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'Organizational and Patient Perspectives of at Home Cancer Treatment – a Qualitative Approach'

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Abstract

Introduction: Hematologic cancer is a burdensome disease, affecting millions of people worldwide and is also one of the most common cancer groups in Denmark. The increase in the elderly population has caused an increase in the number of people getting hematologic cancer and also led to a pressure on the healthcare system, leading to the need for alternative healthcare methods such as moving treatment home. This study investigated the current landscape of home treatment for hematologic cancer patients by conducting a document analysis and semi-structured interviews with hematologic cancer patients receiving at-home subcutaneous cancer treatment, exploring their experiences and perspectives of the treatment.

Methods: The study was divided into three substudies with each of their methods. The first substudy is an organizational analysis of the current at-home treatment options and a document analysis of home treatment guidelines across regions. The second is a systematic literature search of existing studies of semi-structured interviews of cancer patients receiving at-home chemotherapy investigating their experiences and perceptions of their treatment. Furthermore, the systematic literature search provided information for the creation of the interview guide for the present study. The third substudy was a semi-structured interview of hematologic cancer patients receiving at-home subcutaneous treatment. The interviews transcripts were analyzed using thematic analysis.

Results: The organizational analysis was conducted on home treatment guidelines for the subcutaneous treatments daratumumab, azacitidine and bortezomib in the regions which had published home treatment guidelines. The systematic literature search resulted in three studies eligible for inclusion. An additional study was included from an chain search, resulting in four studies. Interviews were conducted of four hematologic cancer patient receiving home treatment between 7th of April and the 22nd of April 2025. From the interviews, three themes were developed: 'Logistic aspect', 'Personal relation to home treatment' and 'The importance of relation to HCP's'.

Conclusion: The organizational analysis finds some differences between the at-home treatment guidelines for daratumumab, azacitidine and bortezomib. The three themes identified and the knowledge gained from the interviews serve as a preliminary investigation into the experiences and perceptions of hematologic cancer patients receiving subcutaneous at-home treatment in Denmark.

Resumé

Introduktion: Hæmatologisk kræft er en belastende sygdomsgruppe, som påvirker millioner af mennesker på verdensplan og er en af de mest almindeligt forekommende cancergrupper i Danmark. Stigningen af ældre i befolkning har ført til en stigning i antallet af mennesker der får diagnosticeret hæmatologisk kræft samt et øget pres på sundhedsvæsenet, hvilket har ført til et behov for alternative behandlingsmetoder, såsom at flytte behandlinger hjem til patienten. Dette studie undersøgte den nuværende organisering af hjemmebehandling af hæmatologiske kræftpatienter ved at udføre en dokumentanalyse og semistrukturerede interviews af patienter med hæmatologisk kræft som modtager subkutan hjemmebehandling for at undersøge deres oplevelser og opfattelser af behandlingen.

Metode: Studiet var opdelt i tre delstudier med hver deres metode. Det første delstudie var en organisatorisk analyse af de nuværende hjemmebehandlingsmuligheder og en dokumentanalyse af retningslinjer for hjemmebehandling på tværs af regioner. Det næste delstudie var en systematisk literatursøgning for at finde studier hvor metoden er semistrukturerede interviews af kræftpatienter i hjemmebehandling for at undersøge deres oplevelser og opfattelser af behandlingen. Det sidste delstudie omhandlede det semistrukturerede interview af hæmatologiske kræftpatienter som modtager hjemmebehandling. Interviewtranskriberingerne blev analyseret ved brug af tematisk analyse.

Resultater: Den organisatoriske analyse blev udført på retningslinjerne for hjemmebehandling af de subkutane behandlinger daratumumab, azacitidin og bortezomib i de regioner som havde udgivet dem. Den systematiske literatursøgning resulterede i tre studier som var egnede til inklusion. Yderligere et studie var tilføjet efter at have lavet en kædesøgning på de tre inkluderede studier. Der blev foretaget interviews af fire patienter med hæmatologisk kræft. Fra interviews blev tre temaer konstrueret: 'Logistic aspect', 'Personal relation to home treatment' og 'The importance of relation to HCP's'.

Konklusion: Den organisatoriske analyser viser nogle forskelle mellem hjemmebehandlingsinstrukserne for daratumumab, azacitidin og bortezomib. De tre temaer og viden fra interviews fungerer som indledende forskning af oplevelser og opfattelser blandt hæmatologiske kræftpatienter som modtager subkutan hjemmebehandling i Danmark.

Contents

1 Introduction

Hematologic cancers are a group of common and burdensome cancer types, affecting millions of people worldwide with an incidence of 1.3 million people in 2019 (Zhang et al., 2023). The Western countries and Denmark have a high age-standardized incidence of 16.87 per 100.000 people in 2019 and in Denmark approximately 4500 will be diagnosed with hematological cancer yearly (Larønningen et al., 2025a), (Zhang et al., 2023). In Denmark, the incidence of hematologic cancers has risen gradually from the 1940's, which is the earliest period NORDCAN has registered and published yearly incidence data, from 10.4 cases per 100.000 people in 1943 to 75.5 cases per 100.000 people in 2022 (Larønningen et al., 2025b). However, the survival rates of patients with hematologic cancer have increased in this period, but there are large differences in survival rates between the hematologic cancers (Larønningen et al., 2025b). The increase in hematologic cancer incidence can mostly be attributed to the demographic shift of an aging population (Kocarnik et al., 2022). Some hematological cancer types such as leukemia can also be caused by exposure to environmental carcinogens or radiation, and Hodgkins Lymphoma is theorized to be triggered by an Epstein Barr virus in some cases (Saunders and Wah Mak, 2014). Dealing with cancer causes major psychological and functional difficulties for the people affected. Cancer survivors also face challenges in regards to their personal life and work (Levinsen et al., 2023). They also experience a poorer health related quality-of-life than the general population; a difference which is amplified in cancer survivors of lower socioeconomic status (Levinsen et al., 2023). Cancer survivors are also more likely to be unemployed Carlsen et al. (2008). Thus, it is crucial to improve their circumstances to prevent the issues cancer patients are facing.

1.1 Treatment at Home

The demographic change in Denmark which leads to an older population also leads to more hospital visits and admittances since older people are more likely to need health care services (Neerup Handlos, 2023). To meet the increased need for health care services of an aging population and to keep the quality of the health care delivered at a high level, different solutions have been proposed. One of those solutions is to free up the time of health care personnel and make space for patients with a larger need for inpatient hospital stays by moving treatments which are currently performed at the hospital or at an out-patient facility to a home setting, while still monitoring the patients health and offering digital means of communication for the patients who need it (The Danish Ministry of Interior and Health, 2024).

Furthermore, there is a political wish to investigate which treatments could be offered at home and to what extent. This is concretized in the Danish Health Act from 2024 where one of the key areas are 'more treatment close to or at home'. From 2026 and onward, the implementation of teams supporting home treatment will be financially supported (The Danish Ministry of Interior and Health, 2024). The need for more treatment close to or at home was also established in a report from Sundhedssektorens Prioriteringsråd (Sundhedssektorens Prioriteringsråd, 2024). The report consists of 20 recommendations, where recommendation 2 calls for a growth in the local health services and recommendation 3 advocates for the treatment and monitoring in the patients own home, without compromising the need for safe and effective treatment (Sundhedssektorens Prioriteringsråd, 2024). How-

ever, it is crucial to consider how the patients experience at-home treatment differently. Additionally, if at-home treatment if not offered in the most optimal way, it might lead to an unnecessary burden on the health care sector.

Cancer treatment at home is a relatively new concept in Denmark. Historically, cancer treatment has been delivered at outpatient or inpatient units. In 2011, Vejle Sygehus conducted a study to investigate whether chemotherapy at home was a feasible option for adult patients with multiple myeloma and whether it would reduce outpatient visits (Frølund, 2011). The study found that chemotherapy at home was a safe and feasible alternative to outpatient care (Frølund, 2011). As of 2024, cancer treatment at home is offered by most hematologic departments in Denmark, but the treatment regimen and the patient criteria differs between departments (Bødtcher et al., 2024). A common denominator for being eligible to at-home treatment is that the patient is cognitively and physically able to administer the cancer treatment, whether it is administered intravenously through a central venous catheter or subcutaneously (Bødtcher et al., 2024). Furthermore, being able to understand and read Danish is also a common criteria for cancer treatment at home, since being able to administer cancer treatment at home requires training sessions at the hospital unit responsible for the treatment. Whether a patient is eligible for cancer treatment at home is decided by the health care professional in charge of the treatment (Bødtcher et al., 2024). Subcutaneous cancer treatment is offered to patients with acute myeloid leukemia, myelo-dysplastic syndrome, multiple myeloma, chronic myelomonocytic leukemia, and T-cell lymphoma. However, some types of hematologic cancers might need a supplementary treatment of immunotherapy. These include multiple myeloma and acute lymphoid leukemia which are cancer types often leading to a compromised immune system (Bødtcher et al., 2024). Therefore, antibiotics are also offered at all department for patients in need. Immunoglobulins are also offered as home treatment at most departments, and only three departments offer hydration at home (Bødtcher et al., 2024).

A study conducted in Denmark by Nørskov et al. (2022) on patients with leukemia suggests that delivering chemotherapy at home is safe and well-received with patients showing high satisfaction with receiving chemotherapy at home(Nørskov et al., 2022). Patient satisfaction was investigated through a questionnaire dealing with the topics of safety and how the chemotherapy pump the patients wore affected their daily life (Nørskov et al., 2022). Treatment at home also demands more of the patient as they have to receive training in how to deliver the medicine themselves. Furthermore, they have to be able to contact the hospital unit responsible for their treatment when they experience side effects or, in the case of intravenous chemotherapy administration, when there is an error related to the delivery of medicine through the chemotherapy pump. The increased patient demands could make it difficult for some patient groups to receive chemotherapy at home. (Damsgaard, 2018).

1.2 Subcutaneous Chemotherapy

Historically, cancer treatment has been delivered intravenously which typically requires help from health care personnel, since the person administering the treatment must locate a vein to inject the cancer treatment in. Today, intravenous cancer treatment is administered through a central venous catheter which is a surgically inserted tube leading into one of the large veins to the heart (Rigshospitalet, 2024). The central venous catheter is planted

by an anesthesiologist at a hospital (Rigshospitalet, 2024). Wearing a central venous catheter requires hygienic care and the catheter will need to be removed after the cancer treatment is done(Rigshospitalet, 2024). When patients receive intravenous cancer treatment at home in Denmark, they keep the solution in a CADD-Solis pump, which is a device for storage and infusion of chemotherapy. Some forms of cancer treatment are now made to be administered subcutaneously, which leads to easier self-administration and no need for a delivery pump (Nørskov et al., 2022). This enables the cancer patients to become more independent in delivering their medicine as they can administer it themselves. Subcutaneous cancer treatment could thus ease the implementation of at-home cancer treatment in general. Despite the different treatment options for hematologic cancer patients this study will focus on the delivery of subcutaneous cancer treatment at home to limit the study scope and to investigate cancer treatments which can be performed by patients independently.

1.3 Project Aim

The study will consist of three substudies. The first part will look into the organization of receiving subcutaneous cancer treatment at home in a Danish context. This will be done to create an overview of the current practice and to explore regional differences. To investigate international knowledge of cancer patients experiences and perspectives of receiving cancer treatment at home, a systematic literature search will be conducted in the next substudy. Furthermore, the studies emerging from the systematic literature search and the knowledge from the organizational substudy will be used to establish interview questions for the last substudy, which will explore the perspectives and experiences of hematologic cancer patients who are receiving or have received subcutaneous cancer treatment at home by conducting interviews. Thus, the aim of the project is as follows:

To investigate the organizational structure of at-home hematologic cancer treatment and barriers to explore adult hematologic cancer patients experience with receiving at-home subcutaneous cancer treatment in Denmark by conducting semi-structured interviews.

To answer the aim, the following research questions have been constructed:

What differences are there in the at home treatment guidelines across regions?

What are the patients experience with receiving subcutaneous cancer treatment at home?

2 Methods

The method section will cover methodological techniques and considerations done to answer the aim and research questions. The first part of the method section covers the organizational substudy and methods applied. The next part of the method section covers the literature search. This part of the method section will end with a critical assessment of identified studies. Afterwards, the methods of the interview design and the interview analysis will be covered.

2.1 Organizational Perspective

Furthermore, to investigate the information available for hematologic patients receiving home treatment in regards to the administration and handling of medication, a document search has been performed. Google searches were utilized to access publicly available information. The Google searches were initially keywords such as 'home treatment' and this search term was combined with treatment options for hematologic cancer to find the guidelines for each of the home treatments for hematologic cancer available in every region. The name of the specific regions were also added to the search terms to find guidelines for each region.

A document analysis of the included guidelines was performed. The study by Bowen et al. (2009) was used as a framework for the document analysis (Bowen, 2009). The content of the included documents were analyzed and compared to investigate similarities and differences between the documents. The documents were analyzed in regards to differences in the degree of detail in the text and differences between what information was given, whether it was additional information or information lacking in one document. The information could be both text, illustrations and type of document (Bowen, 2009).

2.2 Systematic Literature Search

To identify relevant questions for hematologic cancer patients receiving cancer treatment at home and to identify current knowledge about expectations and perceptions of patients receiving cancer treatment at home a systematic literature search was performed. The literature search was performed in PubMed/MEDLINE and Embase. To perform the systematic literature search a PICO (Population, Intervention, Comparator, Outcome) was developed based on the research questions. A PICO is a systematic approach to literature search intended to define the scope of the search (Thomas et al., 2024). Initially, search terms for each PICO facets were developed, but when including search terms for the 'comparator' and 'outcome' facets, there were no search results. A PICO search does not need to include each component, and a search focusing on the components 'population' and 'intervention' was conducted (Thomas et al., 2024). A preliminary search string was developed from the PICO in collaboration with a librarian to ensure a high quality search.

