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Examining gender differences in specialized palliative care: A retrospective cohort study of patients with cancer in Skåne, Sweden

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Abstract

Background: Gender differences in palliative care is an under-researched area, both internationally and in Sweden. A regional pilot study by our research group indicated that men have greater unmet palliative care needs prior to referral. Building on these findings, the aim of this study was to examine gender differences in the quality of care received at the end of life within specialized palliative care among adult patients with cancer in Skåne, Sweden.

Methods: This retrospective cohort study included two cohorts: a training cohort (n = 134), consisting of participants from the pilot study, and a validation cohort (n = 15,861). Data were obtained from the Swedish Palliative Care Registry, including patients with cancer enrolled in specialized palliative care and died between 2013 and 2023. Descriptive statistics, parametric and non-parametric tests, and regression analysis were performed to examine gender differences across quality indicators of palliative care, including place of death, end-of-life care planning, symptom assessment and management, and enrollment duration.

Results: No significant gender differences were found in serious illness conversations, symptom assessment, or symptom management in both cohorts. Men had significantly shorter enrollment periods compared to women (validation cohort, adjusted IRR 0.85, 95% CI: 0.82–0.88) and were more likely to die at home. Adjusted analyses of validation cohort showed that men had higher odds of having a preferred place of death conversation documented (adjusted OR 1.20, 95% CI: 1.06–1.37).

Conclusion: While serious illness conversation, symptom assessment and management were equitable within specialized palliative care, gender differences persisted in enrollment duration, place of death and preferred place of death conversation. These findings highlight the need to address earlier phases of the illness trajectory and integrate gender-sensitive approaches into public health efforts to promote equity in palliative care.

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1. Introduction

1.1 Background

Each year, an estimate of 56.8 million people requires palliative care, yet only about 14% in need receive it. By 2060, serious health-related suffering requiring palliative care is expected to increase by 87% globally (WHPCA & WHO, 2020). Palliative care, as defined by the International Association for Hospice and Palliative Care's (IAHPC), is a holistic approach to care aimed at alleviating serious health-related suffering in individuals of all ages due to severe illness, particularly in the final stages of life (Radbruch et al., 2020). It focuses on enhancing quality of life for patients, their families and caregivers through interventions such as symptom management, communication, psychosocial support and coordinated multidisciplinary care. Although historically overlooked in global health agendas such as the Sustainable Development Goals, palliative care has increasingly been recognized as an essential component of achieving universal health coverage (Knaul et al., 2018). Nonetheless, substantial challenges remain in ensuring equitable access to high-quality palliative care services. While unmet needs are particularly pronounced in low- and middle-income countries, disparities also exist within high-income countries (Axelsson, 2022).

1.1.1 Palliative care in Sweden

In contrast to IAHPC definition, the Swedish National Board of Health and Welfare defines palliative care more specifically as care for patients with progressive, incurable illness or injury (Socialstyrelsen, 2018). However, there are broader definition of palliative care within the Swedish healthcare system, which include all patients with one or more life-threatening illnesses, meaning conditions that may lead to death within weeks, months, or years (Nationellt system för kunskapsstyrning hälso- och sjukvård, 2022). Furthermore, national guidelines emphasize that a palliative approach should be adopted by all healthcare and social care staff, regardless of care setting, and initiated in the early stages of chronic or incurable disease, when possible (Socialstyrelsen, 2018). The palliative approach is characterized by a holistic view of the individual, supporting the person to live with dignity and with the best possible well-being until the end of life.

Palliative care in Sweden is structured into two levels: general palliative care and specialized palliative care. General palliative care is provided across all healthcare and social care settings by staff without specialist training, aiming to relieve symptoms and offer basic psychosocial and existential support (Regionala cancercentrum, 2023). Specialized palliative care is delivered by multiprofessional teams with advanced expertise and is intended for patients with more complex needs (Socialstyrelsen, 2018). These dimensions of palliative care strive to ensure that patients and their families have access to competent care based on their needs, regardless of diagnosis, age, place of residence, or type of care setting (Regionala cancercentrum, 2023).

Despite Sweden being recognized as a country with highly developed palliative care, research has highlighted ongoing challenges in achieving equitable access (particularly within specialized palliative care), with disparities linked to geography, diagnosis, age, and level of care (Axelsson, 2022). However, the effects of social determinants of health, such as gender, on palliative care remains an under-researched area, both internationally and in Sweden (Elwér, Waldau & Strehlenert, 2016; Gott, Morgan & Williams, 2020). Social determinants of health refer to the conditions—such as where people are born, grow, live, work, and age, and their access to power and resources—that shape health outcomes (World Health Organization, 2025). Gender is recognized as a fundamental social determinant influencing population health and contributing to health inequalities (Ali et al., 2024). Although evidence demonstrates that gender shapes end-of-life experiences and care, it has been systematically overlooked in research, policy, and practice, as the field remains predominantly anchored in a biomedical model that neglects the social and cultural context (Gott, Morgan, & Williams, 2020).

1.1.2 Gender differences in palliative care

Previous research has found that gender plays a crucial role in shaping end-of-life experiences, influencing care preferences, symptom management, and the intensity of medical interventions received. According to Wong and Phillips (2023) scoping review (which include articles mainly from a Western European and North American context), men are more likely to receive aggressive and curative-focused medical interventions, including intensive care unit (ICU) admissions, resuscitation (CPR), mechanical ventilation, surgery, and hemodialysis. Conversely, women are more likely to have a do not resuscitate (DNR) order in place, shorter hospital stays, accept at an earlier stage and receive generalist palliative care at the end of life (Wong & Phillips, 2023). Furthermore, research investigating the gender differences in palliative care preferences among patients with advanced cancer in the United States found that women were significantly more likely than men to prefer palliative care (Saeed et al., 2018).

Research has also identified gender differences in serious illness conversations, which play a crucial role in shaping end-of-life care decisions. Studies indicate that women are more likely than men to acknowledge their illness as terminal and incurable, discuss life expectancy (Fletcher et al., 2013), initiate conversations about their impending death (Skulason et al., 2014), and discuss care preferences at the end of life (Sharma et al., 2015). These disparities in communication appear to contribute to gender differences in medical interventions received in end of life, as Sharma et al. (2015) found that men who had not engaged in end-of-life discussions with their oncologists were more likely to receive ICU care in their final week of life compared to those who had. However, this association between end-of-life discussion and ICU admissions in the last week of life was not found among women. These findings suggest that men’s lower engagement in serious illness conversations may contribute to more aggressive and potentially non-beneficial treatments at the end of life.

