√
	c) Repeatedly offering the integrated lifestyle intervention ensures that patients can indicate when they are ready for lifestyle guidance	√	√	√		
	d) Consistent follow-up facilitates accessible and timely reporting of symptoms and complaints because many symptoms and complaints manifest in different stages of (or after) the disease	√		√		√
5. An integrated lifestyle intervention for cancer survivors should be organized nationally 	a) Cancer survivors are currently required to independently seek out or actively request for lifestyle counselling	√		√	√	
	b) Numerous valuable standalone initiatives exist, but a cohesive network, accessibility, and continuity are lacking	√		√		√
	c) An integrated lifestyle intervention for cancer survivors should be covered by basic health insurance	√		√	√	√

* In this table, stakeholders are grouped into 5 categories based on their role in survivorship care: Cancer survivors, Oncology Healthcare providers (including hematology nurse, oncology nurse, oncology nurse specialist, oncological surgeon and radiation oncologist), Allied health providers (including occupational psychologist, occupational therapist, oncological dietitian and oncological physiotherapist) Lifestyle coaches and System- level stakeholders (including lobbyist for prevention and representatives of organizations in cancer)survivorship

counselling. Additionally, lifestyle care varied based on institutional factors, such as the specific hospital where treatment was administered, geographic region within the Netherlands, the specific cancer type, and individual patient characteristics, such as health literacy. This insight led to the recognition broadly shared by both cancer survivors and stakeholders on the importance of integrating lifestyle counselling into standard cancer survivorship care, ensuring that all individuals are systematically offered such counselling. An oncology nurse specialist stated: "*Ideally, you would like this [lifestyle counselling] to be accessible to everyone, not just the loudest voice, the person who happens to come across it, or the person who is lucky to get a referral. It should be a standard component [of care/treatment], and I believe there is still much to improve in this area, in the Netherlands.*" *(S4, FG 1 stakeholders).*

Both cancer survivors and stakeholders shared the opinion that an integrated lifestyle intervention for cancer survivors is needed and should be accessible to all cancer survivors, regardless of cancer type, background, or disease stage. Especially because it is expected that every cancer survivor could benefit from an integrated lifestyle intervention, as lifestyle encompasses a wide range of topics in which improvements can be made, which in turn can positively impact overall health and quality of life. One lifestyle coach emphasized the importance of maintaining broad inclusion criteria for an integrated lifestyle intervention: "*I would find it very unfortunate if the conditions and frameworks become so strict that many individuals are going to be left out. This is often the case with projects initiated in the healthcare sector and funded by insurance money.*" *(S4, FG 4 stakeholders).*

Some stakeholders suggested exclusion criteria for an integrated lifestyle intervention for cancer survivors, such as being in the terminal stage of cancer, having a psychiatric diagnosis, or possessing limited health literacy. The exclusion criterium that many participants mentioned was lack of personal motivation, as an integrated lifestyle intervention focuses on behavioral change *(subtheme 1b)*. Mainly healthcare professionals who were familiar with facilitating integrated lifestyle interventions, suggested that willingness and readiness to participate should guide inclusion rather than relying solely on clinical criteria. However, mentioned was that motivation could be improved during the integrated lifestyle intervention by educating people about the benefits an integrated lifestyle intervention can offer.

A strong call was expressed to include individuals in palliative care within the scope of the integrated lifestyle intervention *(subtheme 1c).* Both cancer survivors and stakeholders argued that lifestyle interventions can still offer meaningful benefits for quality of life, symptom management, and emotional well-being, even (or especially) when curative treatment is no longer the goal. Moreover, survival among palliative cancer survivors has been progressively improving over time, and for this reason cancer is increasingly regarded as a chronic disease. One representative of an organization in cancer survivorship care noted: "*...you can live for a very long time in the palliative phase, and that's when lifestyle is especially important. This includes finding purpose, exercise, and trying to maintain the quality of life as good and comfortable as possible. That's when these interventions really matter.*" *(S5, FG 2 stakeholders).*

