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Article title: Association of patient sex with utilization of palliative care: a population-based study in Ontario, Canada

Article authors: Kevin Gitau MD, Anjie Huang MSc, Sarina R. Isenberg MA PhD, Nathan Stall MD PhD, Jonathan Ailon MD MSc, Chaim M. Bell MD PhD, Kieran L. Quinn MD PhD

Reviewer 1: Name withheld

Introduction:

P1, Line 6: "increasing calls" - should have more than one citation here to highlight this idea

The citation provided is part of the Canadian Institute for Health Research (CIHR)'s strategic plan, that is contributed to by a large number of policy stakeholders including researchers, politicians, civil servants amongst others, and guides priorities for a majority of government funded health research in Canada

P3, Line 45-46: "...did not examine potential underlying mechanisms to explain their findings" can you provide some examples of what was missing exactly?

This sentence has been revised to provide more clarity:

However, these findings were part of secondary analyses intended to be hypothesis-generating. (Page 5)

Methods:

Study cohort, Line 42: What was the justification for including folks between 2010 and 2018 only?

The following sentence has been added to clarify this time period

This time period was chosen as there was reliably complete and updated data in the linked administrative health databases used to define the decedent cohort, as well as in the other databases (Page 7, Study Cohort)

Study cohort, Line 45: Did the death certificate explicitly state 'sudden death' or did the authors classify people as 'sudden death' based on the patients' disease, cause of death, etc.? Clarify how this was defined/determined.

This was based on the categorization of patient into the sudden death trajectory. An extensive list of all ICD-10 diagnostic codes included in the sudden death category can be found in supplementary table 3

Patient/Physician Characteristics, Line 24-25: Unclear how the three groupings were created;

was any “terminal illness” grouped under cancer? Were all “frailty” cases grouped as dementia?
I would think not, but further justification needed here.

The diagnoses included in various illness trajectories, have been previously described in other literature, and validated. Terminal illness includes a large number of cancer and cancer related diagnoses. Frailty includes a large number of dementia, and non-dementia related diagnoses.

The following section has been added to clarify this point:

Male and female patients were stratified into 3 end-of-life illness trajectories on the basis of their cause of death: cancer (terminal illness), organ failure, and dementia (frailty). Those decedents categorized in the sudden death trajectory were excluded from the analysis. These trajectories, that cover a wide range of causes of death/disease codes, have been shown to strongly predict end-of-life palliative care receipt, with those in the terminal illness group having the highest probability of receiving palliative care.²¹ The definitions and uses for these trajectories have been extensively described and validated elsewhere.^{21,27-31} (Please see Supplementary Table 3 for further details of ICD-10 codes used) (*Page 8, Patient Characteristics*)

Access to Palliative Care – Outcome, Line 22: Who was responsible for determining the categorization of all patients? Was there training involved for this typology? Could see this being a very subjective determination unless there is a standardized process.

The following section has been added to clarify this point:

Secondary outcomes included first, approach to palliative care during the first hospitalization in the last year of life using a method that has been described and validated in previously published work, which categorizes these hospitalization episodes as: palliative intent likely, palliative intent unlikely, and no palliative intent (Supplementary Table 5);⁴⁰⁻⁴³ Briefly, this categorization takes into account the patients primary reason for admission, status of their most responsible provider as a palliative practitioner, and in-hospital palliative care consultations. The components of this categorization are captured at the patient level by trained chart abstracters at the Canadian Institute for Health Information (CIHI). Please see Supplementary Table 5 for details on scoring components. (*Page 10, Palliative Care Utilization – Outcome*)

Results

Table 2 is missing from submission completely: Unable to verify results in the text; although there are a few places where values reported are different than the abstract – please double check your numbers are actually accurate.

Have rechecked figures, and have corrected any inaccuracies

Supplementary Table 2: Unfamiliar if this is required as part of Ontario's Personal Health Information Protection Act – was this included for transparency of where data was taken from? If not, I'm not sure this table is a value add. Would consider removing.

We included this table so that other researchers who may wish to conduct similar studies in the future using IC ES databases can easily track the datasets we used. The bibliography for this table was inadvertently removed, and has now been included at the bottom of the supplementary materials which provides references for figures cited

Discussion:

P2, Line 38: "...general sex difference" - what is meant by this?

Sentence in discussion has been removed

P3, Line 3: "Several studies have identified..." - only 2 studies cited here and are from 2011 and 2012

We have updated the literature search, and added one study. We also changed that sentence to the following:

Previous studies have identified sex-based differences in end-of-life decision making.^{44,45} (Page 16, Paragraph 1)

P3, Line 17: "...further studies are required to better correlate..." - are the authors only concerned with in-hospital-based palliative care? If this was the overall goal, then why were physician fee codes for all locations included (subacute, home, etc.)?

This sentence has been removed and this section has been re-written as above (Page 15)

P4, Line 52 "...can typically use tools" - use tools for what? Are the authors insinuating this is the avenue for reducing health inequities? The link is not clear.

This section has been revised (Page 16)

Limitations:

Method for classifying inpatient palliative care: In a Canadian context, this seems like it may be a reasonable method for characterizing access; although should be acknowledged in speaking to the generalizability of the authors' findings. There are still many other countries that do not have inpatient palliative care units, palliative care specialists, and internists are not considered as palliative care generalists.

We have added the following sentence in the last section of limitations section to highlight this point

Finally, our study reflects palliative care practice patterns that may not apply to other jurisdictions, especially those without a single-payer health insurance system. For example, in other regions internationally, there may not be the same ready access to

institutional palliative care, or physicians practicing as palliative care specialists and generalists. (Page 17)

References:

References 6, 10, 13, 14, 23, 24, 25, 27, 41, 42, 47 are all > 5 years old – strongly consider including more recent literature to support the authors' justification for this work.

More recent references have been added where newer studies were available

Reference 9: Unable to locate this reference – is it still under review? If so, it should not be included per journal guidelines.

Published reference. Updated to reflect this

Reference 38: Incomplete – please add the rest of the citation.

Revised

General comments:

Be mindful of plural vs. singular language – several instances where words are plural but should be singular and vice versa.

Revised

Reviewer 2: Review withheld