In Sweden, research on gender differences in palliative care (especially at the population level) remains limited, and findings from existing studies are mixed. For example, a study investigating end-of-life healthcare utilization among patients with malignant brain tumors found no gender differences in access to specialized palliative care, though men were more likely than women to be hospitalized at the end of life (Lindskog et al., 2022). Similarly, a study of patients with amyotrophic lateral sclerosis (ALS) found no gender differences in access to specialized palliative care (Strang et al., 2024). However, a recent study of patients with hematological malignancies found that women were significantly more likely to receive specialized palliative care than men (Bahr et al., 2025). Additionally, another Swedish study found that women were significantly more likely than men to receive palliative chemotherapy near the end of life (Randén et al., 2013). In terms of public awareness, Westerlund et al. (2018) reported that women (particularly older women) had significantly higher awareness of palliative care than men, pointing to a gender gap in knowledge and engagement with end-of-life care services. Meanwhile, Falk et al. (2016) found no gender differences in symptom distress among patients with a documented palliative care designation. Together, these findings reflect a complex and nuanced picture of gender differences in Swedish palliative care, underlining the need for further research to better understand and address potential gender inequities.

1.2 Aim

A pilot study conducted by the Serious Illness and Supportive Care Lab (PI Klintman, Department of Clinical Sciences Lund, Lund University) identified gender disparities in palliative care needs among patients with cancer. The study investigated palliative care needs prior to referral to specialized palliative care in Skåne (Boo Hammas et al., 2025). The study found that men had significantly more hospital admissions and emergency department visits six months before referral to specialized palliative care than women. Furthermore, men were less likely to have documentation of serious illness conversation in their medical records. Consequently, these results suggests that men have greater unmet palliative care needs compared to women before referral to specialized palliative care. These findings highlight the importance of further research into gender differences in palliative care, including investigating differences within specialized palliative care. Therefore, the aim of this study is to examine potential gender differences in quality of care received at the end of life within specialized palliative care in Skåne (southern Sweden) among adult patients with cancer.

1.3 Research questions

1. Do the gender differences identified in the pilot study cohort persist in the quality of care received among those enrolled in specialized palliative care at the time of death?
2. What are the differences in the quality of care received at the end of life between men and women among patients with cancer enrolled in specialized palliative care in Skåne, Sweden?

2. Methods

2.1 Study design and data source

This is a retrospective cohort study utilizing data from the Swedish Palliative Care Registry. The Swedish Palliative Care Registry is a national registry that collects data on the quality of care provided to patients in Sweden during the last week of life, including information about symptoms, communication, care planning, and support for relatives (Svenska Palliativregistret, 2024b). The data used in this study is built on an end-of-life questionnaire with 30 questions that is answered by responsible health care personnel after the death of a patient (Svenska Palliativregistret, 2024a). Within specialized palliative care in Region Skåne, the coverage of reported deaths in the registry is nearly 100%.

2.2 Study population and setting

The study population consists of adult patients (aged 18 years and older) with a cancer diagnosis who were enrolled in specialized palliative care in Skåne and died between 1 January 2013-31 December 2023. Skåne is a region in southern Sweden with an estimated population of 1.26-1.42 million during the study period (Statistiska centralbyrån, n.d.). Region Skåne is the publicly funded regional organization responsible for delivering health and medical services in the geographical area of Skåne (Region Skåne, 2024). Within Region Skåne, specialized palliative care is provided through six inpatient facilities and eight advanced home-based care services (in Swedish: "ASIH - Avancerad Sjukvård i Hemmet") and out-patient services (Nationella Rådet för Palliativ Vård, n.d.). Specialized palliative care in Region Skåne is provided across multiple municipalities through multidisciplinary teams that include physicians, nurses, social workers, physiotherapists, occupational therapists, and dietitians. As of the most recent data, specialized palliative care services were available in eight locations throughout the region, including facilities in Malmö, Lund, Helsingborg, Kristianstad, Ystad, Trelleborg, Hässleholm, and Ängleholm (Nationella Rådet för Palliativ Vård, n.d.).

To address the study's research questions, the overall study population was divided into two subgroups*: the training cohort* and *the validation cohort*. The training cohort included patients who were part of the previously conducted pilot study to investigate if the discovered gender differences persisted among those enrolled in specialized palliative care at the time of death. The validation cohort consisted of all remaining eligible patients meeting the inclusion criteria within the selected time frame. This cohort provided a population-level perspective and allowed for the testing of findings observed in the pilot study and the training cohort.

2.3 Measures

Majority of measures were collected from the Swedish Palliative Care Registry. However, data regarding the variable "Living situation" was gathered from the pilot study and therefore only available for the training cohort. For all measures, if the response was “don’t know” or not answered they were classified as “missing”.

2.3.1 Exposure and outcome variables

In this study, the primary independent variable—and main exposure of interest—was gender, categorized as male or female in line with the end-of-life questionnaire categorization of gender as a binary variable (Svenska Palliativregistret, 2024a). The dependent variables, which serve as the outcomes in this analysis, include a range of indicators reflecting the quality of palliative care received. The most suitable outcome variables were discussed and selected together with the research team, which includes healthcare personnel and researchers with expertise within specialized palliative care.

These outcome variables include measures related to *end-of-life care planning*, such as whether a *serious illness conversation* was documented with the patient or their relatives, and whether a conversation regarding the *preferred place of death* took place (all dichotomized as yes/no). In this case, serious illness conversation refers to a specific conversation known in Swedish as “brytpunktssamtal”. According to national guidelines, it is an individualized conversation with a physician about the decision to transition to palliative care in the final stages of life, during which the ongoing care is discussed in relation to the patient’s condition, needs, and wishes (Socialstyrelsen, 2018). If any such conversation was documented with physicians or other healthcare professionals, this variable was categorized as “yes”. The variable *preferred place of death conversation* was categorized as “yes” if an expressed preference was documented or if it was noted that the person had no preference. It was categorized as “no” if no preference was expressed, the person was unable to express a preference, or the topic was not addressed. These types of conversation (related to end-of-life care planning) are associated with improved alignment of care with patient preferences, greater satisfaction, and reduced use of non-beneficial interventions at the end of life (Brinkman-Stoppelenburg et al., 2014).

Additional outcome variables include measures of symptom assessment and management, specifically whether *pain assessment*, *assessment of other symptoms*, and *pain relief* were provided. These were recorded as binary (yes/no) variables in the questionnaire and utilized accordingly. Symptom assessment and management, particularly related to pain, are widely recognized as core quality indicators in palliative care (Claessen et al., 2011).

Furthermore, the number of *enrollment days* in specialized palliative care and the recorded *place of death* serve as broader indicators of palliative care quality. Days of enrollment were calculated as the difference between the date of admission to specialized palliative care and the date of death. Place of death was based on the specific location recorded in the end-of-life questionnaire, including options such as palliative care facility, private home, nursing or other group home, short-term care unit, other hospital facilities, or other. Earlier enrollments in palliative have been associated with less aggressive end-of-life care, such as reduced hospitalizations and ICU admissions, suggesting that the duration of palliative care enrollment can serve as a quality measure (Mah et al., 2024). Similarly, dying outside of hospital, particularly at home, has been linked to higher quality of palliative care (Oosterveld-Vlug et al., 2022).