While screening titles based on the preliminary search string, a systematic review protocol by Witwaranukool et al. (2024) was identified with a very similar aim and research question as the present project (Witwaranukool

et al., 2024). However, the study was only a protocol and was thus not yet conducted. A PubMed search string was included in the appendix of the project by Witwaranukool et al. (2024), which lead to the creation of an expanded PICO with search terms for each facet, not just the 'population' and 'intervention' facets (Witwaranukool et al., 2024). Relevant search terms not already included in the preliminary search string were added for each facet with OR to find additional studies relevant to answer the research questions.

A table of the search terms based on the PICO in both PubMed/MEDLINE and Embase can be seen in table 2.1 and 2.2

AND			
Population	**Intervention**	**Comparator**	**Outcome**
MeSH: "neoplasms" **Title/abstract:** "cancer*" "neoplasm*" "malignan*" "tumor*" "tumour*" "leukemi*" "leukaemi*" "myeloma*" "lymphoma*" "hematol*" "haematol*"	**MeSH:** "Antineoplastic Agents" "Cytarabine" "Bortezomib" "Azacitidin" **Subheading:** "drug therapy" **Title/abstract:** chemotherap* antineoplastic agent* cytarabine bortezomib azacitidine	**MeSH:** "home environment" "home" "hospital at home" "hospital in the home" "home care" "home infusion therapy" **Title/abstract:** "home based chemotherap*" "home based oral chemotherap*" "homebased chemotherap*" "homebased oral chemotherap*" "home based infusion*" "homebased infusion*" "home based administration*" "homebased administration*" "home based treatment*" "homebased treatment*" "at home chemotherap*" "at home infusion*" "at home treatment*" "at home administration*" "administration at home*" "hospital at home" "chemotherapy at home" "treatment at home" "administration at home" "home chemotherap*" "home infusion*" "home treatment*" "home administration*" "home care setting" "domestic chemotherap*" "domestic infusion*" "domestic treatment*" "domestic administration*" "domicil* chemotherap*" "domicil* infusion*" "domicil* treatment*" "domicil* administration*" "home cancer care*" "home environment" "home"	**Emtree term:** "focus group" "mixed method" **Title/abstract** "qualitative*" "interview*" "narrative*" "mixed method*" AND "experience*" "percep*" "perceive*" "subjective*"
FILTERS			
Publication year: 2010-2025			

OR

Table 2.1: *The PICO for the PubMed search. Each search term were connected with 'OR' vertically and with 'AND' horizontally. The bold text in each facets denotes the search field for each search term. The bottom of the PICO facet show the applied search filters.*

AND			
Population	**Intervention**	**Comparator**	**Outcome**
Emtree term: "neoplasm" **Title/abstract/ keyword:** "cancer*" "neoplasm*" "malignan*" "tumor*" "tumour*" "leukemi*" "leukaemi*" "myeloma*" "lymphoma*" "hematol*" "haematol*"	**Emtree term:** "antineoplastic agent" "Drug therapy "cytarabine" "bortezomib" "azacitidin" **Free word:** Drug therapy* **Title/abstract/ keyword:** chemotherap* antineoplastic agent* cytarabine bortezomib azacitidine	**Emtree term:** "home environment" "home" "hospital at home" "home care" "home infusion therapy" **Title/abstract/keyword:** "home based chemotherap*" "home based oral chemotherap*" "homebased chemotherap*" "homebased oral chemotherap*" "home based infusion*" "homebased infusion*" "home based administration*" "homebased administration*" "home based treatment*" "homebased treatment*" "at home chemotherap*" "at home infusion*" "at home treatment*" "at home administration*" "administration at home" "hospital at home" "chemotherapy at home" "treatment at home" "administration at home" "home chemotherap*" "home infusion*" "home treatment*" "home administration*" "home care setting" "domestic chemotherap*" "domestic infusion*" "domestic treatment*" "domestic administration*" "domicil* chemotherap*" "domicil* infusion*" "domicil* treatment*" "domicil* administration*" "home cancer care*" "hospital in the home" "own home*" "home environment" "home"	**Emtree term:** "focus group" **Free word:** "qualitative*" "interview*" "mixed method" **Title/abstract/keyword:** "qualitative*" "interview*" "narrative*" "mixed method*" AND **Title/abstract/keyword** "experience*" "percep*" "perceive*" "subjective*"
OR			
FILTERS			
Publication year: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025			

Table 2.2: *The PICO for the Embase search. Each search term were connected with 'OR' vertically and with 'AND' horizontally. The bold text in each facets denotes the search field for each search term. The bottom of the PICO facet show the applied search filters.*

2.2.1 Eligibility Criteria

Eligibility criteria were constructed based on the PICO elements to ensure study homogeneity. Studies had to be in English, Danish, Swedish or Norwegian to be considered. Additionally, studies without a title, abstract or full text were excluded. Full text studies were also excluded if they were not open access, unable to be retrieved

through the university or if there were no full texts. The scope of the study is specifically adult patients with hematologic cancer in a home treatment setting; Thus, studies focusing on pediatric patients were excluded since children would need help to administer the cancer treatment. For this reason, studies where the patients received help to administer cancer treatment from an informal caregiver or a nurse were excluded. Studies including non-hematological cancer patients were included due a perceived lack of studies only including hematologic patients and because non-hematologic cancer patients experience a comparable cancer treatment. On an abstract-level, only studies using structured or semi-structured interviews to investigate the patient experience of home-based treatment were included. Finally, only studies from 2010 or later were included to take into account changes in the field of cancer home treatment. Titles or abstracts with limited information about the study design were given the benefit of the doubt; Thus, they would be included by abstract or full text until certain exclusion criteria were identified.

A table of eligibility criteria can be seen in table 2.3

Inclusion criteria	Exclusion criteria
• Articles in English, Danish, Swedish or Norwegian • Articles using structured or semi-structured interview method • Articles involving patients in home-based chemotherapy treatment • Qualitative articles • Articles including interview questions • Articles from 2010 and later	• Articles focusing on pediatric cancer patients • Articles investigating caregiver experiences exclusively • Articles without title, abstract or full-text • Articles with inaccessible full-texts • Case studies

Table 2.3: *A list of inclusion and exclusion criteria used in the literature search.*

2.3 Critical Assessment of Included Articles

The included studies were qualitatively assessed using the CASP (Critical Appraisal Skills Program) checklist for qualitative research (Long et al., 2020). The CASP checklist is a tool to appraise the strengths and limitations of a study. The checklist consists of 10 questions in three sections (Long et al., 2020). The first section deals which the validity of the research, the second section with the results and the third section deals with the relevance of the research (Long et al., 2020).

2.4 Data Collection

The purpose of the systematic literature search was to find articles which had investigated the experiences and perceptions of cancer patients receiving treatment at home. The included studies would bring insights into what general themes and questions to include in the interview of the present study to be performed on the same

population. Each of the studies were read. If the studies included the specific questions asked to the participant the questions would be extracted. However, if the studies did not include specific questions, the general themes identified from participant answers would be extracted. When all the interview question or themes from the studies were extracted, they were compared to examine whether some of the question or themes were overlapping between the studies. This process led to the generation of a specific interview guide with questions emerging from the included studies.

2.5 Study Design

An interview introduction was created to serve as a personal guide introducing the interview participant to the project, the purpose of the project, an overview of the questions to be asked, the length of the interview and a run-through of the consent form. Lastly, permission to record the interview would be received from the participant and the interview would begin. The interview questions would be asked in sequence if still relevant to the conversation. The interview would end when all topics were covered and the participants were asked if they had any concluding statements. Furthermore, the age, gender, and hematologic cancer type of the patients were retrieved.

The interview questions were constructed based on studies from the systematic literature search and the research questions. Each question were grouped under a set of themes which helped creating structure. The first part of the interview deals with the starting period of at-home cancer treatment and how being treated at home changed the patients everyday life. The next part is about the patients experiences with outpatient treatment. The third part deals with the logistic aspect of their home treatment, asking questions such as how the patients receive their medicine and how they structure their life around the home treatment. The last part is about their training period in delivering cancer treatment and their subsequent contact with the responsible hospital unit. The interview guide can be seen in appendix 10.4.

2.6 Interview Method

Throughout the study period, nurses at the regional hematologic departments were contacted by telephone calls or by mail to find patients interested in being interviewed. Patients were to be recruited until data saturation was met. The book 'Interview' by Kvale et al. was used to get an overview of different interview methods (Kvale and Brinkmann, 2015). Specifically, the seven stages of an interview process was utilized as a framework for the interviews.

The first stage of an interview study is 'thematizing' where the reasons for conducting an interview as the preferred way to gather data are discussed and considered. Furthermore, this stage is used to acquire knowledge about the topic to be explored and lastly what interview methods should be used to answer the research aim. This stage was completed through the introduction and the aim of the project.

The second stage is the 'design' of the interview, where methodological choices are made to ensure that the interviews collect information relevant to the study aim and to ensure transparency of the interview design. Nurses at the five university hospitals in Denmark; Aalborg University Hospital, Aarhus University Hospital, Odense University Hospital, Zealand University Hospital and Rigshospitalet were contacted with the goal of finding patients willing to participate in an interview. Each region were contacted to ensure high national generalizability, to maximize opportunities of finding participants in a relatively small patient group and to investigate potential regional differences in at-home cancer treatment procedures. Furthermore, a recruitment form was sent to the nurses, consisting of information about the study and the study objective, patient eligibility criteria and how to initiate contact to participate. The nurses sent this form to eligible patients who were then told to contact the author of the project if they wanted to participate in an interview.

The third stage is the 'interview' stage, where the actual interviews are conducted. Patients were interviewed between the 7th of April and 22nd of April while at the hospital or at home depending on their preferred setting. A semi-structured interview was utilized to answer the research question and an interview guide was developed based on themes identified in the systematic literature search. The interview questions were designed to be asked in sequence unless the questions were otherwise covered beforehand. Furthermore, the interview guide contained practical information about the interview and the handling of data along with questions about general patient characteristics such as gender, age and hematologic cancer type. All interviews were conducted in Danish. The interview guide can be seen in Appendix 10.4

The fourth stage is the 'transcription' stage where the audio recordings of the interviews are transcribed to text. Interviews were recorded with Microsoft Teams where the recordings are available after the interviews. The interviews were transcribed manually since the automatic transcriptions in Microsoft Teams were very incorrect. Different methods for transcribing exist, which depend on the interview design. Verbatim transcriptions were performed, where each spoken word are transcribed (Halcomb and Davidson, 2006). Verbatim transcription was used to include a recreation of the verbal content. Furthermore, different fonts and text coloring were used to denote who was talking and punctuation was used to denote pauses or unintelligible speech. A personal transcription guide was developed to ensure a systematic transcription of every interview.

The fifth stage is the 'analysis' of the interviews, which concerns different analysis techniques of the transcribed interviews depending on the study aim and interview design. To analyze the transcriptions thematic analysis has been utilized (Braun and Clarke, 2021). Thematic analysis is a six-step method for analyzing qualitative data, which will be further explained in the next subsection 2.7.

The sixth stage is the 'verification' of the interview results, which seeks to determine the validity, reliability and the generalizability of the interview results. The seventh and last stage is the 'reporting' of the interview transscripts. The reporting of the interview transcripts was done with a narrative approach, where each of the themes were discussed in sequence with frequent involvement of participant quotations.

2.7 Interview Analysis

When transcripts of the interviews had been made data were analyzed by conducting a thematic analysis (Braun and Clarke, 2021). Thematic analysis is a method developed by V. Braun and V. Clarke for qualitative research which can be used to identify codes and themes across a dataset in relation to a research question (Braun and Clarke, 2021). Different approaches of thematic analysis are available, thus the approaches used should be explained and rationalized. A reflexive thematic analysis has been utilized which takes into consideration the subjectivity of the researcher when conducting a thematic analysis and acknowledges the strength of reflection and subjectivity when conducting qualitative research. Furthermore, reflexive thematic analysis contains methodological variations related to the orientation to data, the focus of meaning and the qualitative and theoretical framework. The orientation of data is a mix of deductive and inductive. Deductive methods were used in the design of the interview questions, since they were constructed from existing literature of interviews conducted on cancer patient receiving home treatment. Data gathered from conducting the interviews were analyzed inductively by allowing codes and themes to emerge without consideration to existing knowledge on the topic. The qualitative framework is experiential, since the analysis aims to explore the patients experiences and perceptions of cancer treatment at home (Braun and Clarke, 2021). A common thematic analysis of recorded interview data consists of six steps. The six steps were conducted iteratively to allow for new perspectives in relation to the data to arise:

1. Data familiarization: Transcriptions were conducted, read and re-read while keeping an objective outlook on the data. The second read-through were supplied with notes of interesting or relevant text passages. The transcriptions from each interview were done with the software NVivo 15, which is a software for qualitative data analysis (Jackson and Bazeley, 2019).

2. Initial coding: Text passages that were interesting to investigate further were denoted with codes. Codes could contain explicit (direct information about a specific topic) or implicit (underlying information about a specific topic) information from the text. Codes were given short names relevant to the context of the text passages. The same code could be used on several occasions either in the same interview or across interviews if the text passages denoted the same underlying meaning.

3. Searching for themes: Themes are codes that revolve around the same general idea, while also expressing different outlooks and perspective related to that idea. Codes were sorted and synthesized into themes. Different codes could contain the same theme while several codes can be combined into a single theme.

4. Reviewing themes. The themes constructed from step 3 were revised and changed if necessary; Some themes might be irrelevant while others might be split up into additional themes. Firstly, coded data are read to see if there is a coherent pattern in the themes created. Secondly, the themes were read individually in the context of the text itself. This was done to ensure that the generated themes were coherent with the actual data set, since initial themes were generated by looking at the code labels.

