

The Rural Tax: Out-of-Pocket Costs for Patient Travel in British Columbia

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Abstract

Background: A significant concern for rural patients is the cost of travel outside of their community for specialist and diagnostic care. Often, these costs are downloaded to patients and their families.

Methods: Online retrospective provincial survey seeking to estimate the out-of-pocket (OOP) costs and associated experiences of rural patients traveling to access health care in British Columbia. Respondents were surveyed across five categories: Distance Traveled and Transportation Costs, Accommodation Costs, Co-Traveler Costs, Lost Wages, and Patient Stress.

Results: On average, costs for respondents were \$777 and \$674 for transport and accommodation, respectively. Patient perspectives obtained from this survey expressed a number of related issues, including the physical and psychosocial impacts of travel as well as delayed or diminished care seeking.

Conclusions: These key findings highlight the existing inequities between rural and urban patient access to health care. This study can directly inform policy related efforts towards mitigating the rural-urban gap in access to health care.

Background

Despite service planning challenges (low population densities spread over vast geographies, seasonal inclement weather), jurisdictions across Canada have developed relatively robust infrastructures to affect emergency patient transport [1–3]. Most provinces and territories have established effective mechanisms for inter-facility patient transport within regionalized care [4]. The need for rural patient access to specialist and procedural care has increased in the past two decades, as health care delivery in most jurisdictions in Canada has shifted from highly centralized health care planning and administration towards distributed accountabilities through varying types of authorities. This was motivated by increased local accountability and responsiveness alongside cost containment [5]. Decentralized governing bodies mark a regionalized structure, usually determined by geography, population distribution, and patient flows, assuming responsibility for implementing health services. Paradoxically, as functions devolve, centralization forces may also come into play through the reorganization of services in concentrated regional centres. This facilitates the inter-community sharing of resources to maximize efficiencies but can also lead to a reduction of specialized services for some communities, necessitating patient travel to access care. For example, in Saskatchewan (Canada), 72 percent of all are performed in Regina and Saskatoon. Lavis and Boyko found that many people who live outside of those urban centres may not have the option of traveling there for care, partly due to accommodation costs [6]. Likewise, in *Monitoring Seniors Services* (Office of the Seniors Advocate, 2018), the seniors advocate noted the importance of public transportation in maintaining seniors' independence and optimal health, and emphasized the importance of services such as HandyDART and community programs such as *Better at Home* and *Volunteer Drivers* [7]. The authors also noted that reliance on non-subsidized transport (e.g., taxis) is not viable for many on a fixed income. Despite these policy imperatives, however, out-of-pocket transport costs to access health care remain substantial for many rural citizens and, in some instances, creates barriers in access to care.

One ongoing challenge for rural health planning is regional travel for patients that require a higher level of care than what is available locally. This may be for episodic or chronic specialist care, diagnostics or returning from an acute event or planned surgical care. In these instances, travel costs fall outside the health care system's responsibility, leading to downloaded expenses for patients and their families. While this is not a concern in urban centres with ready access to specialist care, including surgery, and diagnostics, it is a challenge for many rural residents. Out of pocket (OOP) costs include expenses for care that are not reimbursed by insurance, as well as patient-specific costs such as travel to the referral site, food, accommodation, and for some, co-traveler costs. The difficulties associated with unsupported travel are compounded for populations that lack the necessary financial and social resources. Despite this challenge to the fundamental tenant of public health care (access), there is scant understanding of costs incurred for rural patients who need to leave their communities for care.

There is a growing recognition of the plurality of health care experiences across the urban-rural divide. A rigorous exploration of the consequences of lack of immediate access to health care has been primarily confined to a comparison of health outcomes with urban patients as well as the psychosocial aspect of lack of access to care [8, 9]. In countries such as China and Australia where OOP costs for rural patients have been considered, there is evidence to show that financial considerations impact care-seeking behaviours. For example, in China, OOP costs have been shown to be "highly valued" in the decision-making process of patients on where to access care [10]. Similarly, in Australia studies have found that treatment decisions do appear to be shaped by conflict between treatment location, costs of traveling for care, disruption of life, as well as by the rigidity of available financial assistance policies [11–13]. Additionally, Lyford et al. highlighted difficulty arranging and undertaking travel in Western Australia as being one of the main reasons for poorer outcomes of Aboriginal people with cancer [14]. However so far, one of the fundamental consequences precipitated by lack of access – the financial impact resulting from the need to travel to receive care – has been underexplored in a North American Context.

