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Geriatric perspectives on online information provision and multidisciplinary decision making for patients

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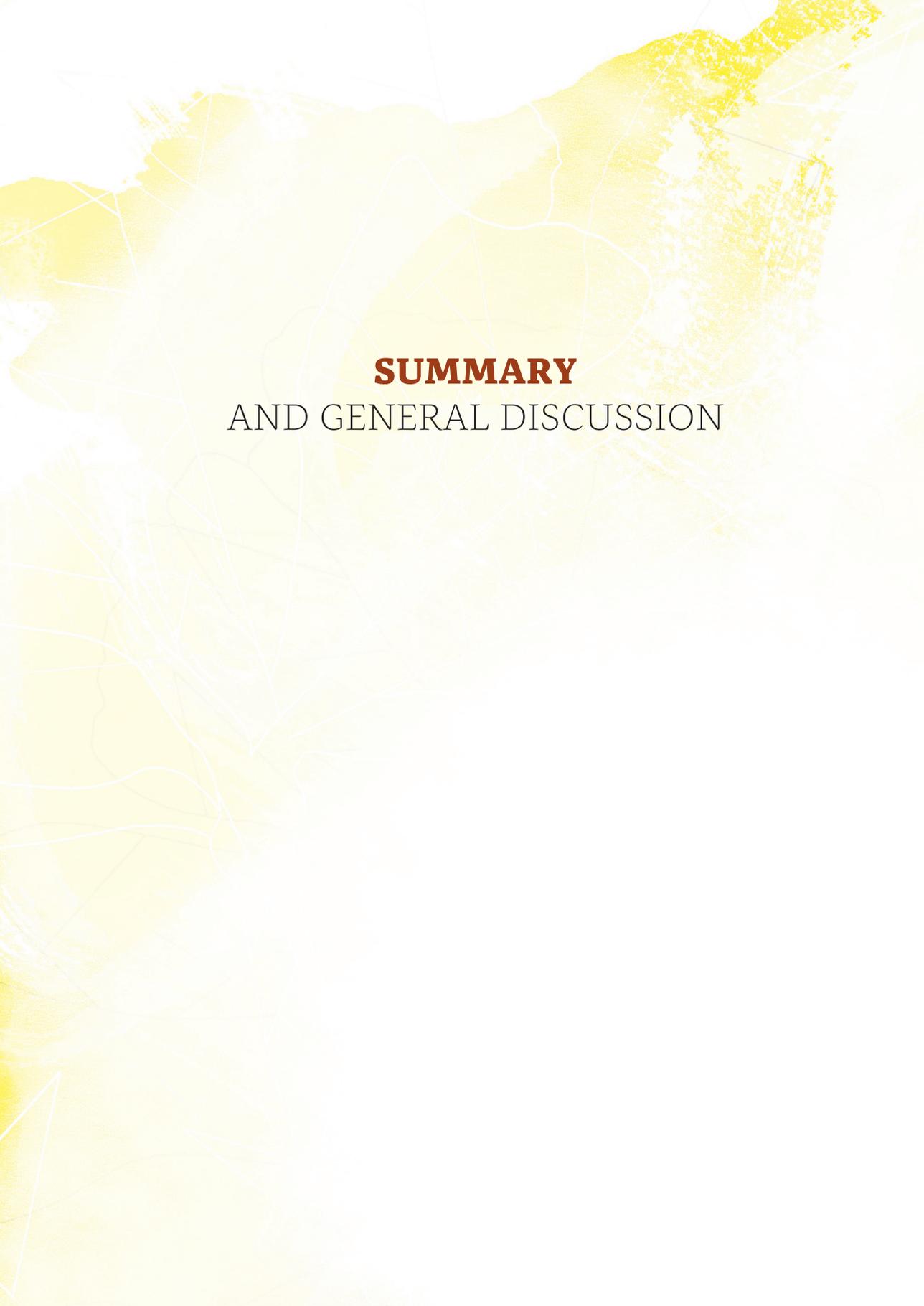
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SUMMARY
AND GENERAL DISCUSSION