2.3.2 Demographic and clinical characteristics

Other measures were also included to examine gender differences in demographic and clinical characteristics, such as age at death (recorded as a continuous variable), living situation (categorized as living alone or living with others), and type of specialized palliative care. The last measure was dichotomized as inpatient or home-based palliative care, based on information about the organization of care facilities retrieved from "Palliativguiden*"* (Nationella Rådet för Palliativ Vård, n.d.). Furthermore, symptoms in the last week of life were utilized, including *pain*, *rattling breathing, nausea, anxiety, dyspnea,* and *confusion*, all of which were recorded as binary (yes/no) variables. Medical and nursing care indicators encompassed the presence of *pressure ulcers upon arrival*, *pressure ulcers at death*, whether an *oral health assessment* had been performed, and whether parenteral fluids were administered in the last 24 hours of life (all dichotomized as yes/no). The timing of the *last doctor's visit before death* was categorized as having occurred within "day/days", "week/weeks", or "month or more." Additional variables included who was *present at the time of death* (categorized as "relatives only", "relatives and staff", "staff', or "nobody" present) and whether a bereavement conversation was offered to the relatives (yes/no).

2.4 Statistical analysis

All statistical analyses were conducted using Stata (version 18, StataCorn LLC, College Station, Texas, USA). Descriptive statistics were produced for all measures, stratified by gender. Continuous variables were reported as means with standard deviations (SD) or medians with interquartile ranges (IQR), while categorical variables were presented as frequencies and percentages. Pearson's Chi-square or Fisher's exact tests were applied for categorical variables, while Wilcoxon rank-sum and Welch's t-tests for continuous variables. For the validation cohort, logistic regression was also performed to assess the association between gender and binary outcome variables. Negative binomial regression was utilized to assess the association between gender and the continuous outcome variable (enrollment days). Both unadjusted and adjusted models were employed. In the training cohort, an exploratory logistic regression was also conducted adjusting for living situation to assess its potential role as a confounder in the association between gender and place of death. Female was used as the reference category to align with prior research and the logic of comparing men's care outcomes against women's. Statistical significance was set at a p-value <0.05.

2.5 Ethical considerations

The data consists solely of information related to deceased patients, which is not classified as sensitive personal data under national guidelines and therefore does not require formal ethical approval. However, the research was reviewed by the Swedish Ethical Review Authority, which approved the research in an advisory opinion (*rådgivande yttrande*, Dnr 2024-03853-01). Although formal ethical approval was not required, all data was handled in accordance with established research ethics principles. The dataset was securely stored on institutional servers with restricted access. Any identifiable information was decoded by a designated member of the research team to ensure confidentiality while enabling linkage and analysis. All subsequent analyses were conducted using de-identified data to protect the integrity and privacy of individuals represented in the dataset.

3. Results

3.1 Training Cohort

3.1.1 Distribution of demographic and clinical characteristics

Table 1 presents the demographic and clinical characteristics of the training cohort stratified by gender. The training cohort consists of 134 patients, with 48.5% men and 51.5% women. The mean age at death was 71.9 years (SD = 10.7) and with no significant gender differences (p = 0.964). A significant difference was observed in living situations, where men were more likely to live with others compared to women (76.9% vs. 53.6%, p = 0.005). Regarding the type of palliative care received, women were significantly more likely to receive inpatient palliative care compared to men (68.1% vs, 47.7%, p = 0.017). In terms of symptoms in the last week of life, no significant gender differences were found for pain, nausea, anxiety, dyspnea or confusion.

Medical and nursing care indicators showed no significant gender differences. Pressure ulcers upon arrival were present in 14.9% of patients, with no significant gender difference (p = 0.707). At death, 36.6% of patients had pressure ulcers, with no significant difference between men and women (p = 0.526). Oral health assessments were performed in 85.1% of cases, with no gender difference (p = 0.885). Parenteral fluids in the last 24 hours were rare (2.2%), with no significant gender differences. The majority of patients had a doctor’s visit in the days before death (97.8%), with no difference between men and women (p = 1.000). Additionally, people present at the time of death varied between genders, with men more frequently having relatives present (67.7%) compared to women (56.5%), though the difference was not statistically significant (p = 0.083). Bereavement conversations were offered to nearly all families (99.3%) with no significant gender differences (p = 1.000).

3.1.2 Distribution of quality indicators of palliative care

Table 2 presents the quality indicators of palliative care stratified by gender for the training cohort. The median number of days enrolled in specialized palliative care was longer for women (24 days, IQR: 10–59) than men (16 days, IQR: 7–37), though this difference was not statistically significant (p = 0.098). Place of death was significantly associated with gender (p = 0.017). A higher proportion of women died in a palliative care facility than men (61.8% vs. 47.7%), whereas more men died at home than women (52.3% vs. 31.9%). However, after adjusting for living situation, the association between gender and place of death was no longer statistically significant (p = 0.060). Serious illness conversations (i.e. “brytpunktssamtal”) with the patients were performed with the majority of the patients (96.3%), with no significant gender difference (p = 0.674). Furthermore, serious illness conversations with relatives were documented for nearly all patients (99.3%) with no significant gender difference (p = 1.000). Conversations regarding the preferred place of death were documented in 85.1% of patients, with a slightly higher proportion among men (87.7%) compared to women (82.6%), though this difference was not statistically significant (p = 0.409). Pain assessment and assessment of other symptoms were performed in the majority of patients, with no significant gender differences (p = 0.301 for pain assessment; p = 0.898 for other symptom assessment). Pain relief was also achieved for the majority of patients (94.8%), with no significant gender differences (p = 1.000).

3.2 Validation Cohort

3.2.1 Distribution of demographic and clinical characteristics.

Table 3 demonstrates the demographic and clinical characteristics of the validation cohort. The validation cohort consisted of 15 861 patients, with equal representation of men (50.0%) and women (50.0%). The mean age at death was 71.9 years (SD = 11.9), with no significant gender difference (p = 0.068). Type of palliative care was significantly associated with gender (p < 0.001). A higher proportion of women received inpatient palliative care (66.2%) compared to men (61.4%), whereas home-based care was more common among men (38.6%) than women (33.9%).

In terms of symptoms in the last week of life, no significant gender differences were found for pain, anxiety and dyspnea. However, rattling breathing and confusion were slightly more frequent among men (48.3% and 28.1%, respectively) than women (45.0% and 24.5%), with these differences being statistically significant (p < 0.001 for both). Nausea was more frequently reported among women than men (22.0% vs. 14.9%, p < 0.001).

Medical and nursing care indicators showed some significant differences. Oral health assessments were slightly more frequent among women (86.3%) than men (84.8%), with a statistically significant gender difference (p = 0.023). No significant gender differences were found for pressure ulcers on arrival or at death. For both men and women, the majority had their last doctor visit a day or days before time of death (87.6 % vs. 87.8%, p = 0.886). No significant gender differences were observed in presence at time of death (p = 0.063) or in whether bereavement conversations were offered (p = 0.871).