The objective of this survey, administered in British Columbia (BC), Canada, was to estimate self-reported OOP costs for rural patients accessing health care away from their home communities, and furthermore move towards a comprehensive understanding of the costs of diminished rural health services. Through this, effective health policy recommendations can be made to improve access to health care and thereby reduce rural disparities.

Methods

A semi-structured survey questionnaire was administered online through Qualtrics to rural residents in BC from January to March 2020. This study involved four rural citizen-patient partners from communities representing a diversity of geography, size and distance to the nearest referral health centres. Patient partners were selected through BC's Patient Voices Network, a BC Patient Safety Quality Council initiative "linking patients, families and caregivers with health care partners who are seeking to engage the patient voices in their efforts to improve quality of care" [15]. Patient partners met monthly with the research team by teleconference during the development of the survey, as well as during the recruitment of participants and analysis of the data.

The survey instrument design was guided by previously conducted qualitative focus groups and a quantitative survey conducted by the Centre for Rural Health Research aiming to determine the health care priorities of rural citizen-patients and communities [16]. Participants were recruited through the research centres' outreach strategy, which includes advertisement through rural community-specific social media pages, local newspapers and chambers of commerce. Additionally, patient partners assisted in recruiting participants by circulating hardcopies of the survey to members of their home and adjacent communities, who may not have been able to access the survey online. The survey consisted of 68 closed questions (Likert scale/yes-no) and three open-ended questions. The instrument was pilot-tested in a small study sample (n = 56; ~5% of the total sample) from November 16 – December 4, 2019. Analysis of pilot-phase data revealed the need to capture more broadly on costs incurred when traveling to access health care. Based on this, we expanded the inclusion criteria to assess the costs incurred to access any health care covered by the provincial Medical Services Plan in BC, including surgical or specialist care and on-going treatment. The Medical Services Plan is the provincial health insurance program for BC residents and covers health care benefits including required medical services, diagnostic services, and some supplementary benefits [17]. The updated version of the survey was available on December 4th, 2019.

Eligibility criteria included: (i) rural citizens who were living in one of BC's Rural Practice Subsidiary Agreement communities for at least six months prior to participating in the survey, (ii) at least 19 years of age, and (iii) traveled from their community to access care (or escort someone who needed care) within the previous two years. Respondents were asked to report expenses for the most recent health care event that required travel (e.g., a surgical procedure, and/or cancer care). A few respondents included trips for multiple issues in one survey response, as travel was likely required for more than one condition at the same time. A descriptive analysis was performed to calculate frequency, proportions and the average cost per person. Six respondents reported outlying individual travel or accommodation costs and were removed as to provide reasonable estimates for average OOP spending. All costs are reported in Canadian Dollars as of 2020.

This study was co-funded by the Health Economics Simulation Modelling Methods Cluster, BC SUPPORT Unit and the Joint Standing Committee on Rural Issues, through the larger context of the Rural Surgical and Obstetrical Networks program, which works to stabilize and enhance surgical and obstetrical services in rural communities across BC. The study was approved by the Behavioral Research Ethics Board at the University of British Columbia (Certificate Number H19-00445).

Results

A total of 381 rural citizens participated in this survey across rural BC (Figure 1); this included 56 respondents from the pilot test sample. A total number of 339 participants started but did not submit the survey; their data was not included in our analysis.

Quantitative findings

Quantitative findings from the survey are grouped into seven categories: distance traveled and transportation costs, accommodation costs, costs by Health Authority, co-traveler costs, system-level supports, lost wages, and patient stress.