Summary

Good communication between patients and their healthcare providers can lead to several beneficial health-related outcomes in patients (Street, Makoul, Arora, & Epstein, 2009). However, older patients (≥ 65 years) are more at risk of poor communication compared to younger patients (Adelman, Greene, & Ory, 2000). For example, we know that older patients recall less information (Jansen et al., 2008; Van Weert, Jansen, Spreeuwenberg, Van Dulmen, & Bensing, 2011), have several unfulfilled information needs (Van Weert, Bolle, Van Dulmen, & Jansen, 2013) and participate less actively during consultations (Sparks & Turner, 2008). In the process of finding solutions for these problems it is not only important to gain understanding of the communication process during the patient-provider interaction, but also to consider the context of the consultation in terms of the input both parties bring to the table.

The aim of this dissertation was to gain insight into the context of the communication of older cancer patients during consultations with their healthcare providers. This dissertation focused on two relevant communication developments in the context of the consultation with older cancer patients: (1) *online health information provision* that can support patients in information provision and preparation for consultations and (2) a geriatric perspective on *multidisciplinary decision making* during so-called multidisciplinary oncology team meetings for healthcare providers. The studies in this dissertation elaborate on existing literature and contribute to filling gaps in the fields of online health information provision for older cancer patients and multidisciplinary decision making surrounding consultations with older patients.

Summary of the main findings

Chapter 2, 3 and 4 are concerned with the first aim of this dissertation: investigating how older patients can benefit from tools that provide online health information and how older patients use and evaluate these tools. By reviewing the existing literature, the study described in **chapter 2** starts with the investigation of the effectiveness of online health information tools for older (≥ 65 years) patients. To give an overview of effectiveness of different online health information tools and the different outcomes they can have, we have proposed a two-dimensional framework of functions (i.e., information provision, information exchange enhancement, and self-management promotion) and outcomes (i.e., immediate, intermediate, and long-term outcomes). The review included 25 articles based on seven studies with a Randomized Controlled Trial (RCT) design. The methodological quality was assessed, and a Best Evidence Synthesis (BES) was conducted. This allowed us to attribute various levels of evidence (i.e., evidence, limited evidence, indicative findings, no/insufficient evidence) for the effectiveness of the assessed online health information tools. The review shows promising results for the use of online health information tools for older patients. We found evidence for improvement in the intermediate outcome self-efficacy for online health information tools with minimally information

provision and information exchange enhancement functions. We also found evidence for a positive effect on the long-term clinical outcomes 'blood pressure', 'hemoglobin levels', and 'cholesterol levels'. The majority of online health information tools that were effective in improving these outcomes had two or three functions. Limited evidence was found for an effect on the intermediate outcomes 'knowledge' and 'perceived social support' and the long-term outcomes 'glycemic control', 'quality of life', and 'exercise performance'. Again, the online health information tools effective in improving these outcomes had at least a combination of two functions.

To follow up on the outcomes of this study, the aim of the next study (**chapter 3**) was to evaluate the development and usability of the online health information tools for which we found evidence in improving intermediate and long term outcomes. To evaluate the development of the online tools we distinguished between various steps or cycles based on development models (i.e., Medical Research Council's (MRC) framework and the Spiral Technology Action Research (STAR) model). Overall, the reporting of the development of the online health information tools turned out to be too succinct. Specifically, only one article reported that a theoretical basis was used to develop the online health information tool (first step in development process). Moreover, we were unable to evaluate the usability of online health information tools as none of them were publicly available (second step). The implementation was only described for two online health information tools (third step). However, nothing was reported on the usage of the online health information tools, which would have been valuable as the tools consisted of several components. Therefore, we cannot make any assumptions on the effectiveness of the separate components or functions of the tools.