5. Defining and naming themes. Themes will be described in relation to the overall research question and how they can be used to answer the research question. Furthermore, themes are named to most precisely explain the overarching idea. A thematic map was created to show the relationship between themes.

6. Producing the report. In the result section of the project each theme was presented and described with the use of quotations from the interview to function as evidence to the analytic claims. Generally, quotations which conveyed the most detail in relation to the theme were chosen. Parts of a quotation irrelevant to the theme were also removed to show how the quotation support the theme in focus without introducing information irrelevant to the theme. The context of each quotation was explained if necessary.

2.8 Ethics

Interview participants were required to give informed consent since sensitive personal information were gathered. Interview participants were informed orally or through a consent form of the use of personal information (gender, age, family status, health status and interview statements) in the project. A consent form template developed by AAU was used. Furthermore, interview participants were informed that their consent could be withdrawn at any time. The consent form can be found in Danish in Appendix 10.5, 10.6 Raw interview material and transcriptions were stored securely in a Fileshares folder.

3 Results

3.1 Organizational Description

The organizational description of at-home treatment for hematologic cancer patients is partially based on primary literature: The Danish Cancer Society published a report in October 2024 regarding the current home treatment offers for oncologic and hematologic cancer (Bødtcher et al., 2024) More specifically, the report contains information about the specific cancer treatments offered for each hematologic cancer types. The first part of the organizational description will cover the regional differences between cancer treatments (Bødtcher et al., 2024).

There are nine hematologic departments in Denmark; one in the Capital Region of Denmark, Region Zealand and the North Denmark Region, two in the Central Denmark Region and four in the South Denmark Region. Six different treatment types were identified: Immunoglobulin, immune therapy, antibiotics, chemotherapy, parenteral nutrition and hydration. Each hematologic department offers different forms of home cancer treatment. Only Rigshospitalet in the Capital Region of Denmark offers each of the six treatments for at-home treatment. Three of the hospitals in Region South Denmark, Lillebælt Hospital, Hospital of South Denmark and Esbjerg Hospital, offer only antibiotics and immunoglobulin. The remaining departments offer every type of cancer treatment besides hydration (Bødtcher et al., 2024). An overview of the cancer treatment types each hospital offers can be seen in table 3.1.

Of the previously mentioned hematologic cancer treatment types, only immunoglobulins, immune therapy and chemotherapy are delivered subcutaneously (Bødtcher et al., 2024). Immunoglobulins offered are HyQvia and Hyzentra, immune therapy medications offered are daratumumab, blinatumomab and elranatamab and subcutaneous chemotherapy types offered for patients at home are cytarabine, bortezomib and azacitidine. However, there are differences between what treatment is offered based on what hospital (Bødtcher et al., 2024).

Region	Hospital	Medication type
The Capital Region	Rigshospitalet	Antibiotics Immunoglobulin Immune therapy Chemotherapy Parenteral nutrition Hydration
Region Zealand	Zealand University Hospital	Antibiotics Immunoglobulin Immune therapy Chemotherapy Parenteral nutrition Hydration
Central Jutland Region	Aarhus University Hospital	Antibiotics Immunoglobulin Immune therapy Chemotherapy Parenteral nutrition
	Gødstrup Hospital	Antibiotics Immunoglobulin Immune therapy Chemotherapy Parenteral nutrition
South Denmark Region	Odense University Hospital	Antibiotics Immunoglobulin Immune therapy Chemotherapy Parenteral nutrition
	Lillebælt Hospital	Antibiotics Immunoglobulin
	Hospital of Southern Jutland	Antibiotics Immunoglobulin
	Esbjerg Hospital	Antibiotics Immunoglobulin
North Denmark Region	Aalborg University Hospital	Antibiotics Immunoglobulin Immune therapy Chemotherapy Parenteral nutrition

Table 3.1: *An overview of the medication types offered at each hospital unit in each region.*

3.2 Document analysis of Home Treatment Manuals

A document analysis of home treatment manuals for patients receiving at-home cancer treatment was conducted. Through the document analysis manuals were found for the use of daratumumab, azacitidine and bortezomib. The manuals for each of the regions were compared.

3.2.1 Daratumumab

Daratumumab is a CD38 monoclonal antibody sold under the trade name Darzalex in Denmark. It is used for the treatment of myeloma and multiple myeloma (European Medicines Agency, 2025). The North Denmark Region, the Central Denmark Region, the Region of South Denmark and the Capital Region of Denmark each had a home treatment manual for the use of daratumumab (Afdeling for Blodsygdomme, 2024), (Afdeling for Blodsygdomme, 2024), (Odense Universitetshospital Hæmatologisk Afdeling X, 2025), (Rigshospitalet, 2025). When in home treatment with subcutaneous daratumumab in the North Denmark Region patients receive the following from the hospital: A 20 ml syringe, an injection needle with an extension tube, a withdrawal needle, two disinfection swabs, a vial with 1800 mg daratumumab, a set of gloves, transparent film dressing, a cotton ball and a needle box. Additionally, patients in the Central Denmark Region receive a drape for the placement of instruments and a connector. According to the manual for the Region of Southern Denmark patients don't receive gloves, transparent film dressing or a cotton ball. This is not written directly but have been interpreted by the omission of these materials in the text. The illustrations in the manual show all of these materials in use, with the exception of gaze being used instead of a cotton ball. The manual of the Capital Region of Denmark doesn't contain a written list of the materials used in their manual, but contains an illustration of a syringe, an injection needle with an extension tube, a disinfection swab, a transparent film dressing and a cotton ball. Furthermore, the manual illustrates the use of the listed materials on a patient self-delivering daratumumab.

3.2.2 Handling and Administration of Daratumumab

Patients in the Capital Region of Denmark receive a pre-filled syringe at their home address. Thus, the manual doesn't describe the preparation of the syringe. Patients in the North Denmark Region, the Central Denmark Region and the Region of Southern Denmark receive a vial with daratumumab at the hospital. Afterwards, the lid of the vial is removed and the membrane is disinfected with a disinfection swab. A protective lid on the withdrawal needle is removed and the withdrawal needle is pushed through the membrane on the vial. The syringe is attached to the withdrawal needle. As mentioned earlier, this involves a connector in Central Denmark Region. The vial is turned upside down, and the daratumumab is drawn from the vial. In the North Denmark Region, 'at least' 15 ml is drawn, in the Central Denmark Region 15 ml is drawn and in the Region of Southern Denmark there is no specific instruction regarding the volume to be drawn.

The abdominal skin where the injection will be given is disinfected. The North Denmark Region and the Central Denmark Region writes that the injection should be delivered at least 5 cm from the navel, while the Region of Southern Denmark writes at least 7.5 cm and the Capital Region of Denmark writes 7 cm from the

navel. Additionally, the South Denmark Region writes that the injection might be delivered above the hip if the abdominal area is obstructed as in the case of a colostomy bag. After the disinfectant has dried, the protection lid of the needle is removed and the needle is placed in the skin. In the North Denmark Region and the Central Denmark Region, the needle is placed at a 45 degree angle while in the South Denmark Region, the needle is placed at a 90 degree angle. In the Capital Region of Denmark there is no information about the angle which to place the needle at. Afterwards, the syringe is pulled back to ensure no blood is drawn. This is not described in the manual from the Capital Region of Denmark. The injection should be delivered in a time span of 3 to 5 minutes. In North Denmark Region and Central Denmark Region patients are instructed to pause the injection for 30 seconds after delivering 0.5 ml of daratumumab. The Capital Region of Denmark instructs patients to hold a short break after delivering daratumumab for 1 minute, and South Denmark Region does not have any mention of a pause or a break. Afterwards, the needle is slowly removed from the skin and the needle and the syringe are discarded in the needle box. This is not written in the manual from the Region of Southern Denmark (Afdeling for Blodsygdomme, 2024), (Afdeling for Blodsygdomme, 2024), (Odense Universitetshospital Hæmatologisk Afdeling X, 2025), (Rigshospitalet, 2025).

3.2.3 Azacitidine

Azacitidine is a chemotherapeutic agent sold under the trade name Vidaza. It is used to extend survival in patients with AML and MDS (European Medicines Agency, 2024). The North Denmark Region, the Central Denmark Region and the Capital Region of Denmark have patient manuals for the personal at-home use of azacitidine. The Region of Southern Denmark only has a manual for the home nurse (Aalborg Universitetshospital, 2024), (Aarhus Universitetshospital, ndb), (Hæmatologisk Afdeling X, nd), (Rigshospitalet, nda).

Azacitidine is delivered in pre-filled syringes in every region. Before handling the syringes properly the hands should be washed thoroughly. Afterwards, the syringes should be checked to see if the civil registration number and name matches the patients and ensure the medicine hasn't expired. This information is not given in the North Denmark Region. The medicine is then heated to room temperature and the medicine will appear milky-white. The skin is then wiped with a disinfectant swab at the injection place. The Region of Southern Denmark writes that the medicine should be injected in the thigh or in the abdomen at least 2.5 cm from the navel, while the North Denmark Region, the Central Denmark Region and the Capital Region of Denmark writes that it should be injected in the thigh or in the abdomen at least 5 cm from the navel, but each region states that there should be at least 2.5 cm between each injection site. The North Denmark Region also writes that the injection might be delivered in the upper arm. The protection lid is removed and the needle is placed in the skin at an angle of 45-90 degress. The North Denmark Region and the Central Denmark Region writes that the injection angle is agreed with a nurse. Before injecting the medicine the Central Denmark Region and the Capital Region of Denmark writes that the syringe should be pulled back to ensure that the needle isn't in a blood vessel, and if blood enters the syringe it should be discarded. The North Denmark Region instructs to pull the syringe back to reduce skin irritation and the Region of Southern Denmark doesn't mention pulling the syringe back. The azacitidine is injected in a time span of 1 minute or between 1 and 2 minutes in the Central Denmark Region and the Capital

Region of Denmark. When the syringe is emptied it is slowly removed from the skin and discarded in the needle box and a patch or a gaze can be applied. There is no mention of applying a patch or a gaze in the Region of Southern Denmark (Aalborg Universitetshospital, 2024), (Aarhus Universitetshospital, ndb), (Hæmatologisk Afdeling X, nd), (Rigshospitalet, nda).

3.2.4 Bortezomib

Bortezomib is a chemotherapeutic agent given to patients with multiple myeloma and mantle cell lymphoma sold under the trade name Velcade in Denmark (European Medicines Agency, 2020). A public home treatment manual was only found for the Central Region Denmark and the Capital Region of Denmark. Bortezomib is retrieved at the hospital on day 1 and day 8 of a treatment cycle in the Central Denmark Region while it is delivered at home after the first cycle and the first day of the second cycle in the Capital Region of Denmark. When the medicine has been delivered or retrieved the syringes are to be checked to ensure the correct civil registration number, name and that the expiration date hasn't been passed.

3.2.5 Handling and Administration of Bortezomib

Firstly, patients are instructed to wash their hands. Afterwards, the materials are placed on a table: The syringe with bortezomib, a patch, a needle, a disinfectant swab and a needle box. In the Central Denmark Region, a protective cover is placed underneath the materials. The protection lid is removed and the needle is placed on the syringe and the skin is wiped with the disinfectant on the thigh or the abdomen in a 5 x 5 cm area from where the injection will be given. In the Capital Region of Denmark, the skin is wiped before placing the needle on the syringe. If injecting the medicine into the abdominal skin, it has to be at least 5 cm from the navel. A skin fold is made and the needle is placed in the skin at a 45-90 degree angle. In the Central Denmark Region, bortezomib is delivered for a period of approximately 1 minute while in the Capital Region of Denmark it is delivered in between 5 to 10 seconds. Afterwards, the needle is removed and the needle and the syringe is discarded in a needle box (Aarhus Universitetshospital, nda), (Rigshospitalet, ndb).

3.3 Content Analysis of Home Treatment Guidelines

In the following section, the content analysis will be performed focusing on differences between the guidelines across regions.

For daratumumab, the North Denmark Region and Central Denmark Region have very similar written information about the procedures; It appears that one of the guidelines were based on the other. However, the North Denmark Region contains pictures of how to prepare the syringe which the Central Denmark Region does not. Furthermore, the Region of Southern Denmark and the Capital Region of Denmark have illustrations of how to administer the medicine in the abdomen. Since the syringe is delivered pre-filled in the Capital Region of Denmark, this step is not explained in the Capital Region of Denmark. Additionally, the Region of Southern Denmark provided a richer description of each step and also provided suggestions of how to perform some of the

steps. They also have more pictures than the other regional guides.

For azacitidine, the North Denmark Region and the Central Denmark Region also have very similar written information. However, the order in which the information is written is different in some instances. The Capital Region of Denmark has more illustration showing how to perform the steps.

For bortezomib, the Capital Region of Denmark delivered information in numbered steps to follow. Most of the text was the same for the Central Denmark Region and they used the same illustrations besides an illustration in the Capital Region of Denmarks guide where the materials for the home treatment are shown, which did not appear in the guide from the Central Denmark Region. However, the guide was shorter for bortezomib than for the other home treatment options. Furthermore, there was a discrepancy in the length of delivering the medication, where the Central Denmark Region instructs patients to use 1 minute, while Rigshospitalet only states that it should take 5 to 10 seconds, which is a large difference in the time span needed to inject the medicine.