Only among healthcare professionals was linguistical inclusivity identified as an important factor, ensuring that it is also available in languages other than Dutch *(subtheme 1d)*. They noted that non-native speakers often face communication barriers in healthcare settings, leaving them with poorer health literacy. A radiation oncologist suggested: "*I might consider including a group of people who speak other languages [than Dutch]. Perhaps as a separate group, for people with similar cultural backgrounds so that they can better understand and counsel each other. I think that's actually the group that could benefit the most.*" *(S2, FG 2 stakeholders).*

In addition to focusing solely on the cancer survivor, both cancer survivors and stakeholders emphasized the value of involving family members and close contacts in the intervention *(subtheme 1e)*. They noted that cancer survivorship often affects not only the individual but also their immediate social environment. Including relatives could enhance emotional support, improve adherence, and foster a shared understanding of healthy lifestyle changes. As one lobbyist for prevention explained: "*It's very important to also consider the environment and the system [of the environment] around the person, because it's very difficult to change an individual's behavior when they are in a setting that doesn't support health.*" *(S4, FG 2 stakeholders).*

Accessibility should also be ensured in relation to where and how the intervention is delivered *(subtheme 1f)*. Different formats for delivering the intervention sessions were proposed by both cancer survivors and stakeholders. In-person sessions were valued for their potential to foster interpersonal connection and trust. However, online sessions were considered essential, given that cancer survivors can be too sick or fatigued to travel. Additionally, unforeseen circumstances are common in this target group, making it desirable for sessions to be available for later online viewing. A hybrid model, combining both in-person and online formats, was therefore seen as a promising solution to accommodate varying needs and preferences. Additionally, healthcare professionals emphasized the importance of providing a clear and user-friendly manual regarding online sessions for older cancer survivors, or alternatively, offering individual counselling. For the in-person sessions, there was a strong consensus among cancer survivors regarding the preferred location of the intervention: it should be easily accessible, located nearby and, most important, not situated within a hospital. Both cancer survivors and stakeholders emphasized that cancer survivors already spend a considerable amount of time in hospital settings and cancer survivors expressed a clear preference to avoid returning there for additional interventions. Moreover, following the completion of medical treatment, many cancer survivors wish to move beyond the patient identity and to be seen and treated as individuals rather than patients. As phrased by a cancer survivor: "*In a way we are patients, but at the same time, we're not.*" *(S7, FG4 cancer survivors).*

Personalization within an integrated lifestyle intervention is essential due to various needs

Since an integrated lifestyle intervention designed for all cancer survivors will accommodate a highly diverse population, consensus emerged that personalization is essential to meet individual needs.

Limited time available in standard care, which was already mentioned in the previous theme, frequently led to absent lifestyle counselling and personalized support *(subtheme 2a)*. One cancer survivor described this as follow: *"I've made the distinction for myself: the doctors are fighting the cancer, but it is me who is responsible for supporting my lifestyle and body. The doctors really have nothing useful to say about that." (S2, FG 2 cancer survivors).* However, on the occasions when lifestyle counselling was given, it was often too general and not adequately tailored *(subtheme 2b)*. Cancer survivors remember from experience that the advice provided generally lacked relevance to their specific situations, making it difficult to adhere to the advice. Both cancer survivors and stakeholders emphasized that generic approaches fail to address the complexity and diversity in needs between different populations depending on factors such as age, type of cancer, treatment history, comorbidities, and social context *(subtheme 2c)*. One oncological dietitian noted: *"But there's quite a difference between having breast cancer or having esophageal cancer. These diseases result in very different patient journeys." (S1, FG6 stakeholders).* Also, the absence of structured mental health support was perceived as an important gap in standard cancer survivorship care. Many cancer survivors reported that psychological support was insufficiently offered, despite experiencing the period of treatment and after care as emotionally intense and demanding.

Both cancer survivors and stakeholders emphasized the diversity of individual needs and experiences *(subtheme 2d)*. They stressed that an integrated lifestyle intervention for cancer survivors should be centered around personal goals and individual challenges. A wide range of relevant topics, on a more holistic level, were identified as essential for inclusion in the intervention: meaning and purpose, work, nutrition, physical activity, sleep, social relationships, relaxation, energy management, mental well-being, grief and loss, late effects, sexuality, finances, and substance use *(subtheme 2e)*. It was recommended to offer all topics in the intervention, allowing individuals to autonomously select those most pertinent to their personal circumstances. One cancer survivor explained: *"What I find important is to keep talking with people. It is not so much about following a standard care protocol, but more about trying to understand each individual's needs and to act accordingly." (S3, FG 1 cancer survivors).* Within customized interventions, self-management was widely regarded as a cornerstone of sustainable lifestyle change. Cancer survivors valued tools and strategies that empowered them to take control of their own life and health; a need that was also recognized by this lifestyle coach based on her professional experience: *"Feeling heard is important, but equally important is to receive practical guidance on how to manage issues like fatigue*