As we found online health information tools to be able to deliver promising results for older patients, but lacked knowledge on how to develop them, **chapter 4** reports on a study in which the question on how older cancer patients use and evaluate online health information is answered. The aim of this study was to gain insight into usability issues and the perceived usefulness of cancer-related online health information tools. We used think-aloud methodology in which we observed cancer patients and survivors ($n = 15$) and their partners ($n = 8$) while using existing online health information tools. The existing online health information tools that we examined in our study consisted of three websites providing cancer-related information, three online question prompt lists (QPLs; i.e., structured lists of questions or topics that patients can use to prepare for a consultation by choosing questions they would like to ask their healthcare provider), and one online values clarification tool (i.e., a decision aid that helps patients make decisions about their treatment by informing them of the treatment options and helping them clarify their values). Regarding how participants *use* online health information tools, we unveiled navigation problems, such as difficulties in navigation through websites that have multiple navigation bars, difficulties in clicking on small buttons or visual difficulties due to similar colors. Regarding how participants *evaluate* online health information tools, we found

that participants prefer information presented in different modalities (i.e., a combination of textual, visual, and or audiovisual information). Older patients varied in the amount of information they want. When participants had the possibility to self-select the amount of information this was highly appreciated. Based on the outcomes of this study and based on existing usability literature we give recommendations to develop online health information tools for older cancer patients and their partners.

In **chapter 5**, we turn to the second aim of this dissertation: investigation of decision making communication during multidisciplinary oncology team meetings from a geriatric perspective. This chapter addresses the results of an observational study in which the communication surrounding the decision-making process for ($n = 171$) older cancer patients during multidisciplinary oncology team meetings in five hospitals was unveiled. Moreover, we investigated the contribution of geriatric experts, such as a geriatrician or a geriatric nurse, to the decision-making process and to what extent geriatric evaluation of age-related characteristics of older cancer patients was used in the decision-making process. First, we found that discussion of alternative treatment options and arguments in favor of or against treatment options were often not part of the decision-making process. Second, we found that information on age-related patient characteristics and patient preferences was often left out of the discussion. Third, there were only few remarks during the meeting suggesting geriatric evaluation. Moreover, the contribution of geriatric experts, such as geriatricians or geriatric nurses, to the discussion was limited.

The results of the studies in this dissertation suggest that both for online health information provision as for multidisciplinary decision making it is important to take individual preferences and age-related characteristics into account.

General Discussion

This dissertation has presented the results of four studies that have investigated two recent and relevant communication developments in the context of the consultation between older (cancer) patients and their healthcare providers. The general discussion will first provide theoretical and methodological reflections, after which implications for future research and practice are discussed. Finally, this dissertation concludes with our recommendations for the development of online health information tools for older cancer patients.

Theoretical reflections

As the studies in this dissertation were descriptive in nature, the theories that are used throughout the dissertation were used to categorize and structure the results. To structure the results of the systematic literature review, a two-dimensional framework, based on two existing frameworks, was proposed. The first dimension considers the functions of online health information tools, inspired by a model by Bol, Scholz et al. (2013), which distinguishes three functions of patient websites: providing information, enhancing information exchange, and promoting self-management. The second dimension of the framework was based on a framework for medical communication by De Haes and Bensing (2009). Structuring the results of the literature review according to this two-dimensional framework provided us with a valuable research agenda. As time goes by, and more online health information tools for older patients will be developed and evaluated, the framework can be complemented with new results. As the theoretical basis of this framework consequently grows stronger, we will have better insights in which (combination of) functions are best in addressing which outcomes. In chapter 3 and 4, we dived more into the question of how online health information tools should be developed for older (cancer) patients. In chapter 3, development frameworks such as the Medical Research Council's (MRC) framework and the Spiral Technology Action Research (STAR) model are referred to. These models were used to evaluate the development of the online health information tools that have proven to be effective in the systematic literature review in chapter 2. For both models, it is assumed that development of online interventions is a holistic cyclical process. As the systematic literature review addressed the last step of the MRC framework, namely effectiveness evaluation of online health information tools for older patients, we assumed that with the information on the other elements (i.e., identifying existing evidence, identifying and developing theory, modelling the process and outcomes (step 1), assessing the feasibility of the intervention (step 2), and implementing the intervention (step 3), we could form recommendations on how to develop effective online health information tools for older cancer patients. However, since the development process, was not described detailed enough in publications to make recommendations for the development of new online health information tools for older patients, we started in chapter 4 with the first step of the STAR model, which is listening to intended users, by understanding how users interact with existing systems.