4 Literature Search

A systematic literature search was performed on the 3rd of March, 2025 using the databases PubMed/MEDLINE and Embase. The search on PubMed yielded 326 articles and the search on Embase yielded 1004 articles, adding to a total of 1330 articles. To scan for duplicates and to conduct screening the screening tool Rayyan was used (Ouzzani et al., 2016). The scan identified 623 duplicates, and when a duplicate was encountered the newest and most informative one was kept for further screening. The articles were then screened based on title; The titular eligibility criteria can be seen in appendix **??**. Afterwards, the remaining articles were screened based on their abstracts and finally their full texts. These steps include their own eligibility criteria to ensure the relevancy of the remaining articles. 15 studies remained after screening for title and abstract. (Ang et al., 2016), (Bennich et al., 2022), (Binder et al., 2023), (Cool et al., 2018), (Coolbrandt et al., 2018), (Crisp et al., 2014), (Jang et al., 2022), (Kirkegaard et al., 2022), (Low et al., 2023), (Meenaghan et al., 2010), (Overgaard and Froelund, 2014), (PARK et al., 2023), (Selvathilagan et al., 2019), (Simchowitz et al., 2010), (Viaud et al., 2023). The studies were sought for retrieval where 6 were excluded because only their conference abstracts were available. The 9 remaining articles were read in full text, which further excluded 6 articles.

A flowchart of the screening process can be seen in figure 4.1.

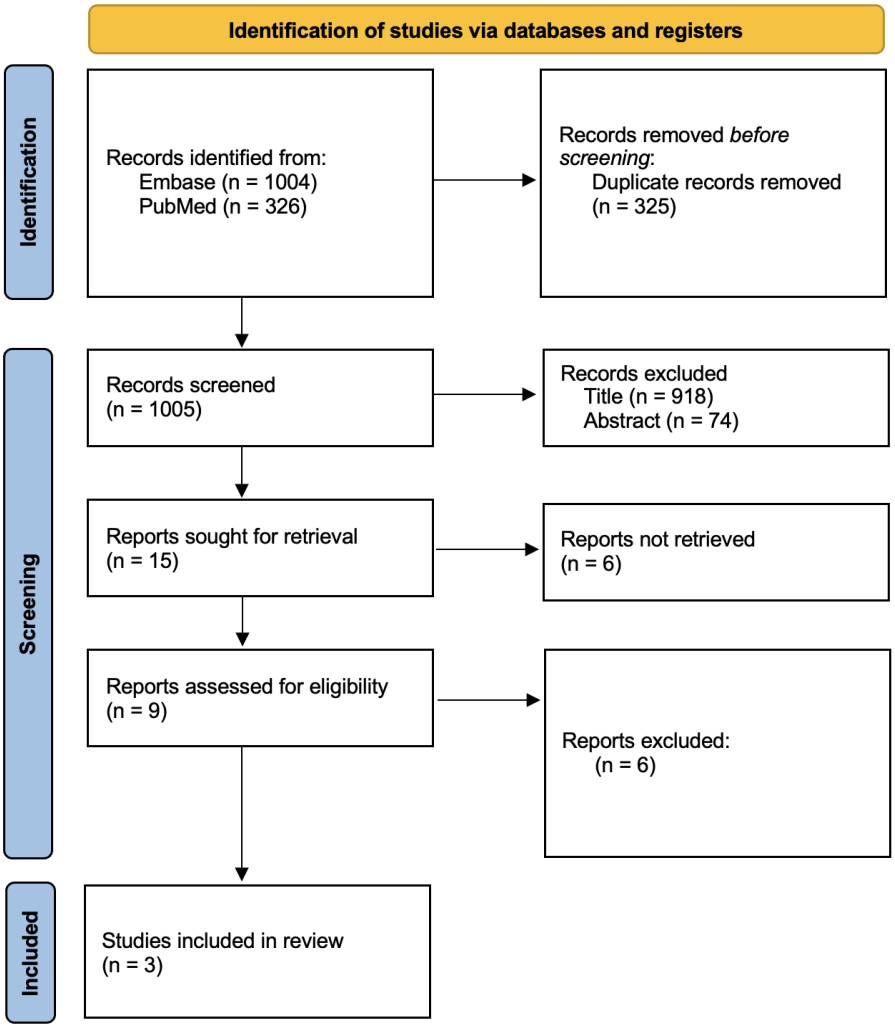

Figure 4.1: *Presentation of the flowchart of the systematic literature search. 1004 studies were identified through Embase and 326 studies identified through PubMed. After removing duplicates, the 1005 remaining studies were screened by title and abstract. 15 studies were sought for retrieval, where 6 were not available in full text. The nine remaining studies were screening by full-text which excluded six articles. Thus, three articles remained and were included in the study review.*

A chain literature search of the three included studies was conducted subsequently in Google Scholar to potentially find additional studies which could be relevant (Crisp et al., 2014), (Bennich et al., 2022), (Jang et al., 2022). This search yielded one study not found in the systematic literature search which was included going forward, which was the study by Kirkegaard et al. (2022) (Kirkegaard et al., 2022).

4.1 Study Characteristics

A total of four studies were included. Two of the studies were carried out in a Danish setting, one in a Canadian setting and one in a South Korean setting. 3 of the included studies conducted interviews of hematologic cancer patients while 1 conducted interviews of both hematologic cancer patients and their main family caregiver. All of the studies used semi-structured interviews to gather patient data, but each study used different methods of analyzing the data gathered from the interviews (Crisp et al., 2014), (Bennich et al., 2022), (Jang et al., 2022), (Kirkegaard et al., 2022). A summary of study characteristics for each of the included studies can be seen in 4.1.

Study author and year	Country	N of participants	Study design
Crisp et al. (2014)	Canada	10 patients	Semi-structured interviews. Data were analyzed using interpretive description.
Bennich et al. (2022)	Denmark	10 participants, 5 patients and 5 family caregivers	Semi-structured dyadic and individual interviews. Data were analyzed using Braun and Clarke's six stages of thematic analysis.
Jang et al. (2022)	South Korea	10 patients	Semi-structured interviews. Data were analyzed by inductive text analysis.
Kirkegaard et al. (2022)	Denmark	10 patients	Semi-structured interviews. Data were analyzed through systematic text condensation.

Table 4.1: *A table of the included studies from the systematic literature search. Country of the participants, number of participants and the study design of each study is listed in the table.*

4.2 Critical Assessment of Included Articles

A critical assessment of the included articles were done the CASP checklist for qualitative studies (Long et al., 2020). Each of the 10 questions can be answered with 'Yes', 'No', or 'Can't tell'. Most of the question were answered with 'Yes'. One of the studies was assigned a 'Can't tell' for question 6 while another one was assigned a 'No' for question 6, which asks "Has the relationship between researcher and participants been adequately considered?". However, none of the studies included by full text were excluded after quality assessment. The completed CASP checklists can be found in Appendix 4.2.

4.3 Interview Design

The interview questions were constructed based on the four studies from the systematic literature search and their research questions. The first part of the interview deals with the starting period of at-home cancer treatment and how being treated at home changed their everyday life. The next part is about their experiences with outpatient treatment. The third part deals with the logistical aspect of their home treatment, asking questions such as how the patients receive their medicine and how they structure their life around the home treatment. The last part is about their training period in delivering cancer treatment and their subsequent contact with the responsible hospital unit. The interview guide can be seen in appendix 10.4.

5 Interview

5.1 Interview and Participant Characteristics

Interviews were conducted with four patients with a diagnosis of hematological cancer currently receiving subcutaneous home treatment. The interviews were conducted between the 7th of April and the 22nd of April. All of the patients were male and between 69 and 71 years of age, with the age of one of the patients being unknown. One of the patients were interviewed at an outpatient unit while the other three were interviewed at their own homes. Two of the patients lived in and were treated at the North Denmark Region while two were lived in and were treated at to the South Denmark Region. The interviews took between 13 and 39 minutes each. The participant characteristics can be seen in figure 5.1.

Patient	Gender	Age	Region	Cancer type
Patient 1	Male	69	North Denmark	AML
Patient 2	Male	71	South Denmark	MM
Patient 3	Male	70	South Denmark	Amyloidosis
Patient 4	Male	Unknown	North Denmark	MM

Table 5.1: *Characteristics of participants in the interviews. The patients are anonymized, but the gender, age, region and their cancer type is listed.*

5.2 Codes and Themes

From the thematic analysis of the four interviews, three themes have been constructed from a range of codes. Each theme will be presented and discussed.

5.2.1 Personal relation to home treatment

All of the interviewed patients had received hospital treatment for their cancer for a period before beginning home treatment. Some were treated for their cancer for months while others had been treated for years before

they had the opportunity to be treated at home. The patients interviewed experienced the shift from outpatient treatment to home treatment as technically quite easy. When asked whether the training period for performing the home treatment was long, one patient answered:

"*No, i had seen how the treatment took place so I just had to remember that and ... i received some learning material to take home but i haven't used it because i saw how they did and so I just imitated them* (the nurses)" Patient 3

This also reflects the personal engagement of the patient and how this helps them in performing the home treatment. When asked directly, all of the patients told that their training period only consisted of one session and that all of the following injections were performed by the patient in their own home. When asked whether the training period consisted of multiple or one session, one patient answered:

"*No, just a single time, so i suppose they have great trust in me*" Patient 2.

The last remark emphasizes that the patients might feel entrusted to be able to perform their treatment at home. Furthermore, all of the interviewed patients told they administer the medicine independently, despite it not being a prerequisite for receiving home treatment that the patient themselves deliver the treatment; as long as a family caregiver or a home nurse is able to deliver it. This trust could also be built from the communication with the health care professionals responsible for the treatment course.

5.2.2 Relation to health care professionals

Since the interviewed patients have received their cancer treatment at a hospital for up to twelve years, they have formed a relation with the health care professionals working there. The patients generally receive care from the same doctor but from different nurses. However, they still feel that they know the health care professionals well and one of the patients described situations where the nurses at the hospital gave special attention to the well-being of the patient, both in regard to their physical health and their mood. The same patient states that the shift to at-home treatment had been very comfortable due to being introduced by a nurse which he had a good relation to. Another patient said the following about his communication with the health care professionals:

"*I communicate well with them* (the HCP's) *... I have never felt that they were tired of using time on me, on the contrary, but they are spared from me taking time out there* (at the hospital) *that I could do at home.*" Patient 3

This shows that the patient is aware of the need for relieving the hospital of less acute admittances which might lead to a higher degree of willingness to make the shift to at-home treatment. None of the patients interviewed had experienced a situation where they had to contact the hospital due to difficulties with administering the medication or side effects related to the medication. This could indicate that the patients generally feel that they know how to handle and administer their medication. Additionally, they might only face minor issues which

can be resolved at their next visit, as patients in at-home treatment still have regular visits to their respective outpatient units. For example, one patient said that he wanted the nurses to administer the medication when he was at the hospital anyways, because

"*... I might pick up on something i missed the first couple of times*" Patient 2.

This emphasizes the eagerness to learn about doing the home treatment correctly and learning more about how to do it more effectively. This could stem from the increased autonomy of treatment, where the patient cannot rely on the expertise of health care professionals.

5.2.3 Logistics of Home Treatment

The patients generally administer the subcutaneous cancer treatment at a specific time of the day, either in the morning or in the early afternoon. A couple of the patients described that they wait for a telephone call in the morning from the hematologic unit before they administer their cancer treatment. Thus, the patients need to set aside a specific time in concordance with the hospital unit to deliver the medicine. One of the other patients told that he did not wait for a telephone call from the hematologic unit before administering unit and simply ensured that the medicine was delivered at the same time each day in the treatment cycle. The time spent and the rigidity of the treatment delivery time generally weren't an issue for the patients but the patients variably expressed difficulties with the need to go to the hospital. One patient received outpatient treatment for cancer related complications, and had to quit his part time job due to the time spent on the treatment. In regards to the outpatient treatment he said the following

"*...it is like having a job. If i had a job here at the hospital it would be about the same.*" Patient 1

This depicts the time used on transport and the treatment itself, despite the patient using a car to get to the hospital. Another patient felt dissatisfied with driving to the hospital to perform a blood test since the blood test could easily be performed at and delivered from the nearby general practitioner to the hospital. Prior experience with injections might also influence the patients experience with delivering medication at home. One patient said the following:

"*I used to be a farmer and had pigs for many years, and they get injections frequently ... so i am used to work with a needle.*" Patient 1.

Another patient experienced discomfort with the needle, saying this:

"*... the thing with looking at the needle is, watch where you put it and then jab, don't begin to think about it. That doesn't make it easier*" Patient 2.

These two quotes exemplify the differences between patients when it comes to their relationship with the treatment procedure. The patients might also feel that there is something bigger at play and have awareness of the disease severity. When asked whether the side effects of the cancer medication were manageable, one patient stated:

"*The alternative isn't so good ... then i would prefer to take the medicine*" Patient 1.

This statement suggests that the medication and the delivery method of the medicine is less important to the patient, since the severity of the disease is of more importance, thus possibly making the patients more cooperative and less focused on the possible difficulties and side effects related to the medicine.

6 Discussion

The aim of the study was to investigate hematologic cancer patients perspective and experiences with self-delivering subcutaneous cancer treatment at home. The discussion section will be split into three parts where each part will deal with each substudy.

6.1 Organizational analysis

An analysis of the organizational structure of the at-home treatment was conducted by performing a qualitative content analysis of patient guidelines for the handling and administration of subcutaneous cancer treatment at home. Patient guidelines were identified by searching for relevant keywords in a search engine. Home treatment guidelines for daratumumab, azacitidine and bortezomib were identified.

The framework of the organizational analysis was the study 'Document Analysis as a Qualitative Research Method' by Bowen (2009) (Bowen, 2009). The study is a very basic guide to conducting document analysis and highlights the advantages and limitations of document analysis. The document analysis was conducted to gain insight into regional differences between at-home treatment practices (Bowen, 2009). The document analysis finds some differences between treatment guidelines for hematologic cancer patients admitted to at-home treatment. To what extent patients rely on information from the written guidelines are unknown. One of the patients interviewed mentioned that he received a pamphlet from the hospital with home treatment instructions which he had never used because he was certain of how to perform the treatment. Additionally, whether the information received in the training period is identical to the regional guidelines is unknown. However, this document analysis shows that there are significant differences between the resources available for patients across regions which might lead to different treatment outcomes if patients rely on information from the treatment guidelines. The document analysis is a relatively time-efficient method of analyzing organizational practices (Bowen, 2009). The organizational analysis might have benefited from more in-depth knowledge acquisition by e.g. contacting health care professional with more practical knowledge of the at-home treatment pathway and the selection of patients eligible for at-home treatment. Furthermore, there might be documents not available to the public which could be identified by consulting the regional department.