3.2.2 Distribution of quality indicators of palliative care

Table 4 summarizes gender differences in quality indicators of palliative care in the validation cohort. A significant gender difference was observed in the number of days enrolled in specialized palliative care (p < 0.001), with women having a slightly longer median duration (14 days, IQR: 5–40) compared to men (13 days, IQR: 4–36). Gender differences were also observed in place of death ($p < 0.001$): 66.1% of women died in a palliative care facility compared to 61.6% of men, while men more frequently died at home (37.0% vs. 32.3%).

The majority of patients had documented serious illness conversations (i.e. "brytpunktssamtal"), both with the patient and their relatives, with no significant differences observed between genders ($p = 0.108$ and $p = 0.746$, respectively). Conversations about the preferred place of death were also documented for the majority of patients, with no statistically significant gender difference observed ($p = 0.062$). Pain assessments were performed in 84.7% of patients and other symptoms assessed in 46.5%, with no significant gender differences in both assessments ($p = 0.869$ and $p = 0.854$). Pain relief was reported in 86.1% of cases and no gender difference was observed ($p = 0.448$).

3.2.3 Regression analysis on quality indicators for palliative care

The results of regression analyses examining gender differences in quality indicators of palliative care are presented in Tables 5 and 6. The association was adjusted to age at death and type of palliative care. Regression models (both unadjusted and adjusted) revealed a significant gender difference in the length of enrollment, with the adjusted model indicating that men, on average, spent 15% fewer days in specialized palliative care compared to women (Adjusted IRR = 0.85, 95% CI: 0.82 – 0.88). Both unadjusted and adjusted odds ratios showed no significant gender differences in documentation of serious illness conversations with the patient or with relatives. However, the adjusted regression model for serious illness conversations (i.e. "brytpunktssamtal") with patients showed that men had approximately 11% higher odds of having a conversation documented compared to women (Adjusted OR = 1.11, 95% CI: 0.99 – 1.24). After adjustment for age and type of palliative care, men were significantly more likely than women to have a documented conversation regarding their preferred place of death (Adjusted OR = 1.20, 95% CI: 1.06–1.37). No significant differences were observed between men and women in terms of pain assessment (Adjusted OR = 1.00, 95% CI: 0.92 – 1.09), other symptom assessments (Adjusted OR = 1.00, 95% CI: 0.94 – 1.06), or pain relief (Adjusted OR = 1.47, 95% CI: 0.55–3.86).

4. Discussion

This study examined gender differences in the quality of care within specialized palliative care among adult patients with cancer in Skåne, Sweden. While no gender differences were found in symptom assessment, symptom management, or serious illness conversations, differences were observed in place of death, duration of enrollment in specialized palliative care, and documentation of preferred place of death conversations.

4.1 Place of death

Across both the training and validation cohorts, women were significantly more likely to die in a palliative care facility, while men more often died at home. Similar patterns were reported in a scoping review by Narayanan et al. (2025), which found that male patients in low- and middle-income countries more frequently expressed a preference for dying at home compared to women. However, our study revealed that after adjusting for living situation, the association was no longer significant. This suggests that social context, such as whether a person lives alone or with others, partly explain gender differences found in place of death. These findings are consistent with those of Nilsson et al. (2023), who found that patients with cancer in Sweden, receiving support from relatives, were more likely to achieve their wish of dying at home. Nevertheless, this does not mean that gendered social structures might not still indirectly contribute to the observed differences in place of death. As Wong and Phillips (2023) point out, women are more likely to live alone due to longer life expectancy, widowhood and often have fewer caregiving resources at the end of life.

4.2 Days of enrollment

Another gender difference observed in this study was that, on a population-based level in Skåne, men had a significantly shorter duration of enrollment in specialized palliative care compared to women. These findings align with those of Müller et al. (2022), which identified female gender as an independent predictor of earlier referral. Furthermore, such results align with broader evidence about delayed referral to palliative care. Mathews, Hannon, and Zimmermann (2021) emphasize that despite strong evidence supporting early integration, referral to specialized palliative care is often left to the discretion of individual oncologists, contributing to variability and inequity in access. They advocate for more structured models of integration, including automated, criteria-based referral systems triggered by factors such as prognosis or symptom burden, to help standardize and improve the timeliness of access. Implementing such systems may also reduce gender disparities in enrollment duration, ensuring more equitable access to the well-established benefits of early specialized palliative care, including improved symptom management, enhanced quality of life, and reduced use of non-beneficial interventions at the end of life.

4.3 End-of-life care planning

4.3.1 Serious illness conversation

In terms of serious illness conversations (i.e. “brytpunktssamtal”), no statistically significant gender differences were observed in either the training or validation cohorts. Conversations were documented at high rates for both men and women, whether held with patients or their relatives. This suggests that once enrolled in specialized palliative care, patients of both genders receive similarly structured communication about their care trajectory. These findings contrast with earlier research suggesting that men may be less likely to engage in or initiate serious illness discussions (Fletcher et al., 2013; Sharma et al., 2015) and may reflect improved integration of standardized communication practices within specialized palliative care in Region Skåne. However, it is important to acknowledge the conceptual limitations of the serious illness conversation measure used in this study. As previously mentioned, the variable captures documentation of a specific conversation referred to in Swedish as a “brytpunktssamtal”, which is a conversation held when care transitions to end-of-life care (Regional cancercentrum, 2023). This form of conversation, while crucial, typically occurs late in the disease trajectory in Swedish health care.

In contrast, the pilot study applied the concept of serious illness conversations as it was developed within the Serious Illness Care Program (Bernacki et al., 2014). Boo Hammas et al. (2025) investigated whether documentation existed for discussions covering four key components: “information about disease progression or prognosis; discussion of patient priorities; treatment planning in case of deterioration or decisions to withhold life-sustaining treatment; and options for symptom relief” (Boo Hammas et al., 2025, p. 5). Documentation of these components were evaluated within the month prior to referral to specialized palliative care. This type of communication reflects a more proactive and comprehensive approach, is considered important for advance care planning and goals-of-care discussions and is therefore appropriate to introduce at an earlier stage of the disease trajectory. The structure and content of these conversations closely align with the concept of "samtal vid allvarlig sjukdom,", a relatively recent addition to the Swedish healthcare system (introduced in 2022), which emphasizes early, person-centered discussions about prognosis, patient values, and future care planning (Nationellt system för kunskapsstyrning, 2022). Therefore, the narrower scope of serious illness conversations assessed in the current study limits direct comparability with the pilot study and provides limited insight into end-of-life care planning at earlier stages of the disease trajectory.