To arrange the structure of the medical decision-making process during multidisciplinary oncology team meetings in chapter 5, we used a theoretical framework for the decision life cycle of medical decisions as proposed by Fox et al. (2007). This model consists of five attributes, namely (1) an overview of the current *situation*, which results in (2) one or more *goals* that the decision is intended to achieve. Each goal has one or more (3) *candidates* (i.e., solutions or treatment possibilities). The next step (4) of the decision-making process is to form arguments in favor and against the proposed candidates. By (5) ranking and evaluating the arguments (i.e., *commitments*), a final decision can be reached. By allocate the remarks made during the multidisciplinary oncology team meetings to the five attributes, we were able to get a clear picture of the communication process, by seeing which steps were taken more often than other ones.

Methodological reflections

The studies in this dissertation have several strengths and limitations that are important to consider in interpreting the results. The strength of the systematic literature review lies in the fact that we included studies with a sample with a mean age of 65 years and older, whereas two previous literature reviews, although they aimed to address older patients, they did not use a cutoff point for the older age groups, resulting in the inclusion of studies with samples younger than a mean age of 65 years. Our literature review is the first review since 2006 to give an overview of the effectiveness of online health information tools for older patients. As is the case with all systematic literature reviews, a limitation of the review presented in chapter 2 is that studies that would have complied with the inclusion criteria could have been missed, despite our efforts to decrease this chance. A second methodological limitation was that a meta-analysis was not possible. Hence we chose to review the quality of studies with a Randomized Controlled Clinical Trial (RCT) design, following a Best Evidence Synthesis. We could not synthesize the results of studies with designs other than RCTs. More importantly, since we found in chapter 3 that characteristics and user patterns of online health information tools were not reported in detail, it is still difficult to synthesize and compare results. Therefore, our results can only indicate that online health information tools with multiple functions can lead to improvements in abovementioned intermediate and long-term outcomes. Future research is needed to further substantiate this statement.

The strength of the think-aloud study reported in chapter 4 is that we assessed the usability and perceived usefulness of seven existing different health information tools with various functions. Nevertheless, this study has also some methodological limitations. First, our sample consisted of cancer patients or survivors and their partners, whom we asked to envision themselves to be recently diagnosed. Although the use of so-called analog patients is considered to be a valid method (Van Vliet et al., 2012), the information in the tools might be less personally relevant for them, for example when they have had experience with a tumor type different than the one presented in the study website. Also usability problems might be different for analog patients compared to newly diagnosed

patients. Navigation problems could be more frustrating for newly diagnosed patients more in need of information compared to analog patients. Hence, or the development of new only health information tools, we recommend to eventually test the usability and perceived usefulness of the prototypes with the intended target group. Finally, a limitation of this study is that participants might have given socially desirable answers, as we noted a difference between self-reported data in which patients reported to easily find information, whereas our observational data showed participants to often have difficulties in finding the requested information. This suggests that future research should specifically focus on actual user patterns of older cancer patients.

Finally, the last study in this dissertation (chapter 5), involving non-participant observations with field notes of multidisciplinary oncology team meetings, has some limitations. First, the use of field notes was chosen over audio- or video recording for privacy reasons. In addition, as the researchers taking field notes did not have a medical background, we might have missed some information. However, our method seems reliable as the inter-coder reliability was sufficient and as the results of other studies that used case reports written after multidisciplinary oncology team meetings, instead of observations, also concluded that the use of patient-centered information is limited (Hahlweg et al., 2015; Lamb et al., 2012). Second, we can only conclude that information about older patients' characteristics such as their frailty was missing in the explicit decision making discussion during multidisciplinary oncology team meetings; we do not know whether some of this information was nevertheless available to the health care provider. Third, although the strength of this study is that it was carried out in five Dutch hospitals, with varying participation from geriatric experts, this study is limited in the sense that results can not be generalized to other countries. Regardless of these limitations, the studies in this dissertation provide novel and valuable insights, which future research can build on and which have some important practical implications.