and fear of recurrence, *on coping strategies*, *and how to deal with grief. Maybe what's missing is just looking at what you can do yourself" (S2 FG 4 stakeholders).* Self-management is also essential as a cancer diagnosis was often described as a life-altering experience that requires individuals to reconstruct their identity and way of living *(subtheme 2f)*. Cancer survivors shared that life post-diagnosis involves navigating physical limitations, emotional shifts, and existential questions. One cancer survivor reflected: *"...But also that you become aware that you have to determine what the 2.0 version [of yourself] is going to look like. That it is indeed a new version and that you will not return to who you were but become who you want to be." (S2 FG 2 cancer survivors).*

To tailor the intervention to personal needs and goals, individual sessions with a relevant professional were strongly considered essential *(subtheme 2 g)*. Positive Health, a concept that views health not as the absence of disease but as the ability of individuals to adapt and self-manage [56], was regarded as a valuable concept for tailoring a lifestyle intervention to the individual's personal needs and context. Cancer survivors indicated that certain topics would be more appropriately addressed in individual sessions, particularly those of a private nature, like mental wellbeing and sexuality. They also referred to subjects that exhibit considerable interindividual variability such as one's social environment. At the same time, group sessions were seen as valuable, offering opportunities to learn from fellow cancer survivors, feeling heard and understood, and gain new perspectives on one's symptoms. Group sessions were described as motivating and conductive to build trust, serve as role models for each other, and create enjoyment among the group. However, some concerns were raised by healthcare professionals regarding group sessions. These concerns included the risk of reinforcing a victim mentality, reluctance among some participants to share openly, and distinct variation in health literacy levels, which could pose challenges for facilitators in providing adequate counselling to all participants.

Additional overarching goals, beside self-management, identified as relevant for all participants included quality of life improvement, developing a positive outlook on life, enhancing physical and mental well-being, gaining access to accurate information, and supporting sustainable behavior change.

Communication and collaboration in cancer care needs to improve for optimal (lifestyle) care

To embed the previously mentioned themes of inclusivity and personalization and to enhance patient care, both cancer survivors and stakeholders consistently emphasized the importance of more integrated and transparent communication and collaboration between healthcare professionals.

Both cancer survivors and stakeholders highlighted that fragmented communication between healthcare disciplines often leads to inefficiencies and suboptimal patient outcomes. Cancer survivors reported that they were often required to repeatedly recount their, often impactful, disease-journey and that modifications in treatment were not always communicated effectively across various healthcare professionals. For this reason, a recurring sentiment was that structured communication pathways, particularly during care transitions, are essential for ensuring continuity and clarity in treatment plans *(subtheme 3a).* Multidisciplinary meetings and shared digital platforms were suggested as promising strategies to enhance communication and coordination among care providers. Some cancer survivors and a radiation oncologist referred to positive experiences with existing mobile applications, highlighting their potential to monitor symptoms and facilitate direct, accessible communication with healthcare teams *(subtheme 3b)*.

Apart from better communication, stakeholders also mentioned the need to strengthen collaboration between healthcare professionals, particularly between primary care providers and specialists in secondary care *(subtheme 3c)*. Inconsistent information exchange and poorly defined roles were frequently cited as barriers to coordinating care. Stakeholders expressed frustration over the persistent ambiguity surrounding the division of responsibilities between care levels. According to one lifestyle coach, this lack of clarity can also generate tension between professionals: *"I notice across the country that this [the difficulty of referrals] is a point of tension. Who will let go of responsibilities, and where do patients go then for help? That dividing line is far from clear, and it is an issue. As a result, you see differences in the likelihood of getting a referral." (S1, FG 4 stakeholders).*

In addition, more collaboration between formal and informal care was suggested by cancer survivors, a lobbyist for prevention and representatives of organizations in cancer survivorship care *(subtheme 3d)*. The integration of informal caregivers, such as family members and community volunteers, into formal care processes was seen as important for holistic patient counselling, aligning with one of the first subthemes *(1e*, *Involve relatives and close contacts in the integrated lifestyle intervention)*. In the current care system, the contributions of informal caregivers were described as frequently overlooked due to lack of time and communication channels in health care, and limited awareness of the added value of informal care within the formal healthcare team.