(1) Distance travelled and transportation costs

Figure 2 provides the cost in reference to the distance travelled. The average transport cost per person was \$777, and the average distance traveled per person to receive care was 1966 km. Among respondents who reported having pre-operative visit(s) for surgery (n=167), most (87%) traveled outside of their community for their visit(s). This was also the case for respondents reporting post-operative visit(s) (n=95) - 88% had to travel for their visit(s).

Airplane tickets were the most expensive type of transportation and cost on average \$1581. The most common type of transportation expense was gas, with 86% of respondents reporting this expense. Figure 3 provides more information on transportation costs.

(2) Accommodation costs

More than half of survey respondents (58%) reported paying for accommodation. These costs averaged \$674 per person and represented the second most expensive type of OOP spending. Half of the respondents reported hotel expenses, which was also the most expensive type of accommodation. Although BC Cancer Agency offers subsidized housing for patients, a high average number of nights resulted in the highest average total costs for this accommodation type (\$2205). Table 2 provides more information on accommodation costs.

Table 1
Average accommodation costs for all respondents

Accommodation type	# of respondents	% of respondents	Average, s.d cost per night (\$)	Average, s.d length of stay (nights)
Hotel	191	50	146 (54)	5 (5)
Family / friends	30	8	55 (35)	11 (22)
Short term rental	13	3	102 (25)	7 (7)
Other	9	2	41 (30)	7 (8)
Cancer Agency accommodation	6	2	63 (23)	35 (60)
Hostel	4	1	20 (8)	7 (7)

Table 2
Average accommodation expenses for co-travelers

Accommodation type	# of respondents	% of respondents	Average cost per night (\$)	Average length of stay (nights)
Hotel	89	23	140	5
Family / friends	10	3	46	12
Short term rental	4	1	144	10
Cancer Agency accommodation	2	0.5	51	76
Hostel	2	0.5	40	3
Other	2	0.5	120	21

(3) Co-traveler out-of-pocket costs

Family members or friends accompanying patients also incurred significant OOP costs. Thirty-one percent of respondents reported separate co-traveler transport and/or accommodation expenses: 13% reported co-traveler transport costs, averaging \$1077 per person and 25% reported co-traveler accommodation costs, averaging \$862 per person. Refer to Appendix 2 for more information on co-traveler transportation and accommodation expenses.

Most respondents (80%) traveled with someone who was not a health care professional. A spouse was the most common travel companion, followed by a child. While in the community of care, 18% of respondents had someone other than a co-traveler visit them. In total, 85% of respondents had a co-traveler and/or a visitor.

(4) System-level support for out-of-pocket costs

Only 14% of respondents reported having had some of their OOP transport and/or accommodation costs covered by organizations like the BC Travel Assistance Program or the First Nations Health Authority, the body responsible for the administration of health programs and services for B.C. First Nations [19]. Of the 53 people who received transport assistance, 37 did so through the BC Travel Assistance Program (mostly for ferry tickets), and five through the First Nations Health Authority. Only six respondents (2%) reported having received financial support for out-of-pocket accommodation spending. Five of these six respondents also reported assistance with transport costs.

(5) Lost wages

For many respondents, time spent away from home meant lost wages. When asked whether they had to take unpaid time off work to receive care, 93 respondents said yes and 56 said no (the remaining did not respond to this question). Those who lost wages missed an average of 17 workdays and an average of \$2276 in personal income.

(6) Patient stress

Respondents were asked to rank their overall stress on a scale of 1-10 for their most recent health care visit, where 0 is no stress/anxiety and 10 is the worst imaginable stress/anxiety. The 315 people who responded to this question reported an average stress level of 5.9. On average, those who had higher OOP costs reported higher levels of stress. In addition, higher-income respondents experienced less stress on average. Overall, the stress level was seemingly unaffected by whether or not someone received financial assistance. See Appendix 3 for reported levels of stress by amount spent and income categories.