Research implications

Implications for future research on online health information tools for older cancer patients

Regarding the effectiveness of online health information tools, the results of our review show promising results in that online health information tools with more than two functions can positively affect clinical outcomes (e.g., blood pressure, hemoglobin levels), or health-related outcomes (e.g., self-efficacy or quality of life). However, there were no studies that considered effectiveness of online health information tools on communication-related outcomes, such as recall of information provided during the consultation, increased patient participation or information needs fulfillment. As one of the uses of online information is to prepare for consultations (Caiata-Zufferey, Abraham, Sommerhaldler, & Schulz, 2010) and our study results in chapter 4 show that older cancer patients believe that preparatory tools such as Question Prompt Lists and Decision Aids are highly useful, we expect these tools to be able to affect communication during consultations

with healthcare providers. Therefore, future research should consider communication outcomes in investigating the effectiveness of online health information tools for older patients as intermediate effects and how these intermediate effects could lead to long-term effects.

Overall, we still lack knowledge on online health information tools' effectiveness and usage related outcomes in older cancer patients in particular. Of the studies included in the literature review in chapter 2, only four addressed the effectiveness of online health information tools for cancer patients. Of these, only two studies were conducted among cancer patients, whereas the sample of the other two studies involved analog patients and cancer survivors. Outcomes that were investigated were only related to the online health information tools themselves (i.e., website satisfaction, recall of information presented on the website, and website usage), rather than on outcomes external to the use of the online health information tool such as communication outcomes during consultation or health outcomes. Moreover, our own study presented in chapter 4 also had a sample of cancer patients and survivors and their partners. Hence, future research should be conducted among the intended users of the online health information tools, that is older cancer patients in the diagnostic or treatment phase who use the online information to prepare themselves for their consultations with health care providers.

Internet access and use among older individuals is higher in the Netherlands compared to other Western countries. In 2017, 88,3% of Dutch adults aged 65 years and older had access to the Internet (Statistics Netherlands, 2018). This is higher compared to the USA, where 66% of adults aged 65 years and older use the Internet in 2018 (Pew Research Center; Internet & Technology, 2018) and the EU, where 57% of the population aged 55-74 regularly used the Internet in 2016 (Eurostat, 2016). For all countries, these numbers have been increased over the past years (Eurostat, 2016, Statistics Netherlands, 2018; Pew Research Center; Internet & Technology, 2018). We can thus expect that the coming years the same high amount of older Internet users will be reached in the US. The Netherlands, as precursor of other Western countries is therefore the ideal region to study Internet related questions such as the study on how older patients use and evaluate online health information tools (chapter 4). That being said, the fast pace of changes in Internet access and use and the increasing development of online health information tools and similar innovations, make that the results of the studies presented in chapter 2, 3, and 4 may quickly become outdated. Future research should therefore anticipate rapid changes and technological innovations.

Implications for future research on multidisciplinary decision making concerning older cancer patients

First, future research should investigate whether and how communication during consultations with older patients prior to multidisciplinary oncology team meetings affects decision making. This is important as communication with patients is needed to gather

relevant information, such as their age-related characteristics and their preferences. This information may subsequently serve as input for the decision-making process during multidisciplinary oncology team meetings. In addition, future research is needed to investigate barriers in healthcare providers to share patient-centered information during multidisciplinary oncology team meetings. Second, future investigations are needed to study how treatment recommendations as discussed during multidisciplinary oncology team meetings are communicated to the patient.