For the development of an integrated lifestyle intervention for cancer survivors, both cancer survivors and stakeholders expressed the importance of aligning the integrated lifestyle intervention with existing healthcare initiatives *(subtheme 3e)*. Rather than introducing an entirely new program or intervention, they advocated for building upon and connecting with current regional and institutional programs, in this way avoiding duplicated efforts. Cancer survivors often described existing initiatives as valuable, though marked by considerable variation in structure and implementation. One cancer survivor articulated this as: "*Yes*, *I also think it is about looking for ways to collaborate with existing initiatives and exploring whether you can implement them nationwide. It's a challenge*, *but I think it's very worthwhile*, *because there are so many initiatives and they're all organized differently in each region and hospital. So yes*, *I would say: look for ways to connect and collaborate and also explore how you can embed things financially." (S3*, *FG 2 cancer survivors)*. Besides, integration was not only seen as a way to enhance efficiency and sustainability, but also to foster broader stakeholder engagement.

Perspectives on collaboration between healthcare professionals within the integrated lifestyle intervention and the composition of the intervention team varied considerably *(subtheme 3f)*. Healthcare professionals emphasized the importance of their own profession as key part of the team. Opinions on the inclusion of a lifestyle coach to deliver the intervention were mixed. Some professionals expressed concerns, citing the lack of medical training and the unregulated nature of the profession as reasons against their involvement. Conversely, others viewed the cooperation of a lifestyle coach positively, highlighting their expertise in behavior change and their potential to serve as a consistent and coordinating team member. A commonly suggested approach involved a team comprising both a lifestyle coach and another healthcare professional, such as a dietitian, oncology nurse, medical specialist, psychologist, or psychotherapist. Another proposed approach was to have various professionals lead individual sessions based on their area of expertise within the integrated lifestyle intervention. However, a noted drawback was the absence of a consistent point of contact.

GPs were seen as important actors in the success of an integrated lifestyle intervention for cancer survivors, as they often serve as the first point of contact for patients and possess a comprehensive understanding of the patient's medical and personal history. However, some cancer survivors stated that they had not seen or heard from their general practitioner after they were referred to the hospital and diagnosed with cancer. One oncology nurse suggested that, ideally, GPs should promote awareness of the importance of healthy lifestyle among all patients. This would contribute to the immediate initiation of and motivation for lifestyle interventions in the event of a cancer diagnosis, leading to the following theme.

An integrated lifestyle intervention should be offered as soon as possible and provided continuously during treatment and aftercare

Both cancer survivors and stakeholders emphasized that early and sustained access to lifestyle counselling could help prevent or mitigate a wide range of physical and psychological complaints among cancer survivors. Throughout the focus groups, the dominant opinion about the starting point of the intervention was to start from the diagnosis onwards and offer continuously during and after treatment.

Both cancer survivors and stakeholders consistently advocated for initiating the integrated lifestyle intervention as soon as possible, ideally immediately after cancer diagnosis *(subtheme 4a)*. They stated that early intervention could help patients feel more in control and better equipped to manage the challenges of both treatment and recovery. One oncology nurse noted: *"My preference would be to start as early as possible*, *or at least*

assess someone's lifestyle and determine whether they would benefit. Everyone benefits in some way." (S2, FG5 stakeholders). Delaying lifestyle counselling was seen as a missed opportunity to build resilience. Referral to an integrated lifestyle intervention should ideally occur immediately following a cancer diagnosis within the hospital setting. Alternatively, referrals should be easily accessible through a broad range of healthcare professionals, including GPs.