4.3.2 Preferred place of death conversation

When focusing specifically on conversations about preferred place of death, adjusted analyses (of the validation cohort) showed that men were more likely than women to have a documented conversation regarding their preferred place of death. This contrasts with findings from a German study by Seifart et al. (2020), which found that female cancer patients were significantly more likely than male patients to engage in discussions about various aspects of end-of-life nursing care, including conversations related to preferred place of death. Seifart et al. suggested that women were generally more open to broad end-of-life discussions, while men preferred focusing on specific medical and organizational aspects. Differences in cultural context, patient preferences, and clinical routines may partly explain these different results.

The organizational context in Region Skåne during the study period may also have influenced these patterns. In 2013, Region Skåne adopted a strategic plan for specialized palliative care and other advanced medical care at home (Sirona, 2019). It emphasized the importance of person-centered care, equitable access, and structured communication about end-of-life preferences. Communication was established as a fundamental pillar of specialized palliative care, alongside symptom management, teamwork, and support for families. This focus likely contributed to the systematic inclusion of conversations about preferred place of death as part of standard care processes. The strong emphasis on proactive communication and individualized care planning in specialized palliative care services may partly explain the high documentation rates of preferred place of death conversations (and serious illness conversation) observed among both genders in this study.

4.4 Symptom assessment and management

No significant gender differences were observed in the assessment and management of symptoms, including pain assessment, other symptom assessments, and provision of pain relief, all of which demonstrated consistently high coverage. These findings suggest that, within specialized palliative care, symptom assessment and treatment practices are systematically implemented and contribute to equitable care delivery across genders. This is consistent with findings from Falk et al. (2016), who reported no gender differences in symptom distress among patients with a documented palliative care designation. However, in the broader hospital setting, women had to report higher levels of symptom distress than men for their symptoms to be documented, indicating that gender disparities in symptom assessment may persist outside of specialized palliative care environments. Similar findings were reported by Blum et al. (2024), who found that among hospitalized heart failure patients referred to palliative care, women had a higher symptom burden than men at the time of referral. These findings highlight the need for well-established symptom assessment and management practices across all healthcare settings to ensure equitable palliative care delivery and to minimize gender disparities, particularly given that early integration of palliative care is essential for achieving high-quality care within specialized palliative care contexts.

4.5 Recommendations for future research and policies

While the quality of care was largely found to be equitable across genders within specialized palliative care in Region Skåne, differences in place of death and enrollment duration suggest persistent disparities in access and timeliness of referral. Future research should therefore investigate gender differences earlier in the disease trajectory and across other healthcare settings, as exemplified by Falk et al. (2016), to better understand when inequities arise and how they may differ from the patterns observed in specialized palliative care. Moreover, there is a lack of qualitative studies in Sweden exploring how gender influences patient and caregiver experiences in palliative care. Such research could offer valuable insights into how social roles, coping strategies, and communication styles shape end-of-life care needs, as highlighted by Ullrich et al. (2019). Greater understanding of these factors could support the development of more gender-sensitive and person-centered palliative care practices.

Future research should also broaden its focus beyond binary gender classifications to explore how gender identity influence experiences and outcomes in specialized palliative care. Current systems (such as the Swedish Palliative Care Registry) typically collect only binary gender data, limiting the ability to capture the experiences of non-binary and transgender individuals, who may face unique barriers to care. Haviland et al. (2021) highlight that sexual and gender minority patients often encounter structural barriers, discrimination, and lack of culturally competent care within palliative services, underscoring the need for more inclusive approaches to documentation and service delivery. Furthermore, to gain deeper knowledge of inequities in palliative care, future research should apply an intersectional framework to examine how gender intersects with other social determinants of health, such as socioeconomic status, ethnicity, migration background, and living situation. As Butler et al. (2023) emphasize, intersectionality highlights that individuals' experiences are shaped by multiple, overlapping factors, and recognizing these interactions is essential for understanding and addressing disparities in palliative care.

In parallel with research efforts, policy changes are needed to promote more equitable palliative care. First, as emphasized by Elwér, Waldau, and Strehlenert (2016), policies should move beyond gender-blind approaches and explicitly recognize gender as an integral part of palliative care, acknowledging how gendered norms and social structures influence healthcare access, experiences, and outcomes. Similarly, Grindrod (2020) underscores that social determinants, such as gender, fundamentally shape individuals' choices and opportunities at the end of life, highlighting the importance of adopting public health frameworks that address these structural inequities.

Secondly, it is essential to ensure that existing policies and concepts promoting early and comprehensive serious illness conversations, such as "samtal vid allvarlig sjukdom," are consistently implemented in practice. Important stakeholders within palliative care in Region Skåne are already working toward this goal by educating healthcare professionals and providing accessible resources on how to conduct these conversations effectively (Palliativt Utvecklingscentrum, n.d.; Regionalt cancercentrum Syd, 2025). Strengthening these efforts and ensuring widespread uptake across healthcare settings will be crucial for promoting end-of-life care planning at an earlier stage in the disease trajectory and may indirectly contribute to reducing gender disparities in palliative care enrollment duration and access.

4.6 Strengths and limitations

This study employed a retrospective cohort design using data from the Swedish Palliative Care Registry. A key strength of this design is it enables an efficient and cost-effective way of collecting data (Wang & Kattan, 2020). Another strength of this study is that the data is based on standardized end-of-life questionnaires which include explanation texts and structured data entry, which supports the reliability of the collected data. The Swedish Palliative Care Registry has also applied various strategies to strengthen the validity of their data, including logical checks during data entry, external registry matching, and periodic sample audits comparing registry entries with medical records and next-of-kin questionnaire (Svenska Palliativregistret, 2025; Svenska Palliativregistret, 2022).

However, variations in how different health care staff or care teams interpret questions or respond, especially those involving subjective judgments, may still affect data consistency (Aschengrau & Seage, 2020). For instance, a suspiciously high proportion of patients were documented as having complete pain relief (74% of total study population), raising concerns about the reliability of this variable. This may reflect information bias due to institutional pressure to document positive outcomes rather than actual clinical effectiveness. As a response, pain relief was dichotomized into a binary variable with “yes” or “no” category (excluding difference between complete or partial pain relief) to improve consistency and reduce variability in interpretation across reporting units, thus improving the reliability of the measure within this study.

Approximately 32% of the study population was enrolled in specialized palliative care less than one week before death. For these patients, many of the documented responses in the end-of-life questionnaire may reflect care received in other healthcare settings prior to referral, rather than care provided exclusively within specialized palliative care. Additionally, some questions in the questionnaire, such as the one regarding whether the patient received a serious illness conversation, are not linked to a specific time frame (Svenska Palliativregistret, 2024a). This lack of temporal specificity further complicates the interpretation of when and in what context the reported care was delivered. As a result of these two issues, the findings may not fully capture gender differences in care provision specific to the specialized palliative care context. This introduces limitations to the internal validity of the study, as it complicates the ability to determine whether observed outcomes are attributable to specialized palliative care or to earlier care experiences (Carlson & Morrison, 2009; Wang & Kattan, 2020). Nevertheless, since days of enrollment and serious illness conversations were key variables of interest and important indicators of palliative care quality, these were still included in the analysis.