Several improvements for the communication process during multidisciplinary oncology team meetings are suggested in chapter 5 (i.e., geriatric evaluation prior to multidisciplinary oncology team meetings and the use of checklists during these meetings in order to follow all relevant steps of the decision-making process). The impact of these improvements on multidisciplinary decision making warrants further investigation. Furthermore, as previous research on multidisciplinary oncology team meetings' effectiveness has shown to improve outcomes such as under- or overtreatment, changes in diagnosis or treatment plan, and mortality rates (Basta, Bolle, Fockens, & Tytgat, 2017), future research is needed to investigate whether improved decision making, as part of multidisciplinary oncology team meetings, is also related to further improvements of multidisciplinary oncology team meetings' outcomes. This is in particular essential for older patients, as they are more likely than younger patients to be under-or over-treated (Huyse, Stiefel & De Jonge, 2006; Maas, Janssen-Heijnen, Olde Rikkert & Wymenga, 2007).

Implications for future research on communication with older cancer patients

Most studies that have investigated the communication between older cancer patients and their healthcare providers only address one consultation. However, cancer patients are faced with multiple consultations with different healthcare providers and these consultations occur before and after multidisciplinary meetings and before and after their use of online health information tools. Future research should therefore address communication during consultations and communication in the context of the consultation longitudinally.

To gain a full understanding of the communication processes in the context of the consultation, future research needs to address other communication processes as well. We now only considered online health information provision. Future research could address other new sources that cancer patients can use to search for information and use as input for consultations with their healthcare providers. Patients use online interpersonal communication (e.g., skype consultations; online contact with other patients; Bolle, Muusses, Smets, Loos, & Van Weert, 2012; Muusses, Van Weert, Van Dulmen, & Jansen, 2012). The same holds for the perspective of the healthcare provider. We now only considered interpersonal communication during multidisciplinary meetings. However, online interpersonal communication (interpersonal online/Skype (long-distance) communication with other healthcare providers (Agestad & Lindsetmo, 2009) or multicenter

multidisciplinary oncology team meetings where two or more hospitals share the same multidisciplinary oncology team meeting by means of online video connection; (Davison et al., 2004)), and online mediated communication (e.g., online protocols) might play a role as well in the context of the consultation.

Practical implications

Implications for online health information tool development for older cancer patients

The finding in the study described in chapter 3, that effective online health information tools were no longer available online, is in line with the limited use and integration of eHealth tools that are developed for study purposes into care in general, as most eHealth tools that are developed in academic settings lack funding after the study has ended (Glasgow, Phillips, & Sanchez, 2014). This obstructs the implementation of online health information tools in clinical practice. To implement online health information tools on an organizational level, a comprehensive approach addressing key stakeholders is needed (Grol & Grimshaw, 2003). Moreover, some implementation barriers need to be tackled, of which the most important one is the pace where research is slow and investors expect a fast and high rate of return (Van Mierlo, 2012). Implementation failures of effective online health information tools are unfortunate from both a societal as a scientific perspective. From a societal perspective, patients are not able to use the online tools which have shown to be able to benefit them. From a scientific perspective, it is now not possible to replicate the studies and to use their findings to further develop and innovate online health information tools for older patients. Therefore, it is of utmost importance to provide detailed descriptions of not only the study process, but also the development process and the content of the online health information tool itself. Scientific journals, which often have word count restrictions due to limited amount of space, can play an important role in this matter. As the increasing use of online supplementary material would allow to publish detailed information on the development process of online health information tools, journals could insist on publishing this kind of information. Bringing it back to the societal relevance, only then patients can keep benefitting from scientific efforts in the development of effective online health information tools. Academia, healthcare providers, patient associations, health insurance companies and business stakeholders could work together on the development and implementation of online health information tools for older patients.

Based on existing literature and on the results of the study in which we have investigated how older cancer patients use and evaluate tools (chapter 4), we propose recommendations for the development of online health information tools for older cancer patients. We propose (1) recommendations that apply to all online health information tools regardless of their functions, (2) recommendations for presenting information, (3) recommendations for the development of QPLs and (4) recommendations for the development of decision aids.