Stakeholders suggested that by starting the integrated lifestyle intervention as soon as possible, the intervention could also serve as a preventive tool rather than solely as a response to existing problems *(subtheme 4b)*. Early lifestyle counselling may reduce the likelihood or severity of common treatment-related side effects and long-term complications. One representative mentioned: *"It is really about preventing symptoms. Right now, the focus is still very much on curing and recovery, and cancer is only considered chronic after surgery. But that is just not accurate. You should intervene much earlier in this trajectory. I would argue that the objective of the intervention should be prevention. The importance of prevention cannot be overstated."* *(S3, FG 1 stakeholders).*

Cancer survivors emphasized that readiness to engage with lifestyle changes varies widely among individuals and over time *(subtheme 4c)*. Patients will often be in a state of survival after diagnosis and during treatment, leaving them with no room to work on their lifestyle. Both cancer survivors and stakeholders recommended that integrated lifestyle interventions should be offered repeatedly at different stages of the care process, allowing patients to opt in when they feel mentally and physically ready.

In addition to participating in an integrated lifestyle intervention as early as possible and it being repeatedly offered, participants emphasized the importance of maintaining the integrated lifestyle intervention over a longer period of time to support sustained engagement and timely identification of emerging issues *(subtheme 4d)*. As behavior change requires time, a minimum duration of six months for an integrated lifestyle intervention was recommended. Some healthcare professionals proposed starting with a short intensive phase, followed by a prolonged, potentially indefinite, maintenance phase. Regular check-ins were seen as a way to normalize conversations about lifestyle and well-being, thereby lowering the threshold for patients to report symptoms and ask for counselling. Older cancer survivors, in particular, reported experiencing difficulty in asking for help. One participant reported this as follows: *"This is particularly true for the older generation, who tend to be modest and are often reluctant to speak up [and ask for help]." (S6, FG 4 cancer survivors).* Moreover, consistent follow-up was considered essential given that many symptoms and side effects often emerge at different stages of the cancer journey, including long after completion of treatment.

To ensure that lifestyle counselling is offered as early, as frequently and as continuously as possible to all cancer survivors, a nationally coordinated approach is needed, leading to the final theme.

An integrated lifestyle intervention for cancer survivors should be organized nationally

Due to the absence of structured lifestyle counselling within standard cancer survivorship care, cancer survivors were often required to search for or request such counselling independently *(subtheme 5a)*. The lack of integrated counselling contributed to feelings of being overwhelmed, as cancer survivors navigated the complexities of (post-)treatment lifestyle counselling without sufficient professional support. From the perspective of both cancer survivors and health care professionals, this individualized responsibility was perceived as burdensome. One cancer survivor mentioned: *"Especially in the beginning, when I was in so much pain, I would have appreciated counselling from an exercise program, occupational therapy, or a rehabilitation program. And I would have liked some assistance when I went back to work. Then I would not have had to battle alone, as much as I did." (S1, FG1 cancer survivors).*

While existing lifestyle initiatives were reported as valuable, both cancer survivors and stakeholders indicated that a cohesive network, coordination, and continuity within is missing *(subtheme 5b)*. Many existing initiatives are short-lived, often due to insufficient funding or limited institutional attention. This instability is a burden for both cancer survivors and stakeholders, as lifestyle counselling is typically required over extended periods to be valuable. The lack of structural accessibility is further compounded by the fact that they are not publicly

subsidized. As a result, access is often limited to individuals who are both motivated and financially able to seek out and pay for these services independently. One representative reflected: *"What we often hear from patients is that they won't consult a lifestyle coach if they have to pay for it themselves." (S3, FG 1stakeholders).*

For this reason, in all focus groups the need was expressed for an integrated lifestyle intervention to be covered by health insurance *(subtheme 5c)*. To achieve this, it was emphasized that cost-effectiveness of an integrated lifestyle intervention for cancer survivors must be demonstrated, requiring the use of objective outcome measures. A lifestyle coach mentioned: *"It would be very unfortunate if a brilliant integrated lifestyle intervention that actually may lead to improvements in areas such as vitality, is not implemented simply because cost-effectiveness has not been assessed." (S2, FG 4 stakeholders).* Furthermore, securing reimbursement for interventions delivered after the completion of standard oncological treatment was perceived as particularly challenging, as cancer survivors are no longer classified as "ill", and preventative as well as aftercare services typically receive limited financial support from health insurance providers. Additionally, a fully individualized intervention was considered economically unfeasible by some participants. To enhance affordability, the introduction of a minimum age requirement and the delivery of the intervention in group settings were proposed.