During the analysis, certain data-entry errors were discovered. Discrepancies were identified in the dataset in the form of outliers in days of enrollment, where some patients were found to have an unexpectedly long duration of enrollment. Investigation revealed that these discrepancies were due to errors in the documentation of admission dates. These outliers (defined as patients with more than 2.5 years of enrollment) were reviewed in medical records by the supervisor, and the incorrect admission dates were corrected. Nevertheless, due to time constraints, it was not possible to systematically investigate the occurrence of such discrepancies across the entire sample. As a result, this issue introduces a risk of information bias (specifically misclassification bias) which limits the reliability of findings related to the variable days of enrollment (Aschengrau & Seage, 2020). Future analyses are planned by the research team to further investigate the probability of data-entry errors in admission dates using random sampling methods.

During the review of long enrollment duration outliers, one patient was identified as not having a recorded cancer diagnosis. In this study, cancer diagnosis was determined based on responses to the end-of-life questionnaire (Svenska Palliativregistret. 2024a), rather than cause of death data, as the focus was on investigating gender differences among patients with a cancer diagnosis, regardless of whether cancer was listed as the primary cause of death. To address this, we reviewed and discussed the primary death causes listed in the dataset, assessing the plausibility of the diagnoses being consistent with cancer-related deaths. No clear deviations were found. However, due to time constraints, a more detailed review (such as checking medical records for patients who did not have cancer as primary cause of death) could not be performed. As such, a risk of misclassification remains, which should be considered when interpreting the findings.

Another strength of the cohort study design is its ability to assess associations between exposures and multiple outcomes, while adjusting for confounding (Aschengrau & Seage, 2020). In this study, adjustment was made for age at death and type of palliative care. Potential confounders were identified through literature review and consultation with the supervisor. However, data on important potential confounders, such as socioeconomic status (Davies et al., 2019), ethnicity or migration background (Carlsson & Hjelm, 2021), comorbidity burden (Legler et al., 2011), and informal caregiving support (Adejoh et al., 2021) were not available. The absence of these variables introduces the possibility of residual confounding, which should be considered when interpreting the observed gender differences.

Furthermore, utilizing registry data with nearly complete coverage of specialized palliative care deaths in the region helps to minimize selection bias (Carlson & Morrison, 2009). This population-based approach enhances the external validity of the findings and provides a detailed view of real-world care practices (Wang & Kattan, 2020). However, the study collected data from a region (Skåne, Sweden) with a highly resourced and structured national palliative care system. This makes the findings highly applicable to similar settings but potentially less generalizable to low-resource or culturally different palliative care settings.

Additionally, the large sample size ensures sufficient statistical power to detect gender differences across key quality indicators (Wang & Kattan, 2020). However, missing values in the measurements could impact statistical power and introduce potential bias. To address this, missing values are presented in the tables for transparency and sensitivity analyses were conducted to test the robustness of findings under varying assumptions about missing data. For instance, in the analysis of pain relief (the variable with the largest proportion of missing values) missing responses were recoded as "yes," which was considered the most likely response. Consistent with recommendations by Mathur (2022), such sensitivity analyses allow for an evaluation of potential bias due to missing data, thereby strengthening the validity of the complete-case analysis.

Even though there are limitations to consider when interpreting these results, this study provides important new insights into gender differences in specialized palliative care at a population-based level in Skåne. These findings can help guide future research and inform policy recommendations within the local healthcare context.

5. Conclusion

This study found that while serious illness conversation, symptom assessment and management were equitable between genders within specialized palliative care in Region Skåne, men had significantly shorter enrollment durations, were more likely to die at home and more likely to have preferred place of death conversation. These differences suggest persistent disparities in access and timeliness of referral. Addressing gender disparities and structural inequalities in palliative care is not only a clinical and ethical imperative but also a critical public health issue. Ensuring equitable access to timely, person-centered palliative care promotes health equity, reduces avoidable suffering, both for the patient and next-of-kin. Future research should examine gender differences earlier in the disease trajectory, across other healthcare settings, apply an intersectional approach, and include non-binary and transgender individuals to gain deeper knowledge of gender disparities in palliative care experiences. Such insights will be crucial for informing the development of more gender-sensitive policies and practices in palliative care.

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Tables

Table 1. Demographic and clinical characteristics of adult patients with cancer enrolled in specialized palliative care who were included in the pilot study in Skåne, stratified by gender (training cohort, n = 134).

	Men (n = 65, 48.5%)	**Women** (n=69, 51.5%)	**Total** (n=134)	**P-value**
Age in years, Mean (SD)	71.9 (8.2)	71.9 (12.7)	71.9 (10.7)	0.964
Living situation				
Living alone	15 (23.1%)	32 (46.4%)	47 (35.1%)	0.005*
Living with others	50 (76.9%)	37 (53.6%)	87 (64.9%)	
Type of palliative care				
Inpatient palliative care	31 (47.7%)	47 (68.1%)	78 (58.2%)	0.017*
Home-based palliative care	34 (52.3%)	22 (31.9%)	56 (41.8%)	
Symptoms in the Last Week of Life				
Pain				
Yes	61 (93.9%)	65 (94.2%)	126 (94.0%)	1.000
No	4 (6.2%)	4 (5.8%)	8 (6.0%)	
Rattling breathing				
Yes	28 (43.1%)	25 (36.2%)	53 (39.6%)	0.418
No	37 (56.9%)	44 (63.8%)	81 (60.5%)	
Nausea				
Yes	15 (23.1%)	17 (24.6%)	32 (23.9%)	0.832
No	50 (76.9%)	52 (75.4%)	102 (76.1%)	
Anxiety				
Yes	49 (75.4%)	53 (76.8%)	102 (76.1%)	0.846
No	16 (24.6%)	16 (23.2%)	32 (23.9%)	
Dyspnea				
Yes	18 (27.7%)	13 (18.8%)	31 (23.1%)	0.225
No	47 (72.3%)	56 (81.2%)	103 (76.9%)	
Confusion				
Yes	15 (23.1%)	14 (20.3%)	29 (21.6%)	0.695
No	50 (76.9%)	55 (79.7%)	105 (78.4%)	

Table 1. (continued)