6.2 Systematic literature search

A systematic literature search was conducted to identify current knowledge of hematologic cancer patients experiences with at-home treatment and to expand on the knowledge by designing interview questions to ask for a similar patient group in a Danish context based on the systematic literature search. The systematic literature search benefited from being conducted in collaboration with a librarian to achieve a high quality search and include all studies relevant to the study aim. A study by Pawliuk et al. (2024) shows that involving a librarian in a systematic review results in a higher quality assessment score (Pawliuk et al., 2024). The effect was most pronounced when including a librarian as a co-author, but even just consulting a librarian throughout the sys-

tematic literature search process was associated with an increase in quality (Pawliuk et al., 2024). Furthermore, a critical appraisal of the included studies was conducted which contributes to study transparency by assessing the validity and relevance of the studies included by full-text.

There are some limitations to the systematic literature search. The screening process was conducted by a single reviewer. Thus, the screening process did not benefit from being dual-reviewed which otherwise might have resulted in more eligible studies being included and a more rigorous screening process (Stoll et al., 2019). However, the inclusion of an additional reviewer would require that the reviewer had a good understanding of the project beforehand, which would be very resource-demanding. Furthermore, it could be argued that the effect of single-reviewing studies could be offset by erring on the side of inclusion when reviewing studies.

Two of the included studies were from Denmark, while one was from Canada and another was from South Korea. The cultural differences between Denmark and these countries might lead to different experiences to at-home treatment and thus different themes identified from the interviews conducted. However, the inclusion of international studies have aided with identifying additional patient perspectives which have helped understanding the field better and thus contributing with more perspectives to be used when conducting the thematic analysis. Furthermore, the studies included differed by not only interviewing patients with hematological cancer but also oncological cancer. However, studies with oncological cancer patients were included since there were limited research focusing exclusively on hematologic cancer patients. Additionally, it was decided on the basis of the information search that the at-home treatment of oncological cancer would be the same as that of hematologic cancer patient. The only differences would be the type of medicine used in the treatment.

Through the systematic literature search, a study by Witwaranukool et al. (2024) was identified which aim was to synthesize and critically appraise studies that investigate the perception and experiences of cancer patients receiving home-based chemotherapy (Witwaranukool et al., 2024). Their search strategy was available in the appendix. The search strategy created in PubMed in this study was compared to the search strategy of the study from Witwaranukool et al. (2024) and only 13 studies were present in both studies, indicating only a very narrow study overlap. Thus, it was decided to implement search terms from the study protocol by Witwaranukool et al. (2024) to optimize the search strategy and to include more relevant search terms. It should be noted that the study by Witwaranukool et al. (2024) only seeks to investigate patients receiving intravenous chemotherapeutic cancer treatments at home, thus their eligibility criteria for the systematic literature search will be different and thus different studies will be chosen for inclusion (Witwaranukool et al., 2024).

There are some differences between the population included in the studies from the literature search and the population of this study. The included studies were not limited to hematologic cancer patients; oncological cancer patients were also included. Furthermore, one of the studies also include the experiences and perceptions of caregivers of cancer patients. These were chosen to be included due to the limited number of studies on the field. Thus, the most important purpose of the systematic literature search was to identify studies investigating

the experiences and perceptions of cancer patients receiving at-home treatment, which is a common denominator in all of the included studies.

6.3 Interview

Interviews were conducted with hematologic cancer patients at the outpatient unit or in their own homes to investigate their experiences and perceptions of receiving at-home cancer treatment. An interview guide was created based on the systematic literature search, interviews were conducted orally and data were transcribed and analyzed using thematic analysis.

The recruitment was conducted through correspondence with project nurses at each regional hematological unit. Every hematological unit expressed a wish to recruit patients expect for Central Denmark Region who responded that they had limited time to recruit but only North Denmark Region and South Denmark Region were able to recruit eligible participants before the end of the study period. This process of participant recruitment through regional hospital departments affected the number of participants able to be interviewed. Patients with hematologic cancer receiving home treatment is a very limited group and many of the patients might be too ill to be able or not interested in conducting an interview. Contrary, the patients receiving home treatment might be in better health than patients only receiving ambulatory treatment. This should be taken into consideration when interpreting the interview results, as there likely is a large bias in who receives at-home cancer treatment, favoring independent patients and those interested in receiving home treatment. Interviews with nurses or doctors at the regional hematologic units who decide which patients should receive at home treatment could support future decision making and help to identify how to make at home treatment more favorable for hematologic cancer patients not currently receiving at home treatment.

Of the four patients recruited and interviewed, all were elderly men. This might reflect that hematologic cancer is slightly more common in men than women and that the sample size is very low (n = 4). (Larønningen et al., 2025a). Furthermore, hematologic cancer incidence increases with age, rising sharply from age 60 (Larønningen et al., 2025a). Patients were to be recruited until data saturation was met. Data saturation of a qualitative study depends on the information power of a sample, and a study by Malterud et al. (2015) was used to evaluate the information power (Malterud et al., 2016). The study aim can be considered broad since the experiences and perspectives of receiving at home cancer treatment encompasses a very broad field with very different patient viewpoints (Malterud et al., 2016). Furthermore, the inexperience with conducting semi-structured interviews and having no prior relationship with the patients might also affect the information that the patients share irregardless of the questions asked. The broad study aim and the limited experience with conducting interviews suggests that a larger sample size would be needed to reach data saturation (Malterud et al., 2016).

Additionally, the personality of each patient affects how they respond to each question. One of the questions in the interview guide was: 'How did starting home treatment affect your everyday life?'. The answer to such a broad question depends on the reflexivity of the patient and how comfortable the patient is with sharing personal

information with a stranger (McGrath et al., 2018). This highlights the importance of designing the interview and the methods applied based on the population interviewed. The interview guide could have benefited from including more in-depth theoretical knowledge about the patient group to be interviewed and possibly a more lengthy interview to create a relationship with the interviewed participants (McGrath et al., 2018). This would also cause the transcriptions to be considerably longer and thus more time-consuming to process.

The transcriptions were conducting manually using verbatim transcription. Thus, the transcriptions benefit from possibly being more information rich than a non-verbatim transcription would have been though non-verbal information is lost when using standard verbatim transcription. Non-verbal information such as facial expressions, gesticulations and vocal pitch could have supported the thematic analysis by giving more nuances to the patients perceptions while interviewing. However, this would require video recordings and also be vastly more time consuming for potentially limited additional information for the thematic analysis.

A thematic analysis was conducted of the transcriptions, which is one of the several methods to generate knowledge of personal experiences. The interview benefit from a thematic analysis since it provides a framework for developing information from the interview data, which improves transparency of the analytical approach. (Braun and Clarke, 2021) Furthermore, thematic analysis benefits from being a flexible and more accessible approach to qualitative research. Thus, a thematic analysis is a reasonable method when beginning with conducting qualitative research (Nowell et al., 2017). The thematic analysis was, like the rest of the project, conducted by a single analyzer. Thus, the codes and themes developed should be subject to scrutiny as the discussion of the development of the codes and themes have been limited. Furthermore, it is important to highlight that a thematic analysis is a subjective approach to data, where other analyzers might develop different themes and codes from the same transcripts Because of the subjectivity of thematic analysis, the process of developing themes and codes should be supported with evidence to each analytic claim, with has been done in the result section. Themes are generally conducted based on the codes developed from several participants and not just one. Thus, having only interviewed four patients might make the thematic analysis more sensitive to different experiences and perspectives of the patients in relation to the questions asked.

A similar study was conducted, which also investigated the experiences and perceptions of hematologic cancer patients receiving subcutaneous at home treatment in a Danish context by Kirkegaard et al. (2022) (Kirkegaard et al., 2022). The study focuses specifically on multiple myeloma patients receiving subcutaneous bortezomib as their home treatment. Additionally, the study by Kirkegaard et al. (2022) measured the costs associated with administrating medicine at home versus in the outpatient unit (Kirkegaard et al., 2022). A Korean study by Kim et al. (2022) investigated the cost-utility of home-based hospice palliative care for cancer patient compared with outpatient palliative care. Investigating the cost-effectiveness of performing hematologic cancer treatment at home in a Danish setting with decision analytic modeling techniques could be relevant when considering the feasibility of at home cancer treatment, since decision analytic modeling allows for the incorporation of multiple sources of evidence and the assessment of uncertainties through sensitivity analysis (Drummond et al., 2015).

7 Conclusion

This study sought to explore the organizational structure of at-home hematologic cancer treatment and the experiences and perceptions of hematologic cancer patients receiving subcutaneous at-home treatment. This was done by conducting a document analysis of regional guidelines for subcutaneous cancer treatment at home, a systematic literature search of semi-structured interviews investigating the expectations and perspectives of cancer patients receiving treatment at home and a semi-structured interview of hematologic cancer patients receiving treatment at home. The document analysis found home treatment guidelines for daratumumab, azacitidine and bortezomib, with some guideline differences between regions. The systematic literature search resulted in four studies of high quality investigating the experiences and perceptions of cancer patients receiving treatment at home. The semi-structured interview was conducted on four hematologic cancer patients and three themes were generated from the interviews: 'Personal relation to home treatment', 'Relation to health care professionals' and 'Logistics of home treatment'. This study serves as preliminary research about the differences in the current guidelines for hematologic cancer patient and an investigation of the experiences and perceptions of hematologic cancer patients retrieving at-home treatment in Denmark.

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Larønningen, S., Arvidsson, G., Bray, F., Dahl-Olsen, E., Engholm, G., Ervik, M., Gumundsdóttir, E., Gulbrandsen, J., Hansen, H., Johannesen, T., Kristensen, S., Kristiansen, M., Kønig, S., Lam, F., Laversanne, M., Lydersen, L., Malila, N., OM, M., Miettinen, J., Pejicic, S., Petterson, D., Skog, A., Stein, B., Tian, H., Aagnes, B., and Storm, H. (2025b). Crude rate per 100 000, incidence, both sexes malignant haematopoietic diseases + non hodgkin lymphomas + hodgkin lymphomas + multiple myelomas + myelodysplastic syndromes + myeloproliferative diseases + other haematopoietic diseases + leukaemias + acute lymphatic leukaemias + chronic lymphatic leukaemias + other and unspecified lymphatic leukaemias + acute myeloid leukaemias + chronic myeloid leukaemias + other and unspecified myeloid leukaemia + leukaemia, cell unspecified.

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9 Appendix

10 Systematic Literature search

10.1 PubMed Search String

(((((("Neoplasms"[Mesh]) OR (cancer*[Title/Abstract] OR neoplasm*[Title/Abstract] OR malignan*[Title/Abstract] OR tumor*[Title/Abstract] OR tumour*[Title/Abstract])) OR (leukemi*[Title/Abstract] OR leukaemi*[Title/Abstract] OR myeloma*[Title/Abstract] OR lymphoma*[Title/Abstract] OR hematol*[Title/Abstract] OR haematol*[Title/Abstract])) AND ((((("Antineoplastic Agents"[Mesh] OR "drug therapy" [Subheading]) OR ("Cytarabine"[Mesh] OR "Bortezomib" [Mesh] OR "Azacitidine"[Mesh])) OR (chemotherap*[Title/Abstract] OR antineoplastic agent*[Title/Abstract])) OR (cytarabine[Title/Abstract] OR bortezomib[Title/Abstract] OR azacitidine[Title/Abstract]))) AND ((((((("home based chemotherap*"[Title/Abstract] OR "home based oral chemotherap*"[Title/Abstract] OR "homebased chemotherap*" [Title/Abstract] OR "homebased oral chemotherap*"[Title/Abstract] OR "home based infusion*"[Title/Abstract] OR "homebased infusion*"[Title/Abstract] OR "home based administration*"[Title/Abstract] OR "homebased administration*"[Title/Abstract] OR "home based treatment*"[Title/Abstract] OR "homebased treatment*" [Title/Abstract]) OR ("at home chemotherap*"[Title/Abstract] OR "at home infusion*"[Title/Abstract] OR "at home treatment*"[Title/Abstract] OR "at home administration*"[Title/Abstract] OR at-home management[Title/Abstract])) OR ("hospital at home"[Title/Abstract] OR "chemotherapy at home"[Title/Abstract] OR "treatment at home" [Title/Abstract] OR "administration at home"[Title/Abstract])) OR ("home chemotherap*"[Title/Abstract] OR "home infusion*"[Title/Abstract] OR "home treatment*"[Title/Abstract] OR "home administration*"[Title/Abstract] OR "home care setting"[Title/Abstract])) OR ("domestic chemotherap*"[Title/Abstract] OR "domestic infusion*"[Title/Abstract] OR "domestic treatment*"[Title/Abstract] OR "domestic administration*"[Title/Abstract])) OR ("domicil* chemotherap*"[Title/Abstract] OR "domicil* infusion*"[Title/Abstract] OR "domicil* treatment*"[Title/Abstract] OR "domicil* administration*"[Title/Abstract]))) OR ((((((((("neoplasms"[MeSH]) OR ("cancer*"[Title/Abstract])) OR ("neoplasm*"[Title/Abstract])) OR ("tumo*"[Title/Abstract])) OR ("malign*"[Title/Abstract])) OR ("oncolog*" [Title/Abstract])) AND (((((("Antineoplastic Agents"[Mesh]) OR ("chemotherap*"[Title/Abstract])) OR ("antineoplastic agent*"[Title/Abstract]))) OR ("drug therapy"[Mesh])) OR ("drug therapy*"))) AND ("home environment" [MeSH] OR home [MeSH] OR "hospital at home" [MeSH] OR "hospital in the home" [MeSH] OR "own home*" [MeSH] OR "home care" [MeSH] OR "home infusion therapy"[Mesh] OR "home based chemotherap*"[Title/Abstract] OR "home based oral chemotherap*"[Title/Abstract] OR "homebased chemotherap*"[Title/Abstract] OR "homebased oral chemotherap*" [Title/Abstract] OR "home based infusion*"[Title/Abstract] OR "homebased infusion*"[Title/Abstract] OR "home based administration*"[Title/Abstract] OR "homebased administration*"[Title/Abstract] OR "home based treatment*" [Title/Abstract] OR "homebased treatment*"[Title/Abstract] OR "at home chemotherap*"[Title/Abstract] OR "at home infusion*"[Title/Abstract] OR "at home treatment*"[Title/Abstract] OR "at home administration*"[Title/Abstract] OR at-home management[Title/Abstract] OR "hospital at home"[Title/Abstract] OR "chemotherapy at home" [Title/Abstract] OR "treatment at home"[Title/Abstract] OR "administration at home"[Title/Abstract] OR "home chemotherap*"[Title/Abstract] OR "home infusion*"[Title/Abstract] OR "home treatment*"[Title/Abstract] OR "home administration*"[Title/Abstract] OR "home care setting"[Title/Abstract] OR "domestic chemotherap*"[Title/Abstract] OR "domestic infusion*"[Title/Abstract] OR "domestic treatment*"[Title/Abstract] OR "domestic administration*" [Title/Abstract] OR "domicil* chemotherap*"[Title/Abstract] OR "domicil* infusion*"[Title/Abstract] OR "domicil* treatment*"[Title/Abstract] OR "domicil* administration*"[Title/Abstract] OR "home administration*"[Title/Abstract] OR "home care setting"[Title/Abstract] OR "home cancer care"[Title/Abstract] OR "home environment" [Title/Abstract] OR home [Title/Abstract])) AND (qualitative* [MeSH] OR interview* [MeSH] OR "focus group" [MeSH] OR "mixed method*" [MeSH] OR qualitative* [Title/Abstract] OR interview*[Title/Abstract] OR narrative*[Title/Abstract] OR "mixed method*" [Title/Abstract])) AND (("experience*" [Title/Abstract] OR "percep*"[Title/Abstract] OR "perceive*" [Title/Abstract]) OR ("subjective*"[Title/Abstract]))) Filters: from 2010 – 2025