Overall, cancer survivors and stakeholders strongly emphasized the need for a nationally organized and proactively provided integrated lifestyle intervention. In this way, every individual diagnosed with cancer will have the opportunity to participate in an integrated lifestyle intervention, connecting back to the first theme.

Discussion

The aim of this study was to gain insight into the perspectives of cancer survivors and other stakeholders involved in cancer survivorship care regarding aspects of the development of an integrated lifestyle intervention for cancer survivors. Cancer survivors and stakeholders highlighted the need of balancing broad access with individualized support, within a well-functioning healthcare system that features strong communication, collaboration, and financial sustainability, ideally coordinated and subsidized at the national level. Preferences were for an in-person format with the option to participate online if needed. Various topics within the integrated lifestyle intervention were suggested. For future implementation, participants emphasized the importance of adequate funding, collaboration, and integration into existing care pathways to ensure sustainability and accessibility of the integrated lifestyle intervention.

Participants emphasized that an integrated lifestyle intervention should be accessible to all cancer survivors, regardless of diagnosis, prognosis, or background, because they believed that every cancer survivor could benefit from an integrated lifestyle intervention. However, broad access to support does not necessarily imply that all survivors should participate in the same intervention. Rather, eligibility for specific intervention components should be determined through individual assessment of safety, risk factors, support needs, intervention goals and referral requirements. In line with previous work by van Aken et al. (2025) [28], lifestyle counselling and information provision could be incorporated more routinely into standard survivorship care, ensuring that all survivors have access to support while allowing more intensive intervention components to be tailored to individual needs.

Although some participants suggested that low motivation, psychiatric comorbidities, limited health literacy, or advanced disease might affect participation, these views were not universally shared. Instead, our interpretation of the data supports a broad and inclusive approach in which participation is facilitated through personalized adaptations, accessible materials, decision support, and, where appropriate, collaboration with mental health or other specialized services.

The need for personalization within the integrated lifestyle intervention aligns with the findings of van Aken et al. (2025) [28], studies focusing on specific survivor groups [59–61] and studies on experiences with lifestyle interventions [62–64]. While van Aken et al. (2025) [27] focused exclusively on cancer survivors, this study explored perspectives from both survivors and stakeholders, further underscoring the importance of personalization. This need for personalization was voiced most strongly by cancer survivors, but stakeholders also emphasized that the

diversity in experiences, preferences, and health trajectories among cancer survivors calls for a flexible, personalized approach. A one-size-fits-all approach risks overlooking meaningful differences in motivation, capacity and counselling needs. Implementing personalized interventions inevitably comes with challenges, as there are limits to how the intervention can be personalized while remaining financially and practically feasible.

Another key insight was the recommendation to offer an integrated lifestyle intervention for cancer survivors from the moment of diagnosis, with repeated opportunities for engagement throughout the cancer trajectory and aftercare, which was in line with two qualitative studies about the right moment to promote lifestyle changes among cancer survivors [65, 66]. While those previous studies were conducted with healthcare professionals [65] and postmenopausal breast cancer survivors [66], our study demonstrated that this recommendation was endorsed by cancer survivors across different cancer types, as well as stakeholders, e.g., healthcare professionals, managers, and researchers. Given the growing evidence supporting prehabilitation and the increasing recognition of its importance within standard cancer survivorship care [67], prehabilitation may serve as a starting point and a strong foundation for the integrated lifestyle intervention. Moreover, the integrated lifestyle intervention can extend lifestyle counselling beyond the prehabilitation phase, ensuring continuity of counselling once prehabilitation ends. Besides, previous research found that timely detection of needs throughout the different stages of the cancer care trajectory is crucial, as clinical needs of cancer survivors change as they move through the cancer continuum [68]. This ongoing approach contrasts with integrated lifestyle interventions for overweight and obesity, which typically span 24 months in The Netherlands [69]. By extending the duration and availability of counselling, this proactive and longitudinal approach may better empower cancer survivors to seek help when needed, even years after treatment, potentially preventing issues from escalating over time. However, a potential drawback of this approach is its higher cost. On the other hand, if follow-up sessions result in the maintenance of a healthy lifestyle, it increases the intervention's effectiveness and may potentially be cost-effective.