Medical and Nursing Care				
Pressure ulcers upon arrival				
Yes	9 (13.9%)	11 (15.9%)	20 (14.9%)	0.707
No	56 (86.2%)	57 (82.6%)	113 (84.3%)	
Missing	0 (0.0%)	1 (1.5%)	1 (0.8%)	
Pressure ulcers at death				
Yes	22 (33.9%)	27 (39.1%)	49 (36.6%)	0.526
No	43 (66.2%)	42 (60.9%)	85 (63.4%)	
Oral health assessment performed				
Yes	55 (84.6%)	59 (85.5%)	114 (85.1%)	0.885
No	10 (15.4%)	10 (14.5%)	20 (14.9%)	
Parenteral fluids in last 24 hours				
Yes	1 (1.5%)	2 (2.9%)	3 (2.2%)	1.000
No	64 (98.5%)	67 (97.1%)	131 (97.8%)	
Last doctor’s visit before death				
Day/days	64 (98.5%)	67 (97.1%)	131 (97.8%)	1.000
Week/weeks	1 (1.5%)	2 (2.9%)	3 (2.2%)	
Month or more	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Presence and Bereavement Support				
Presence at time of death				
Relatives	44 (67.7%)	39 (56.5%)	83 (61.9%)	0.083
Relatives and staff	14 (21.5%)	11 (15.9%)	25 (18.7%)	
Staff	2 (3.1%)	9 (13.0%)	11 (8.2%)	
Nobody	5 (7.7%)	10 (14.5%)	15 (11.2%)	
Bereavement conversation offered to relatives				
Yes	65 (100.0%)	68 (98.6%)	133 (99.3%)	1.000
No	0 (0.0%)	1 (1.5%)	1 (0.8%)	

*Statistically significant ($p < 0.05$).

Table 2. Quality indicators of palliative care stratified by gender among adult patients with cancer enrolled in specialized palliative care who were included in the pilot study in Skåne (training cohort, n = 134).

	Men (n = 65, 48.5%)	**Women** (n=69, 51.5%)	**Total** (n=134)	**P-value**
Days of enrollment, Median (IQR)	16 (7–37)	24 (10–59)	19 (7-51)	0.098
Place of death				
Palliative care facility	31 (47.7%)	47 (68.1%)	78 (58.2%)	0.017*
Private home	34 (52.3%)	22 (31.9%)	56 (41.8%)	
End-of-Life Care Planning				
Serious illness conversation with patient				
Yes	62 (95.4%)	67 (97.1%)	129 (96.3%)	0.674
No	3 (4.6%)	2 (2.9%)	5 (3.7%)	
Serious illness conversation with relatives				
Yes	65 (100.0%)	68 (98.6%)	133 (99.3%)	1.000
No	0 (0.0%)	1 (1.5%)	1 (0.8%)	
Preferred place of death conversation				
Yes	57 (87.7%)	57 (82.6%)	114 (85.1%)	0.409
No	8 (12.3%)	12 (17.4%)	20 (14.9%)	
Symptom Assessment and Management				
Pain assessment performed				
Yes	64 (98.5%)	69 (100.0%)	133 (99.3%)	0.301
No	1 (1.5%)	0 (0.0%)	1 (0.75%)	
Assessment of other symptoms performed				
Yes	57 (87.7%)	60 (87.0%)	117 (87.3%)	0.898
No	8 (12.3%)	9 (13.0%)	17 (12.7%)	
Pain relief				
Yes	61 (93.9%)	66 (95.7%)	127 (94.8%)	1.000
No	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Missing	4 (6.2%)	3 (4.4%)	7 (5.2%)	

*Statistically significant ($p < 0.05$), but when adjusted for living situation the association becomes not significant ($p = 0.06$).

Table 3. Demographic and clinical characteristics of adult patients with cancer enrolled in specialized palliative care in Skåne, stratified by gender (the validation cohort, n=15 861).

	Men (n = 7925, 50.0%)	**Women** (n=7936, 50.0%)	**Total** (n=15 861)	**P-value**
Age in years, Mean (SD)	72.1 (11.6)	71.8 (12.2)	71.9 (11.9)	0.068
Type of palliative care				
Inpatient palliative care	4865 (61.4%)	5250 (66.2%)	10 115 (63.7%)	< 0.001*
Home-based palliative care	3060 (38.6%)	2686 (33.9%)	5746 (36.2%)	
Symptoms in the Last Week of Life				
Pain				
Yes	6788 (85.7%)	6891 (86.8%)	13 679 (86.2%)	0.042
No	1112 (14.0%)	1027 (12.9%)	2139 (13.5%)	
Missing	25 (0.3%)	18 (0.2%)	43 (0.3%)	
Rattling breathing				
Yes	3831 (48.3%)	3574 (45.0%)	7405 (46.7%)	< 0.001*
No	4055 (51.2%)	4332 (54.6%)	8387 (52.9%)	
Missing	39 (0.5%)	30 (0.4%)	69 (0.4%)	
Nausea				
Yes	1178 (14.9%)	1747 (22.0%)	2925 (18.4%)	< 0.001*
No	6632 (83.7%)	6086 (76.7%)	12 718 (80.2%)	
Missing	115 (1.5%)	103 (1.3%)	218 (1.4%)	
Anxiety				
Yes	4889 (61.7%)	4826 (60.8%)	9715 (61.3%)	0.228
No	2896 (36.5%)	2975 (37.5%)	5871 (37.0%)	
Missing	140 (1.8%)	135 (1.7%)	275 (1.7%)	
Dyspnea				
Yes	2104 (26.6%)	2073 (26.1%)	4177 (26.3%)	0.521
No	5757 (72.6%)	5805 (73.2%)	11 562 (72.9%)	
Missing	64 (0.8%)	58 (0.7%)	122 (0.8%)	
Confusion				
Yes	2231 (28.1%)	1940 (24.5%)	4171 (26.3%)	< 0.001*
No	5565 (70.2%)	5865 (73.9%)	11 430 (72.1%)	
Missing	129 (1.6%)	131 (1.7%)	260 (1.6%)	

Table 3. (continued)

Medical and Nursing Care				
Pressure ulcers upon arrival				
Yes	1292 (16.3%)	1337 (16.9%)	2629 (16.6%)	0.362
No	6583 (83.1%)	6552 (82.6%)	13 135 (82.8%)	
Missing	50 (0.6%)	47 (0.6%)	97 (0.6%)	
Pressure ulcers at death				
Yes	2313 (29.2%)	2417 (30.5%)	4730 (29.8%)	0.091
No	5560 (70.2%)	5478 (69.0%)	11 038 (69.6%)	
Missing	52 (0.7%)	41 (0.5%)	93 (0.6%)	
Oral health assessment performed				
Yes	6 721 (84.8%)	6849 (86.3%)	13 570 (85.6%)	0.023*
No	1114 (14.1%)	1021 (12.9%)	2135 (13.5%)	
Missing	90 (1.1%)	66 (0.8%)	156 (1.0%)	
Parenteral fluids in last 24 hours				
Yes	551 (7.0%)	513 (6.5%)	1064 (6.7%)	0.222
No	7364 (92.9%)	7409 (93.4%)	14 773 (93.1%)	
Missing	10 (0.1%)	14 (0.2%)	24 (0.2%)	
Last doctor's visit before death				
Day/days	6941 (87.6 %)	6965 (87.8%)	13 906 (87.7%)	0.886
Week/weeks	877 (11.1%)	877 (11.1%)	1754 (11.1%)	
Month or more	84 (1.1%)	78 (1.0%)	162 (1.0%)	
Missing	23 (0.3%)	16 (0.2%)	39 (0.3%)	
Presence and Bereavement Support				
Presence at time of death				
Relatives	4275 (53.9%)	4,302 (54.2%)	8577 (54.1%)	0.063
Relatives and staff	1548 (19.5%)	1481 (18.7%)	3029 (19.1%)	
Staff	895 (11.3%)	991 (12.5%)	1886 (11.9%)	
Nobody	1193 (15.1%)	1148 (14.5%)	2341 (14.8%)	
Missing	14 (0.2%)	14 (0.2%)	28 (0.2%)	
Bereavement conversation offered to relatives				
Yes	7688 (97.0%)	7683 (96.8%)	15 371 (96.9%)	0.871
No	179 (2.3%)	182 (2.3%)	361 (2.3%)	
Missing	58 (0.7%)	71 (0.9%)	129 (0.8%)	