10.2 Embase Search String

('neoplasm'/exp OR 'cancer*':ti,ab,kw OR 'neoplasm*':ti,ab,kw OR 'malignan*':ti,ab,kw OR 'tumor*':ti,ab,kw OR 'tumour*':ti,ab,kw OR 'leukemi*':ti,ab,kw OR 'leukaemi*':ti,ab,kw OR 'myeloma*':ti,ab,kw OR 'lymphoma*':ti,ab,kw OR 'hematol*':ti,ab,kw OR 'haematol*':ti,ab,kw) AND ('antineoplastic agent'/exp OR 'drug therapy' OR 'cytarabine'/exp OR 'bortezomib'/exp OR 'azacitidine'/exp OR 'chemotherap*':ti,ab,kw OR 'antineoplastic agent*':ti,ab,kw OR 'cytarabine':ti,ab,kw OR 'bortezomib':ti,ab,kw OR 'azacitidine':ti,ab,kw) AND ('home based chemotherap*':ti,ab,kw OR 'home based oral chemotherap*':ti,ab,kw OR 'homebased chemotherap*':ti,ab,kw OR 'homebased oral chemotherap*':ti,ab,kw OR 'home based infusion*':ti,ab,kw OR 'homebased infusion*':ti,ab,kw OR 'home based administration*':ti,ab,kw OR 'homebased administration*':ti,ab,kw OR 'home based treatment*':ti,ab,kw OR 'homebased treatment*':ti,ab,kw OR 'at home chemotherap*':ti,ab,kw OR 'at home infusion*':ti,ab,kw OR 'at home treatment*':ti,ab,kw OR 'at home administration*':ti,ab,kw OR 'at-home management':ti,ab,kw OR 'hospital at home':ti,ab,kw OR 'chemotherapy at home':ti,ab,kw OR 'treatment at home':ti,ab,kw OR 'administration at home':ti,ab,kw OR 'home chemotherap*':ti,ab,kw OR 'home infusion*':ti,ab,kw OR 'home treatment*':ti,ab,kw OR 'home administration*':ti,ab,kw OR 'home care setting':ti,ab,kw OR 'domestic chemotherap*':ti,ab,kw OR 'domestic infusion*':ti,ab,kw OR 'domestic treatment*':ti,ab,kw OR 'domestic administration*':ti,ab,kw OR 'domicil* chemotherap*':ti,ab,kw OR 'domicil* infusion*':ti,ab,kw OR 'domicil* treatment*':ti,ab,kw OR 'domicil* administration*':ti,ab,kw) OR (('neoplasm'/exp OR 'cancer*':ti,ab,kw OR 'neoplasm*':ti,ab,kw OR 'tumo*':ti,ab,kw OR 'malign*':ti,ab,kw OR 'oncolog*':ti,ab,kw) AND ('antineoplastic agent'/exp OR 'chemotherap*':ti,ab,kw OR 'antineoplastic agent*':ti,ab,kw OR 'drug therapy'/exp OR 'drug therapy*') AND ('home environment'/exp OR 'home'/exp OR 'hospital at home'/exp OR 'hospital in the home' OR 'own home*' OR 'home care'/exp OR 'home infusion therapy'/exp OR 'home based chemotherap*':ti,ab,kw OR 'home based oral chemotherap*':ti,ab,kw OR 'homebased chemotherap*':ti,ab,kw OR 'homebased oral chemotherap*':ti,ab,kw OR 'home based infusion*':ti,ab,kw OR 'homebased infusion*':ti,ab,kw OR 'home based administration*':ti,ab,kw OR 'homebased administration*':ti,ab,kw OR 'home based treatment*':ti,ab,kw OR 'homebased treatment*':ti,ab,kw OR 'at home chemotherap*':ti,ab,kw OR 'at home infusion*':ti,ab,kw OR 'at home treatment*':ti,ab,kw OR 'at home administration*':ti,ab,kw OR 'at-home management':ti,ab,kw OR 'hospital at home':ti,ab,kw OR 'chemotherapy at home':ti,ab,kw OR 'treatment at home':ti,ab,kw OR 'administration at home':ti,ab,kw OR 'home chemotherap*':ti,ab,kw OR 'home infusion*':ti,ab,kw OR 'home treatment*':ti,ab,kw OR 'domestic chemotherap*':ti,ab,kw OR 'domestic infusion*':ti,ab,kw OR 'domestic treatment*':ti,ab,kw OR 'domestic administration*':ti,ab,kw OR 'domicil* chemotherap*':ti,ab,kw OR 'domicil* infusion*':ti,ab,kw OR 'domicil* treatment*':ti,ab,kw OR 'domicil* administration*':ti,ab,kw OR 'home administration*':ti,ab,kw OR 'home care setting':ti,ab,kw OR 'home cancer care':ti,ab,kw OR 'home environment':ti,ab,kw OR 'home':ti,ab,kw) AND ('qualitative*' OR 'interview*' OR 'focus group'/exp OR 'mixed method*' OR 'qualitative*':ti,ab,kw OR 'interview*':ti,ab,kw OR 'narrative*':ti,ab,kw OR 'mixed method*':ti,ab,kw) AND ('experience*':ti,ab,kw OR 'percep*':ti,ab,kw OR 'perceive*':ti,ab,kw OR 'subjective*':ti,ab,kw)) AND (**2010**:py OR **2011**:py OR **2012**:py OR **2013**:py OR **2014**:py OR **2015**:py OR **2016**:py OR **2017**:py OR **2018**:py OR **2019**:py OR **2020**:py OR **2021**:py OR **2022**:py OR **2023**:py OR **2024**:py OR **2025**:py)

10.3 Critical Assessment

10.3.1 Critical Assessment of Crisp et al. (2014)

CASP Checklist:
For Qualitative Research

Reviewer Name:	Jakob Justinussen
Paper Title:	Chemotherapy at home: Keeping patients in their "natural habitat"
Author:	Nicole Crisp, Priscilla M. Koop, Karen King, Wendy Duggleby, Kathleen F. Hunter
Web Link:	https://www.researchgate.net/publication/262926908_Chemotherapy_at_home_Keeping_patients_in_their_natural_habitat/fulltext/60b973fea6fdcc22ead3c7b6/Chemotherapy-at-home-Keeping-patients-in-their-natural-habitat.pdf?origin=publication_detail&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uRG93bmxvYWQiLCJwcmV2aW91c1BhZ2UiOiJwdWJsaWNhdGlvbiJ9fQ&__cf_chl_tk=dwFhlbLcNi5rhBz5W3X6YENatrxxuDFzkfk2.5dFmIA-1742372870-1.0.1.1-Igv7plxHG0lhKwAOXjFasT1PpgYS8dvCZh50mjRZ1vc
Appraisal Date:	20-03-2025

Section A Are the results valid?	
1. Was there a clear statement of the aims of the research?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *what was the goal of the research?* • *why was it thought important?* • *its relevance*	
2. Is a qualitative methodology appropriate?	☒ Yes ☐ No ☐ Can't Tell "The study was qualitative in design, utilizing interpretive description (Thorne, Reimer-Kirkham, & MacDonald-Emes, 1997). This method is particularly useful for exploring clinical situations in which the research results can be applied to improving clinical practice in a timely manner. Interpretive Description is grounded in an interpretive orientation that acknowledges the constructed and contextual nature of the health illness experience, yet also allows for shared realities"
CONSIDER: • *If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants* • *Is qualitative research the right methodology for addressing the research goal?*	
3. Was the research design appropriate to address the aims of the research?	☒ Yes ☐ No ☐ Can't Tell The aims of the research were to: "Identify patients' perceptions of their experiences with home chemotherapy Identify patients' perceptions of their family members' experiences with home chemotherapy Explore insights into how chemotherapy treatments might be improved Generate hypotheses for future quantitative and qualitative research" For this, interviews were made to identify patients perception of home chemotherapy treatment.
CONSIDER: • *if the researcher has justified the research design (e.g., have they discussed how they decided which method to use)*	
4. Was the recruitment strategy appropriate to the aims of the research?	☒ Yes ☐ No ☐ Can't Tell "After the ethics review was obtained, patients were contacted by telephone and approached during clinic visits by nurses. If the patient expressed interest in participating, they were contacted by the primary author to provide further details about the study and to arrange a time for an interview." "Interviews were completed in the patients' homes and at a large cancer care facility in western Canada, using semi-structured questions. The primary author conducted all

	interviews. Interviews were audio taped and transcribed verbatim."
CONSIDER: • *If the researcher has explained how the participants were selected* • *If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study* • *If there are any discussions around recruitment (e.g. why some people chose not to take part)*	
5. Was the data collected in a way that addressed the research issue?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the setting for the data collection was justified* • *If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)* • *If the researcher has justified the methods chosen* • *If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)* • *If methods were modified during the study. If so, has the researcher explained how and why* • *If the form of data is clear (e.g. tape recordings, video material, notes etc.)* • *If the researcher has discussed saturation of data*	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes ☐ No ☒ Can't Tell
CONSIDER: • *If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location* • *How the researcher responded to events during the study and whether they considered the implications of any changes in the research design*	
Section B: What are the results?	
7. Have ethical issues been taken into consideration?	☒ Yes ☐ No ☐ Can't Tell Approval was sought and received from the ethics committee "Randomization into the program was not used and participation in the pilot project was strictly voluntary. Patient selection criteria and a treatment protocol list, consisting of basic infusional chemotherapy, were developed with the input of medical oncologists. A full assessment of the patient and his/her home was completed before the patient was admitted to the program in order to ensure the safety of both the patients and staff. The treatment was administered by oncology nurses who had been given additional home care education." The researcher did not discuss issues raised by the study itself, however.

CONSIDER: • *If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained* • *If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)* • *If approval has been sought from the ethics committee*	
8. Was the data analysis sufficiently rigorous?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If there is an in-depth description of the analysis process* • *If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data* • *Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process* • *If sufficient data are presented to support the findings* • *To what extent contradictory data are taken into account* • *Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation*	
9. Is there a clear statement of findings?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the findings are explicit* • *If there is adequate discussion of the evidence both for and against the researcher's arguments* • *If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)* • *If the findings are discussed in relation to the original research question*	
Section C: Will the results help locally?	
10. How valuable is the research?	☒ Yes ☐ No ☐ Can't Tell "The demand for quality cancer care continues to grow. Traditionally, many people argue that chemotherapy is best given in the hospital setting, but this research demonstrates that there are several reasons why we should consider moving cancer treatment into patients' homes. Patients are often forced to fit the current health care system, rather than being permitted flexibility. Cancer can be a chronic illness, one that can take years of treatment. The loss of control that patients experience is often frustrating, depressing and wearisome for them. As healthcare providers, we must keep maximum focus on meeting the needs of our patients. By keeping daily life as normal as possible, and creating that "natural habitat", we allow individuals to enjoy the life that is extended or preserved by receiving chemotherapy. This promotes the goals of quality that most health care providers possess" "Anxiety and depression rates among cancer patients remain shockingly rampant, and it could be hypothesized that home chemotherapy might

	improve these figures. This is an area to be addressed by future research." "Improved care provision and reception was also described as a key component of the experience of receiving treatment at home. Participants thought they were more likely to remember to ask questions and to remember the answers provided than if they had been in the clinic setting. The participants felt better prepared to receive treatment, knew what to expect, and knew when it was important to seek help. It is possible that this may have resulted in fewer calls to triage nurses, saving time and hospital resources. These would be valuable indicators to measure in future evaluations of home chemotherapy programs."