This study also highlighted that lifestyle counselling should not be left to individuals' own initiative but must be proactively offered and nationally coordinated. The currently available lifestyle counselling for cancer survivors is often perceived as fragmented and insufficiently accessible, placing an undue burden on cancer survivors [28, 35]. This perceived fragmented approach and inaccessible healthcare system may exacerbate health disparities, particularly among individuals with limited health literacy. These individuals are more likely to be unaware of the availability and benefits of lifestyle counselling [70], or may lack the confidence or ability to request it, as previous research showed that limited health literacy is associated with higher information needs and less information seeking behavior [71].

Stakeholder perspectives further revealed systemic challenges regarding the implementation of the integrated lifestyle intervention including time constraints, healthcare communication, and interprofessional collaboration. One of the major findings of a recent integrative review was that stakeholders other than cancer survivors often shared the barriers of poorly defined roles in lifestyle care and accompanied referrals [23], which is in line with our results. In our study, healthcare professionals frequently emphasized the central role of their own profession, e.g., dietitian, physical therapist, within an integrated lifestyle intervention for cancer survivors, reflecting not only different priorities and interests, but also diverse motivations to participate in this study. These motives might be influenced by the healthcare professionals' role within the healthcare system and their profession-specific interests. A commonly proposed solution within the integrated lifestyle intervention was a collaborative model involving a lifestyle coach alongside a healthcare professional, forming an interprofessional team complementing each other's' expertise and skills.

Strengths and limitations

A key strength of this study was the inclusion of both cancer survivors and various other stakeholders, which provided valuable insights from multiple perspectives. An additional layer of complexity in interpreting the responses came from participants who held dual roles, as some stakeholders had previously had cancer and were therefore also cancer survivors. While these dual perspectives enriched the findings by offering both experiential and

clinical insights, they also complicated the distinction between personal and professional perspectives. Another strength was the use of focus groups, because the interaction between participants fostered a lively discussion and exchange of ideas, allowing them to build on or challenge each other's perspectives, which led to deeper insights.

A potential limitation, common to many lifestyle studies, is selection bias. Our results may not fully reflect the perspectives of individuals who are less willing to adopt lifestyle changes, as individuals who chose to participate in this study were often already interested in lifestyle-related care. For this reason, the overall willingness to engage in an integrated lifestyle intervention may be lower in the broader population and among less health-conscious cancer survivors. Additionally, stakeholders were presented with a preliminary conceptual design of the integrated lifestyle intervention prior to the discussion. Although this design was explicitly presented as a draft open to modification and was intended to stimulate discussion, it may nevertheless have influenced stakeholders' perspectives and responses by drawing attention to specific concepts and intervention components. Another limitation was 1,5-hour time limit of the focus groups, which sometimes prevented full participant input and led to omitted questions. Conversely, imposing a time constraint was essential to maintain participants' focus and ensure feasibility of the process. Furthermore, an additional limitation to consider is that the data analysis was conducted by a researcher who had not been present during the focus groups. While this could be seen as a strength, because of the minimized preconceptions, it may also be considered as a limitation, as contextual cues such as tone, body language, or group dynamics, could have been lost in transcription and therefore might not be fully reflected in the analysis. However, AM and NF, who were also present during the focus groups, were also among others involved in discussing the results. Another potential limitation of this study is that no distinction was made between cancer survivors at different stages of the cancer trajectory, as this information was not systematically collected. Consequently, potential differences in needs and preferences across phases such as treatment, survivorship care, and long-term follow-up could not be explored. Lastly, some cancer survivors participated in a previous study [28]. However, the influence of previous participation in related research activities on the present findings is likely limited, given the differences in study objectives, interview guides, and methodological approaches.

Practical recommendations

In line with the practical recommendations identified in the individual interviews with cancer survivors by van Aken et al. (2025) [28], our study also demonstrates the need to improve the initiation and referral process for lifestyle counselling, thereby reinforcing relevance of these findings. Moreover, by incorporating both cancer survivor and stakeholder perspectives, our study identified several additional practical recommendations that may be important for the development of an integrated lifestyle intervention for cancer survivors.