Regarding recommendations that apply to all online health information tools, regardless its functions to account for visual decline in older patients, we first recommend websites to have large font sizes. Although a minimum font size of 12 has been recommended before (Pernice & Nielsen, 2002), we recommend an even larger font size as we found that older cancer patients were not able to find buttons to increase font sizes themselves. Our second recommendation is to include a horizontal navigation bar including a home button mentioning 'home'. Moreover as we found that older patients often overlook navigation bars and instead focus on the main text on a website, we recommend the homepage to only display navigation option in order to provide patients with a clear overview first and to make sure they find the information they search without being distracted by irrelevant information. This is important as older adults can experience difficulties in ignoring irrelevant information (Zacks & Hasher, 1997). Third, as older patients can experience physical changes affecting motor skills (Becker, 2004), it is important to provide enough spaces in between links or buttons.

Regarding presenting information online, our first recommendation is to avoid large amounts of information and instead provide a clear overview of available information first and let users choose what information they want and need by letting them click on buttons or links that leads them to information that is relevant to them. Another possibility is to provide only key information, and give users the ability to 'pull-out' more information if they want to read more detailed information. Our second recommendation is to consider modalities in which information can be presented (i.e., textual, visual and audiovisual information). Regarding visual information (i.e., the use of illustrations), previous research shows that the use of illustrations in combination with textual information can positively affect website satisfaction, which can be considered an important outcome as it increases the motivation to process information (Bol et al., 2015; Bol et al., 2014; Bol et al., 2016). Regarding audiovisual information, it has previously been found that the use of conversational style videos on cancer-related websites can improve satisfaction with the website and recall of information presented on the website (Bol et al., 2013) in particular when the narrator in the video is older (Bol, Van Weert, De Haes, Loos, & Smets, 2013). Another possibility is to have older users self-tailor the modality of the information on a website, which has shown to improve website satisfaction, attention to the website and recall of information (Nguyen et al., 2017; Nguyen, Smets, Bol, Loos, & Van Weert, 2018).

Regarding the development of QPLs for older cancer patients, we first recommend to limit the amount of questions in QPLs to a maximum of 20, only making one question visible at the time. As we found in our study in chapter 4 that older patients usually want to add every question to their personal list, we recommend to have users indicate the importance of each question, by asking how important (e.g., "not important", "rather important" or "extremely important" it is to them to ask the question to their health-care provider). The final personal list will first show the questions which they think are

“extremely important” to ask, followed by questions that they think are “rather important” to ask. Our following recommendation is to incorporate a QPL on a website that also provides information. When users place questions on their list, it is then possible to already link to the information on the website that might provide an answer to their questions. If their question is answered, they might want to remove that question from their personal list, reducing the length of their list. Our final recommendation regarding QPL development is to give users the ability to print or email the personal list in order to bring it to the consultation.

Regarding the development of decision aids, we found that older cancer patients prefer to discuss treatment possibilities with their healthcare providers during consultation, instead of using tools that provide patients with complex information and numbers on probabilities, for example the probability for a tumor to recur, or the probability that a treatment will cause symptoms that could decrease quality of life. We therefore recommend to include information on a website with practical information on how to address decision making with their healthcare providers. This is for example possible by pointing patients to ask three questions to their healthcare providers (i.e., “what are my options?,” “what are the possible benefits and harms of each option?,” and “how likely are the benefits and harms of each option to occur?”). This approach has showed that healthcare providers consider patient preferences more often (Shepherd et al., 2011).

Implications for multidisciplinary communication concerning older cancer patients

One possible way to improve the decision-making process during multidisciplinary oncology team meetings is by using a checklist. Such a checklist has been proposed before (Lamb et al., 2012) comprising (1) organizational aspects (e.g., the presence of all team members and the involvement of specialists from different fields), (2) patient related aspects (e.g., case history, patient characteristics, patient preferences and evidence from clinical trials), and (3) reaching and implementing a decision. However, this checklist does not account for the decision-making process itself. Since we found important steps in the decision-making process to be missing, we recommend any checklist to also include the steps of the decision-making process as proposed in the theoretical framework by Fox et al. (2007), in order to make sure none of the steps in the decision-making process are skipped.