CONSIDER:

- *If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g., do they consider the findings in relation to current practice or policy, or relevant research-based literature*
- *If they identify new areas where research is necessary*
- *If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used*

APPRAISAL SUMMARY: *List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.*

Positive/Methodologically sound	**Negative/Relatively poor methodology**	**Unknowns**
Generally, a very solid description of methods used and especially of the findings.	Not that much information about the ethical aspect of conducting research on cancer patienter. However, there are extensive exclusion and inclusion criteria to ensure patient safety.	

10.3.2 Critical Assessment of Bennich et al. (2022)

CASP Checklist:
For Qualitative Research

Reviewer Name:	Jakob Justinussen
Paper Title:	The significance of home-based portable pump chemotherapy for family caregivers to newly diagnosed patients with acute myeloid leukemia: A qualitative thematic analysis
Author:	Birgitte Bøcher Bennich, Hanne Konradsen, Toni P Renaberg, Jannie Boesen, Gitte Wind
Web Link:	https://www.ejoncologynursing.com/article/S1462-3889(22)00108-9/fulltext
Appraisal Date:	20-03-2025

Section A Are the results valid?	
1. Was there a clear statement of the aims of the research?	☒ Yes ☐ No ☐ Can't Tell "The study aims to explore the significance of home-based PPP chemotherapy for family caregivers of newly diagnosed patients with AML. The research question is: Do the participating patients with AML and their family caregivers experience that home-based PPP therapy increases, decreases, or makes little difference to the family caregiver burden?"
CONSIDER: • *what was the goal of the research?* • *why was it thought important?* • *its relevance*	
2. Is a qualitative methodology appropriate?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants* • *Is qualitative research the right methodology for addressing the research goal?*	
3. Was the research design appropriate to address the aims of the research?	☒ Yes ☐ No ☐ Can't Tell "Data were collected after the patients had received the first PPP chemotherapy at home and conducted during face-to-face interviews using a semi-structured interview guide. The interview guide consisted of open-ended questions inviting the participants to freely communicate their views and experiences regarding home-based portable pump chemotherapy treatment (Roulston, 2010). At each interview, we were teams of one researcher and one clinical nurse specialist from the hematology department. The first interviews were conducted as dyadic interviews (Eisikovits and Koren, 2010), while the second, follow-up interviews were a combination of dyadic and individual interviews. These various approaches were chosen to benefit from greater nuanced data. The interview guide for the follow-up interviews was based on the initial patterns and ambiguities of the first interview (Braun and Clarke, 2013)."
CONSIDER: • *if the researcher has justified the research design (e.g., have they discussed how they decided which method to use)*	
4. Was the recruitment strategy appropriate to the aims of the research?	☒ Yes ☐ No ☐ Can't Tell "Two specialist nurses recruited eligible patients and their caregivers at the hematology

	department ward during the last few days of the patient's hospitalization and invited them personally to participate in the study." "We included five eligible adult patients with AML and their partners, over a period of five months. See Table 1 for a brief demographic presentation of the participants. The sample size was determined by our goals of diversity and rich data while we also maintained a manageable number of informants for analysis. Purposive sampling (Braun and Clarke, 2013; Patton, 2015) was used to ensure the perspectives of a wide range of patients with AML and their partners regarding gender, age, and distance to the hospital."
CONSIDER: • *If the researcher has explained how the participants were selected* • *If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study* • *If there are any discussions around recruitment (e.g. why some people chose not to take part)*	
5. Was the data collected in a way that addressed the research issue?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the setting for the data collection was justified* • *If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)* • *If the researcher has justified the methods chosen* • *If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)* • *If methods were modified during the study. If so, has the researcher explained how and why* • *If the form of data is clear (e.g. tape recordings, video material, notes etc.)* • *If the researcher has discussed saturation of data*	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes ☐ No ☒ Can't Tell
CONSIDER: • *If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location* • *How the researcher responded to events during the study and whether they considered the implications of any changes in the research design*	

Section B: What are the results?	
7. Have ethical issues been taken into consideration?	☒ Yes ☐ No ☐ Can't Tell "The study was registered by the Danish Data Protection Agency (P-2019-676). According to Danish law, the Committees on Health Research Ethics do not review qualitative research studies (NVK, 2021). We adhered to the General Data Protection Regulation, allowing participants to give their consent to certain areas of scientific research. All participants received verbal and written information about the study and provided written informed consent before the interviews. Participation was voluntary, and participants could withdraw from the study at any time, without giving a reason. We used pseudonyms in the published quotes."
CONSIDER: • *If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained* • *If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)* • *If approval has been sought from the ethics committee*	
8. Was the data analysis sufficiently rigorous?	☒ Yes ☐ No ☐ Can't Tell Thematic analysis is used, and the stages of thematic analysis was explained and how the researchers used the stages There is extensive data and examples where codes, sub-themes and themes have been generated from excerpts.
CONSIDER: • *If there is an in-depth description of the analysis process* • *If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data* • *Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process* • *If sufficient data are presented to support the findings* • *To what extent contradictory data are taken into account* • *Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation*	
9. Is there a clear statement of findings?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the findings are explicit* • *If there is adequate discussion of the evidence both for and against the researcher's arguments*	

• *If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)* • *If the findings are discussed in relation to the original research question*

Section C: Will the results help locally?	
10. How valuable is the research?	☒ Yes ☐ No ☐ Can't Tell There is a section dealing with 'implications for practice' and one about 'future research'
CONSIDER: • *If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g., do they consider the findings in relation to current practice or policy, or relevant research-based literature* • *If they identify new areas where research is necessary* • *If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used*	

APPRAISAL SUMMARY: *List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.*		
Positive/Methodologically sound	**Negative/Relatively poor methodology**	**Unknowns**

10.3.3 Critical Assessment of Jang et al. (2022)

CASP Checklist:
For Qualitative Research

Reviewer Name:	Jakob Justinussen
Paper Title:	**"It's a part of the patient": The experiences of patients with cancer undergoing home-based chemotherapy from patients' and nurses' perspectives**
Author:	Hyoeun Jang, Sanghee Kim, DaeEun Kim, Mehee Park, Sunemee Rhue, Changmin Lee, Seulgee Kim, Byungmun Kang, Haeri Lee [c]
Web Link:	https://pmc.ncbi.nlm.nih.gov/articles/PMC9184288/
Appraisal Date:	20-03-2025

During critical appraisal, never make assumptions about what the researchers have done. If it is not possible to tell, use the "Can't tell" response box. If you can't tell, at best it means the researchers have not been explicit or transparent, but at worst it could mean the researchers have not undertaken a particular task or process. Once you've finished the critical appraisal, if there are a large number of "Can't tell" responses, consider whether the findings of the study are trustworthy and interpret the results with caution.

Section A Are the results valid?	
1. Was there a clear statement of the aims of the research?	☒Yes ☐ No ☐ Can't Tell "This was a qualitative descriptive study in which we used individual, semi-structured interviews to explore the experiences of patients with cancer undergoing HC from patients and nurses who work with cancer patients."
CONSIDER: • *what was the goal of the research?* • *why was it thought important?* • *its relevance*	
2. Is a qualitative methodology appropriate?	☒Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants* • *Is qualitative research the right methodology for addressing the research goal?*	
3. Was the research design appropriate to address the aims of the research?	☒Yes ☐ No ☐ Can't Tell "This was a qualitative descriptive study in which we used individual, semi-structured interviews to explore the experiences of patients with cancer undergoing HC from patients and nurses who work with cancer patients."
CONSIDER: • *if the researcher has justified the research design (e.g., have they discussed how they decided which method to use)*	
4. Was the recruitment strategy appropriate to the aims of the research?	☐Yes ☐ No ☐ Can't Tell "A total of ten patients and ten nurses were recruited at the outpatient chemotherapy center of Yonsei University tertiary hospital, one of the largest hospitals in Korea. The inclusion criteria for patients were adult patients who underwent HC with an elastomeric infuser. The inclusion criterion for nurses was being a certified oncology nurse. Since nurses working in Yonsei University tertiary hospital's outpatient chemotherapy center have provided care for many patients receiving HC, they were interviewed as well to understand patients' various experiences from their perspectives. All patients and nurses were recruited through purposive sampling." "Data were collected through in-depth individual interviews, according to semi-structured questions, conducted from February 2020 to February 2021. During the data collection process, we sequentially recruited the key informants who would be able to provide us with the best information about HC experiences at the outpatient chemotherapy center of Yonsei University tertiary hospital."
CONSIDER:	

• *If the researcher has explained how the participants were selected* • *If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study* • *If there are any discussions around recruitment (e.g. why some people chose not to take part)*	
5. Was the data collected in a way that addressed the research issue?	☒ Yes ☐ No ☐ Can't Tell The setting was justified. Data were collected from semi-structured interviews, where 3 main question were asked. There are no explicit justification of the chosen method, but an interview would be an obvious choice for the study aim. "An interview guide was developed by the researchers based on the study's purpose." The methods are rather explicit, and the researcher discussed saturation of data: "Theoretical saturation was considered to be achieved when it was identified that there was no new content and that contents were duplicated in the 8th and 9th interviews."
CONSIDER: • *If the setting for the data collection was justified* • *If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)* • *If the researcher has justified the methods chosen* • *If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)* • *If methods were modified during the study. If so, has the researcher explained how and why* • *If the form of data is clear (e.g. tape recordings, video material, notes etc.)* • *If the researcher has discussed saturation of data*	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location* • *How the researcher responded to events during the study and whether they considered the implications of any changes in the research design*	
Section B: What are the results?	
7. Have ethical issues been taken into consideration?	☐ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained* • *If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)* • *If approval has been sought from the ethics committee*	
8. Was the data analysis sufficiently rigorous?	☒ Yes ☐ No ☐ Can't Tell

	There is an in-depth description of the analysis process. However, Elo and Kyngäs inductive content analysis method was used to analyse transcripts. There are, however, some similarities in this method to Braun and Clarke's thematic analysis method. Data is presented in the form om subcategories, generic categories, main categories and quotes from participants.
CONSIDER: • *If there is an in-depth description of the analysis process* • *If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data* • *Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process* • *If sufficient data are presented to support the findings* • *To what extent contradictory data are taken into account* • *Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation*	
9. Is there a clear statement of findings?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the findings are explicit* • *If there is adequate discussion of the evidence both for and against the researcher's arguments* • *If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)* • *If the findings are discussed in relation to the original research question*	
Section C: Will the results help locally?	
10. How valuable is the research?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g., do they consider the findings in relation to current practice or policy, or relevant research-based literature* • *If they identify new areas where research is necessary* • *If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used*	

APPRAISAL SUMMARY: *List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.*		
Positive/Methodologically sound	**Negative/Relatively poor methodology**	**Unknowns**

10.3.4 Critical Assessment of Kirkegaard et al. (2022)

Critical Appraisal Skills Programme

CASP Checklist:
For Qualitative Research

Reviewer Name:	Jakob Justinussen
Paper Title:	Home is best. Self-administration of subcutaneous Bortezomib at home in patients with multiple myeloma - A mixed method study
Author:	Jannie Kirkegaard, Birgitte Wolf Lundholm, Tine Rosenberg, Thomas Lund, Michael Tveden Gundesen, Karin Brochstedt Dieperink
Web Link:	https://www.ejoncologynursing.com/article/S1462-3889(22)00107-7/fulltext
Appraisal Date:	20-03-2025

Section A Are the results valid?	
1. Was there a clear statement of the aims of the research?	☒ Yes ☐ No ☐ Can't Tell "To examine the perspectives of patients and healthcare professionals of self-administration of subcutaneous (SC) injection of Bortezomib in the homes of patients with Multiple Myeloma (MM), and to assess organizational aspects."
CONSIDER: • *what was the goal of the research?* • *why was it thought important?* • *its relevance*	
2. Is a qualitative methodology appropriate?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants*	

3. Was the research design appropriate to address the aims of the research?	☒ Yes ☐ No ☐ Can't Tell "We used a prospective, clinical, parallel mixed-method design with a qualitative core and a quantitative supplementary component (Chiang-Hanisko et al., 2016). This design was chosen intentionally to combine qualitative and quantitative data, to maximize the strengths and minimize the weaknesses of each, using systematic integrative procedures. This paper is reported according the EQUATOR's Standards for Reporting Qualitative Research (SRQR) 21-item guideline"
CONSIDER: • *if the researcher has justified the research design (e.g., have they discussed how they decided which method to use)*	
4. Was the recruitment strategy appropriate to the aims of the research?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the researcher has explained how the participants were selected* • *If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study* • *If there are any discussions around recruitment (e.g. why some people chose not to take part)*	
5. Was the data collected in a way that addressed the research issue?	☒ Yes ☐ No ☐ Can't Tell *"Qualitative data* were obtained from two individual, semi-structured interviews with patients and one focus group interview with healthcare professionals. To clarify expectations and possible concerns, patients were interviewed before starting study treatment. Further, patients were interviewed after two treatment cycles to elucidate advantages and disadvantages of self-administration at home. Patient interviews were conducted on the telephone at a time point chosen by the patient. To obtain the perspectives of healthcare professionals, a focus group interview was conducted at the end of the study. All interviews were conducted in Danish by J.K. and B.W.L. To ensure a complete dataset, all interviews were recorded and transcribed verbatim. Based on an in-depth literature review and discussions with the User Council and former patients at the Department of Hematology, OUH, semi-structured interview guides were prepared for the interviews (Supplementary File 1). Interview guides contained mainly open-ended questions covering demographics, course of disease, experience of being a patient at the department, expectations of self-administration of SC Bortezomib at home (first patient interview) advantages, and disadvantages of self-administration at home (second patient interview and focus group interview)." *"Qualitative data* were obtained from two individual, semi-structured interviews with

	patients and one focus group interview with healthcare professionals. To clarify expectations and possible concerns, patients were interviewed before starting study treatment. Further, patients were interviewed after two treatment cycles to elucidate advantages and disadvantages of self-administration at home. Patient interviews were conducted on the telephone at a time point chosen by the patient."
CONSIDER: • *If the setting for the data collection was justified* • *If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)* • *If the researcher has justified the methods chosen* • *If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)* • *If methods were modified during the study. If so, has the researcher explained how and why* • *If the form of data is clear (e.g. tape recordings, video material, notes etc.)* • *If the researcher has discussed saturation of data*	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes ☒ No ☐ Can't Tell Limited commentary on the relationship between researcher and the participants. "We aimed for maximum variation in the group of participants, but as patients were continually included, being selective was not an option. With regard to age and gender, maximal variation was achieved (GCO, 2020, DMSG, 2017), but in the area of education, we saw a predominance of farmers and only few with a higher education (Goodwin et al., 2013)."
CONSIDER: • *If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location* • *How the researcher responded to events during the study and whether they considered the implications of any changes in the research design*	
Section B: What are the results?	
7. Have ethical issues been taken into consideration? 56	☒ Yes ☐ No ☐ Can't Tell "To clarify expectations and possible concerns, patients were interviewed before starting study treatment." "According to the Danish National Research Ethics Committee, the study did not require approval. The study was registered at the Danish Data Protection Agency with no. 19/41516 and at ClinicalTrials.gov, ID: NCT05163405."