To enhance the effectiveness and feasibility of an integrated lifestyle intervention for all cancer survivors, participants recommended delivery by an interdisciplinary team, reflecting the preferences to address both behavioral and clinical aspects of care. Participants moreover emphasized the importance of accessibility and flexibility, suggesting that a hybrid delivery model combining in-person and online sessions may increase reach and accommodate varying circumstances.

While personalization was consistently regarded as an essential feature of an integrated lifestyle intervention, participants also acknowledged the need for financially feasible interventions. Based on these findings, personalization should be incorporated within predefined boundaries, allowing for individual tailoring while preserving practical and financial sustainability. Similarly, a combination of group-based and individual sessions may provide an appropriate balance between personalized support and efficient resource use. Group sessions may offer additional benefits by facilitating peer support and the exchange of experiences, which cancer survivors considered valuable.

Furthermore, our findings, in conjunction with existing evidence on behavior change, suggest that interventions should extend for at least six months and include ongoing follow-up to support the maintenance of healthy lifestyle behaviors [42]. Finally, perspectives of cancer survivors and other stakeholders suggest that the use of a

digital application may be recommended to facilitate communication and collaboration between cancer survivors and professionals. Although the specific role and functionality of such digital tools require further exploration, their integration appears increasingly relevant in light of the growing digitalization of healthcare and society more broadly.

Future-research

Future research should begin by developing an integrated lifestyle intervention, ideally through co-creation with stakeholders to ensure relevance and acceptability. Once the program is designed, it must be pilot-tested with the target population of cancer survivors to evaluate feasibility and acceptability. Subsequent studies should assess the intervention's cost-effectiveness, estimating potential savings for health systems and broader societal benefits. A longitudinal study is needed to examine the sustained impact of the integrated lifestyle intervention on health outcomes and HRQoL, thereby generating robust evidence to support reimbursement by insurance. Moreover, additional qualitative research involving children and adolescent and young adult cancer survivors is warranted, as they may have distinct needs and preferences in survivorship care that require age-specific approaches, yet they were not represented in the current study. Moreover, it is important to develop tailored implementation strategies to embed an integrated lifestyle intervention for cancer survivors in standard care, ensuring that lifestyle counselling is accessible and sustainable.

Conclusion

This study provides valuable insights into the perspectives of cancer survivors and other stakeholders regarding aspects relevant for the development of an integrated lifestyle intervention for cancer survivors. The findings emphasize the need for a nationally organized integrated lifestyle intervention that is proactively offered from the point of cancer diagnosis onward, accessible to all cancer survivors, and tailored to individual needs. Additionally, the results highlight the importance of improving collaboration and communication within healthcare to support effective patient care. Together, these insights offer a foundation for designing an integrated lifestyle intervention for cancer survivors embedded in the standard cancer care with the aim to improve quality of life and health outcomes.

Abbreviations

AI	Appreciative Inquiry
GLINK	Gecombineerde Leefstijl Interventie Na diagnose Kanker (in English: Combined Lifestyle Intervention After Cancer diagnosis)
GP	General Practitioner
HRQoL	Health Related Quality of Life
MIDI	Measurement Instrument for Determinants of Innovation

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Data availability The data generated and analysed during this study consist of transcripts from focus group discussions. Due to the qualitative nature of the data and the potential identifiability of participants, the datasets are not publicly available but are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate This study was performed in line with the principles of the Declaration of Helsinki. Ethical approval for the focus groups with cancer survivors was obtained from the Ethical Commission Research of the Christian University of Applied Sciences in Ede, review number 29.06/24, and for the focus groups with other stakeholders from the Research Ethics Review Committee of the Faculty of Science, Vrije Universiteit Amsterdam, review number 2024-026. All participants received written and oral information about the study and were able to ask questions. Informed consent was obtained from all participants. All data were pseudonymized by removing identifying characteristics.

Consent for publication Not applicable.

Competing interests IS is co-owner of Brickhouse Academy; an educational institute focused on translating scientific knowledge about lifestyle and behavior change into practice. She is involved as a lecturer in various trainings for health professionals, including as one of the lecturers in a two-day continuing education course on lifestyle coaching for cancer patients. These activities are unrelated to the current study. The other authors have no relevant financial or non-financial interests to disclose.

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