Multidisciplinary decision making can, in particular for older patients, also be improved when healthcare providers gather information on age-related characteristics of individual patients and patients’ needs by the time of the multidisciplinary oncology team meetings. To gather information on patients’ age-related characteristics, geriatric evaluation tools, such as Geriatric Screening or Comprehensive Geriatric Assessment can be used. These tools give a detailed overview of older patients’ frailty or vitality. In the study described in chapter 5, it was found that patients were sometimes referred to such a screening after the multidisciplinary oncology team meeting. However, geriatric evaluation should pref-

erably be performed before multidisciplinary oncology team meetings. The importance of assessing patients' frailty recently became a topic on the media and political agenda in The Netherlands. Groenlinks, a Dutch Political party, argues for a frailty screening for all patients older than 70 years of age in order to prevent overtreatment of frail older patients (Van Steenberghe & Weeda, 2018). Geriatric evaluation of older cancer patients should also be positioned on the healthcare agenda in general and of multidisciplinary oncology team meetings in particular.

Implications for communication with older cancer patients

Healthcare providers play an important role in communication processes with older cancer patients inside as well as outside the consultation room. Besides their role during the consultation, they participate in multidisciplinary communication where they have to represent the interests of the patient. This is particularly important for older patients as evidence-based guidelines, which are based on clinical trials in which older patients are underrepresented (Hutchins et al., 1999), are not sufficient for treatment decision making purposes. Therefore, healthcare providers, such as geriatricians or geriatric nurses, could act as advocates of the patient by including information on patient characteristics and preferences in the multidisciplinary decision making. In addition, for an optimal impact on the communication during consultations, healthcare providers could also play a role in the provision of tailored online information to their patients. Next to computer-tailoring, where individuals receive automated tailored information based on their answers in a questionnaire (e.g., Smit, Linn, & Van Weert, 2015), or self-tailoring, where individuals self-select the information they want, when they want it, healthcare providers could also play an active role in tailoring information for their patients. For example, healthcare providers could select information on the website that is relevant to the patient or refer them to reliable websites in order for the older patient not to have to go through irrelevant information. Also, this way, patients can receive information relevant to the phase that they are in at that point in time. This helps to dose the information, instead of offering a website with all information at the same time. Tailoring information is particularly relevant for older patients considering the fact that they often suffer from multiple (chronic) illnesses and already have more difficulties in processing information (Jansen et al., 2008; Van Weert et al., 2011). Another way in which healthcare providers can play a role in online health information provision is by actively engaging in the use of question prompt lists by patients. Question prompt lists are mostly tools for patients to prepare for consultations. Additionally, question prompt lists filled in online could be sent to the healthcare provider before the consultation as well (Linn, Van Weert, Smit, Perry, & Van Dijk, 2013). That way, both patient and healthcare provider can optimally prepare for the consultation and the healthcare provider can prepare to tailor the consultation to the questions and needs of the patient. This is recommended as research has shown that the use of a question prompt list can only improve recall of information when healthcare providers actively endorse such a tool (Brown, Butow, Dunn, & Tattersall, 2001).

Final conclusion

This dissertation explored two relevant developments that play a role in the context of the consultation between older patients and their healthcare providers. The first development concerns online health information provision. This dissertation showed that online health information tools can improve several clinical outcomes and how older cancer patients use and evaluate online health information tools. Age-related problems can negatively affect the usability and intention to use online health information tools and therefore need to be carefully considered in the development of effective online health information tools for older patients.

The second development concerns multidisciplinary decision making from a geriatric perspective. This dissertation showed that the decision-making process often lacks several steps, of which the most important one is the discussion of individual age-related characteristics of patients and their preferences. Moreover, discussion of geriatric evaluation, such as geriatric consultation, Geriatric Screening and/or Comprehensive Geriatric Assessment and involvement of geriatric experts (e.g., geriatricians and geriatric nurses) during the meetings was limited. To conclude, communication tailored to age-related changes in individual patients and their preferences and needs is of utmost importance in all communication processes in the care of older cancer patients, whether it is online information provision, multidisciplinary decision making, or communication during the consultation.