CONSIDER: • *If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained* • *If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)* • *If approval has been sought from the ethics committee*	
8. Was the data analysis sufficiently rigorous?	☐ Yes ☐ No ☒ Can't Tell *"qualitative data* were analyzed applying a hermeneutic approach through the use of systematic text condensation (Malterud, 2012)."
CONSIDER: • *If there is an in-depth description of the analysis process* • *If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data* • *Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process* • *If sufficient data are presented to support the findings* • *To what extent contradictory data are taken into account* • *Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation*	
9. Is there a clear statement of findings?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the findings are explicit* • *If there is adequate discussion of the evidence both for and against the researcher's arguments* • *If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)* • *If the findings are discussed in relation to the original research question*	
Section C: Will the results help locally?	
10. How valuable is the research?	☒ Yes ☐ No ☐ Can't Tell
CONSIDER: • *If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g., do they consider the findings in relation to current practice or policy, or relevant research-based literature* • *If they identify new areas where research is necessary* • *If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used*	

APPRAISAL SUMMARY: *List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.*

Positive/Methodologically sound	**Negative/Relatively poor methodology**	**Unknowns**

10.4 Interview Guide

Indledning	
Præsentation	Tak, fordi du vil tale med mig i dag Jeg er i gang med at skrive mit Kandidatspeciale i samarbejde med Sundhedsvæsenets Kvalitetsinstitut. De skal senere hen bruge mit speciale til at lave deres egen undersøgelse af hjemmebehandling blandt hæmatologiske kræftpatienter.
Interviewspørgsmål	Jeg vil i løbet af vores samtale stille nogle spørgsmål, der omhandler din oplevelse af hverdagen med hjemmebehandling, afhentningen/levering af medicin og hvordan du oplevede kontakten til sygehusvæsenet. Samtalen kommer nok til at være maksimalt 60 minutter, men det afhænger også af, hvor meget vi har at snakke om. Du er velkommen til at tage en pause i løbet af samtalen, hvis du har brug for det.
Samtykkeerklæring	Inden vi starter, skal jeg gennemgå samtykkeerklæringen med dig. Det er et længere skriv, som helt overordnet beskriver, hvordan vi opbevarer og behandler materialet fra i dag – fx at vi kun vil bruge dine udsagn på anonymiseret vis. Derudover skal vi høre, om det er ok, at jeg optager vores snak, så jeg kan være lyttende og nærværende og ikke behøver at notere dine pointer ned undervejs? Tusind tak for det!
Spørgsmål	Har du nogle spørgsmål, inden vi går i gang?

Hverdagen med hjemmebehandling
• Hvor længe siden er det, at du er begyndt på hjemmebehandling? • Hvis vi tænker tilbage på perioden før du fik behandling, hvilke forventninger havde du dengang til hjemmebehandling? • Hvordan ændrede det din hverdag, at du kom i hjemmebehandling? • Er der dele af hjemmebehandling, som du får hjælp til at udføre? F.eks. hjælp fra en partner, familiemedlem eller hjemmehjælper?
Erfaringer med ambulant behandling (hvis relevant)

• Har du oplevet at være i ambulant kræftbehandling. Hvor behandling foregår ved hospitalet?
  ○ Hvis ja: Hvordan var det anderledes?
  ○ Hvis nej: Hvordan ville du have det med at have været i ambulant behandling i stedet?

Logistiske aspekt af medicinering
• Hvordan modtog du din medicin? På hospitalet, apoteket eller hjemmelevering?   ○ Til hvor langt tid fik du medicinen? • Hvordan fik du det til at passe ind i din hverdag, at du skulle tage højde for det? • Var der noget uventet i forhold til det praktiske omkring medicineringen?

• Er der nogle ting, du føler der kunne forbedres ift. den måde, det fungerede på?
Kontakt til sygehusvæsenet
• Hvis vi ser tilbage på starten af hjemmebehandlingsperioden, fik du nogen oplæring i at indgive hjemmebehandlingen? Og hvordan fungerede det, hvem oplærte dig og hvor? ○ Hvor mange gange skulle du få medicinen på hospitalet før du gjorde det derhjemme? • Hvordan oplevede du det at skulle stå for behandlingen selv • Havde du nogle oplevelser, hvor du havde brug for hjælp fra sygeplejesker og fik du den nødvendige hjælp? Og hvordan kom du i kontakt med sygeplejersken?

Afslutning	
Afrunding	Tak for at du ville snakke med mig. Jeg har ikke flere spørgsmål, men er der noget du gerne vil tilføje her til sidst?
Spørgsmål	Hvis det har interesse, sender jeg gerne rapporten, når jeg er færdig her til juni.

Patientkarakteristika	
Køn:	
Alder	Ved diagnose: Vedinterview:
Cancertype:	

10.5 Consent Form page 1

Samtykkeerklæring

Jeg er en studerende på 10. Semester af Medicin med Industriel Specialering på kandidatretningen Medical Market Access ved Aalborg Universitet, som ønsker at behandle dine personoplysninger til mit speciale med navnet "*Patient experiences and organizational aspects of receiving chemotherapy at home – a qualitative approach*". Projektet har til formål at undersøge patienters oplevelser af hjemmebehandling med kemoterapi samt organisatoriske aspekter af hjemmebehandling med kemoterapi. Dertil skal der bruges interviews med kræftpatienter samt sundhedspersonale, som har erfaring med eller kontakt til kræftpatienter.

Vi beder venligst om dit samtykke til at behandle dine personoplysninger til vores projekt.

Studiegruppen består af: *Jakob Kristian Justinussen*

Jeg er dataansvarlige for behandlingen af dine oplysninger mit vores projekt, uafhængigt af Aalborg Universitet.

Du giver samtykke til, at jeg må behandle følgende oplysninger om dig: Køn, alder, familiære forhold, helbredstatus samt udtalelser fra interview.

Dine oplysninger bliver opbevaret sikkert, og vi benytter dem udelukkende til ovenstående formål.

Du har altid ret til at trække dit samtykke tilbage. Ønsker du at trække dit samtykke tilbage, kan du kontakte mig på jakobjustinussen@live.dk eller mobilnummer: 24 87 47 70

Databeskyttelsesforordningen giver dig ret til at få en række oplysninger, som du finder herunder: https://gdpr.dk/databeskyttelsesforordningen/

Sæt kryds

☐ Jeg giver hermed samtykke til at ovennævnte studiegruppe må behandle mine oplysninger i henhold til ovenstående formål og oplysninger.

☐ Jeg giver hermed samtykke til at mine personlige oplysninger indgår pseudonymiseret – dvs. så det ikke er muligt at identificere mig – i en endelig projektrapport, som vil blive offentliggjort i Aalborg Universitets digitale projektbibliotek samt afleveres til Aalborg Universitet med henblik på eksamensbedømmelse.

Dato:

Navn:

_____

Underskrift

10.6 Consent Form page 2

SÅDAN BEHANDLER VI DINE DATA

VI ER DATAANSVARLIGE

Jakob Kristian Justinussen

FORMÅLET MED AT BEHANDLE DINE OPLYSNINGER

Projektet har til formål at undersøge patienters oplevelser af hjemmebehandling med kemoterapi samt organisatoriske aspekter af hjemmebehandling med kemoterapi. Dertil skal der bruges interviews med kræftpatienter samt sundhedspersonale, som har erfaring med eller kontakt til kræftpatienter.

JEG BEHANDLER DISSE PERSONOPLYSNINGER

Alder, familiære forhold, køn, sygdomsstatus og udtalelser fra interviewet.

☐ Almindelige personoplysninger, jf. databeskyttelsesforordningens art. 6, stk. 1, litra a.

Følgende almindelige personoplysninger behandles om dig: Alder, køn og familiære forhold.

☐ Følsomme personoplysninger, jf. databeskyttelsesforordningens art. 9, stk. 2, litra a.

Følgende følsomme personoplysninger behandles om dig: Helbredsoplysninger og udtalelser fra interviewet.

De indsamles fra: Interviews foretaget

SÅDAN OPBEVARER JEG DINE OPLYSNINGER

Jeg opbevarer dine personoplysninger, så længe det er nødvendigt i forhold til formålet med at indhente dit samtykke og i henhold til gældende lovgivning. Herefter sletter jeg dine personoplysninger.

DINE RETTIGHEDER

Når jeg behandler dine personoplysninger, har du ifølge databeskyttelsesforordningen flere rettigheder. Det betyder bl.a., at du har ret til sletning og dataportabilitet, og i visse tilfælde har du ret til indsigt, berigtigelse, begrænsning og til at gøre indsigelse mod vores behandling af de omfattede personoplysninger.

Du har altid mulighed for at trække dit samtykke tilbage. Vær dog opmærksom på, at du ikke kan trække dit samtykke tilbage med tilbagevirkende kraft.

Læs mere om dine rettigheder her på Datatilsynets hjemmeside: https://www.datatilsynet.dk/hvad-siger-reglerne/vejledning/de-registreredes-rettigheder-

VIL DU KLAGE?

Du er altid velkommen til at kontakte mig med spørgsmål. Hvis du mener, at jeg ikke behandler dine oplysninger efter reglerne, så kontakt mig gerne.

Du har også altid mulighed for at klage til Datatilsynet på dt@datatilsynet.dk.

10.7 AI declaration page 1

AALBORG UNIVERSITY
DENMARK

Disclosure – Use of Artificial-Intelligence (AI) Generated Content

Students must acknowledge all use of AI

Select all applicable statements and complete the text if applicable.

1. Disclosure: No AI use

☐ I acknowledge that no AI tools/technologies (Grammarly, ChatGPT, Bard, Quillbot, OpenAI etc.) were used in the completion of this assessment.

2. Disclosure: Formulate research question

☐ I acknowledge the use of XYZ, version, Month, Year (web URL) to formulate the following research question what was formulated. I uploaded the text, and I entered the following prompts on Date, Month, Year:

Original prompt: "Paste the prompt"

Follow-up prompt: "Paste the prompt"

The output from these prompts was used to state what action was made using the output.

3. Disclosure: Literature search

☐ I acknowledge the use of XYZ, version, Month, Year (web URL) to search for literature. I entered the following prompts on Date, Month, Year:

Original prompt: "Paste the prompt"

Follow-up prompt: "Paste the prompt"

The output from these prompts was used to state what action was made using the output.

4. Disclosure: Critical literature assessment

☒ I acknowledge the use of Rayyan to assess my literature.

Disclosure: Synthesize literature

☐ I acknowledge the use of XYZ, version, Month, Year (web URL) to synthesize the literature. I entered the following prompts on Date, Month, Year:

Original prompt: "Paste the prompt"

Follow-up prompt: "Paste the prompt"

The output from these prompts was used to state what action was made using the output.

5. Disclosure: Generated/manipulated code – list each occurrence

☐ I acknowledge the use of XYZ, version, Month, Year (web URL) to explain what you used AI for. I entered the following prompt on Date, Month, Year:

"Paste the prompt"

The output from these prompts was used to explain what the code was used for.

6. Disclosure: Generated/manipulated image – list each occurrence

☐ I acknowledge the use of XYZ, version, Month, Year (web URL) to explain what you used AI for. I entered the following prompt on Date, Month, Year:

"Paste the prompt"

The output from these prompts was used to explain what the image was used for.

10.8 AI declaration page 2

AALBORG UNIVERSITY
DENMARK

7. Disclosure: Data analysis

☐ I acknowledge the use of XYZ, version, Month, Year (web URL) to analyze data. I entered the following prompts on Date, Month, Year:

Original prompt: "Paste the prompt"

Follow-up prompt: "Paste the prompt"

The output from these prompts was used to state what action was made using the output.

8. Disclosure: Generate or rephrase text incl. edit/refine grammar, spelling, or formatting – list each occurrence

☒ I acknowledge the use of ChatGPT to rephrase text and refine grammar and spelling

Disclosure: Create presentations

☐ I acknowledge the use of XYZ, version, Month, Year (web URL) to explain what you used AI for. I entered the following prompts on Date, Month, Year:

Original prompt: "Paste the prompt"

Follow-up prompt: "Paste the prompt"

The output from these prompts was used to state what action was made using the output.

9. Disclosure: Communicate to laymen/non-specialists

☐ I acknowledge the use of XYZ, version, Month, Year (web URL) to explain what you used AI for. I entered the following prompts on Date, Month, Year:

Original prompt: "Paste the prompt"

Follow-up prompt: "Paste the prompt"

The output from these prompts was used to state what action was made using the output.

☒ ***I declare that the disclosure is complete and truthful.***

Student number: 20194960

Course: Master Thesis

Date: 28-05-2025