*Statistically significant ($p < 0.05$).

Table 4. Quality indicators of palliative care stratified by gender among adult patients with cancer enrolled in specialized palliative care in Skåne (validation cohort, n = 15 861).

	Men (n = 7925, 50.0%)	**Women** (n=7936, 50.0%)	**Total** (n=15 861)	**P-value**
Days of enrollment, Median (IQR)	13 (4–36)	14 (5-40)	14 (5–38)	< 0.001*
Place of death				
Palliative care facility	4879 (61.6%)	5244 (66.1%)	10 123 (63.8%)	< 0.001*
Private home	2935 (37.0%)	2566 (32.3%)	5501 (34.7%)	
Nursing/other group home	19 (0.2%)	21 (0.3%)	40 (0.3%)	
Short-term care unit	30 (0.4%)	44 (0.6%)	74 (0.5%)	
Other hospital facilities	26 (0.3%)	28 (0.4%)	54 (0.3%)	
Other	36 (0.5%)	33 (0.4%)	69 (0.4%)	
End-of-Life Care Planning				
Serious illness conversation with patient				
Yes	7122 (89.9%)	7195 (90.7%)	14 317 (90.3%)	0.108
No	733 (9.3%)	677 (8.5%)	1410 (8.9%)	
Missing	70 (0.9%)	64 (0.8%)	134 (0.8%)	
Serious illness conversation with relatives				
Yes	7424 (93.7%)	7437 (93.7%)	14 861 (93.7%)	0.746
No	432 (5.5%)	423 (5.3%)	855 (5.4%)	
Missing	69 (0.9%)	76 (1.0%)	145 (0.9%)	
Preferred place of death conversation				
Yes	6995 (88.3%)	7077 (89.2%)	14 072 (88.7%)	0.062
No	544 (6.9%)	488 (6.2%)	1032 (6.5%)	
Missing	386 (4.9%)	371 (4.7%)	757 (4.8%)	
Symptom Assessment and Management				
Pain assessment performed				
Yes	6704 (84.6%)	6725 (84.7%)	13 429 (84.7%)	0.869
No	1174 (14.8%)	1169 (14.7%)	2343 (14.8%)	
Missing	47 (0.6%)	42 (0.5%)	89 (0.6%)	

Table 4. (continued)

Assessment of other symptoms performed				
Yes	3675 (46.4%)	3694 (46.6%)	7369 (46.5%)	0.854
No	4142 (52.3%)	4139 (52.2%)	8281 (52.2%)	
Missing	108 (1.4%)	103 (1.3%)	211 (1.3%)	
Pain relief				
Yes	6778 (85.5%)	6880 (86.7%)	13 658 (86.1%)	0.448
No	10 (0.1%)	7 (0.1%)	17 (0.1%)	
Missing	1137 (14.4%)	1049 (13.2%)	2186 (13.8%)	

*Statistically significant ($p < 0.05$).

Table 5. Negative binomial regression models (unadjusted and adjusted) of days of enrollment in specialized palliative care by gender among adult patients with cancer in Skåne (validation cohort), presented as incidence rate ratios (IRR) with 95% confidence intervals (CI).

Outcome variable **Exposure variable (reference group)**	**Unadjusted, IRR (95% CI)**	**Adjusted**, IRR (95% CI)**
Days of enrollment Gender (female)	0.92 (0.88 – 0.96)*	0.85 (0.82 – 0.88)*

**Adjusted for age at death and type of palliative care.

*Statistically significant results.

Table 6. Logistic regression models (unadjusted and adjusted) of end-of-life planning, symptom assessment and treatment measures by gender among adult patients with cancer enrolled in specialized palliative care in Skåne (validation cohort), presented as odds ratios (OR) with 95% confidence intervals (CI).

Outcome variable **Exposure variable (reference group)**	**Unadjusted, OR (95% CI)**	**Adjusted**, OR (95% CI)**
End-of-Life Care Planning		
Serious illness conversation with patient, Gender (female)	1.09 (0.98 – 1.22)	1.11 (0.99 – 1.24)
Serious illness conversation with relatives, Gender (female)	1.02 (0.89 – 1.17)	1.02 (0.89 – 1.18)
Preferred place of death conversation Gender (female)	1.12 (0.99 – 1.28)	1.20 (1.06 – 1.37)*
Symptom Assessment and Treatment		
Pain assessment performed Gender (female)	1.01 (0.92 – 1.10)	1.00 (0.92 – 1.09)
Assessment of other symptoms performed Gender (female)	1.01 (0.94 – 1.07)	1.00 (0.94 – 1.06)
Pain relief Gender (female)	1.45 (0.55 – 3.81)	1.47 (0.55 – 3.86)

**Adjusted for age at death and type of palliative care.
*Statistically significant results.

Popular science summary

Gender has been an overlooked subject within end-of-life care. This study looked at whether there are gender differences in the quality of care received by patients with cancer in specialized palliative care in southern Sweden. Overall, the results showed that men and women received similar care when it came to symptom assessment, symptom management, and communication, such as serious illness conversations, once they were enrolled. However, men had a noticeably shorter time in specialized palliative care compared to women and were more likely to die at home rather than in a palliative care facility. Men were also slightly more likely to have had a conversation about their preferred place of death documented in their medical records.

These differences suggest that gender disparities may exist in how and when patients are referred to palliative care, rather than in the care they receive once enrolled in specialized palliative care. From a public health perspective, ensuring that all patients—regardless of gender—have timely and fair access to person-centered palliative care is important for promoting health equity and reducing unnecessary suffering at the end of life. More research is needed to understand gender differences in the early stage of serious illness, in other healthcare settings, and among non-binary and transgender individuals. Future studies should also explore how gender interacts with other social and cultural factors and investigate how it shapes palliative care experiences. Gaining this deeper understanding can help pave the way for integrating more gender-sensitive approaches into palliative care practice.