The burden of traveling for care was particularly significant for maternity patients. Twenty-six percent of respondents reported that they were the caregiver of a child or other dependent. About half (52%) of these respondents with dependent(s) had to arrange for someone to care for their dependent(s) while they traveled to access care. Patient stress is discussed further in qualitative findings, below.

Qualitative Findings

Participants provided qualitative descriptions of their experience of travelling for care by answering three open-ended survey questions. A research assistant familiar with the context of the study used NVivo qualitative data software to organize themes derived from the data. Patient partners then reviewed the themes to validate them against their own experiences. Participant responses touched on multiple, intertwined themes including: challenges with transportation; the psychosocial impact of travel; the physical impact of travel; and delayed or diminished care-seeking. Each theme is described in detail below.

(1) Challenges with transportation

Aside from financial costs, participants expressed that having to arrange and undertake transport was the most difficult part of leaving their home community to access care. Many participants commented on transportation difficulties in relation to their particular geographic environment. For example, many participants discussed the impact of winter road conditions on traveling to receive health care. Several participants recounted being involved in motor vehicle accidents. Other respondents commented that they had to delay care-seeking because they could not drive on dangerous winter roads and could not afford to travel. However, even for those patients who could afford to fly rather than drive, some still experienced issues getting back to their community due to winter weather conditions:

“Even with being on disability and not having to deal with working around my work schedule, it is difficult to get out of my valley in the wintertime. Flights keep being cancelled and booked solid with no available seats. It’s great that the ticket is paid for but when you get stuck in [tertiary centre] for a week ‘cause of the flights being cancelled due to weather and no available seats the other expenses can really add up.”

Other participants in water-bound communities discussed particular geographical challenges for arranging transportation to their health care appointments based on set ferry schedules.

Regardless of geographic location within the province, many respondents reported the expense of ‘wear and tear’ on their vehicles, such as flat tires and the need for early replacement of a car due to unexpected high mileage.

One of the most stark transport challenges for participants in this study, however, was securing transportation back home after an urgent event. As one participant noted,

“I was taken by ambulance from [community] to [referral community], [then] had to find my way home. I was frail after a heart attack and it would have been difficult to take public transport.”

(2) Psychosocial impact of travel

Across a range of demographics, participants commented on the impact that having to travel for care had on their mental wellbeing. For many, dealing with a health condition had already caused some stress or anxiety, which was exacerbated by having to arrange and undertake travel. Unsurprisingly, those participants, who were not able to have a companion accompany them, expressed feeling particularly anxious or stressed as a result of having to leave their home communities while ill.

The psychosocial impact of traveling for care was particularly significant for maternity patients. Several participants in this study who had to leave their communities while pregnant to access pre-natal care or give birth, shared that the stress of having to pay for travel and accommodation may have contributed to their post-partum depression and/or anxiety. One participant from a remote community commented:

“Expectant mothers in [my community] all have to leave the valley to have our babies. There are a number of medical visits before the delivery that we also have to leave the valley for. These include ultrasounds [and] specialist visits. The flights for these are covered, but not any other expenses and it gets expensive and stressful. Many families have to pay for a hotel while out waiting for the baby’s arrival. I was lucky and found a friend to stay with, but it is not overly comfortable staying with people in their home while waiting for my baby to arrive. You can never really relax. Then your support system [is] not there to support you.”

Those respondents who did not express significant negative psycho-social consequences of travel all noted the presence of a strong support system. For example, one participant said:

“I actually do not feel having my procedure outside of my home community had a negative impact on my recovery. However, I am very fortunate to have a caring spouse who took time off work to care for me. If she had not been able to be with me it would have made pre and post-surgery out of my community very inconvenient and likely would have impacted my recovery.”

(3) Time away from home and the physical impact of travel

In addition to the psychosocial stressors of not having social support, many participants expressed a range of other reasons why having to spend time away from home was difficult for them. For example, some participants commented on the challenges of eating out and staying in hotels with specific dietary or allergy-related concerns. Other participants commented more generally on the impact of having to travel on their physical recovery. One participant noted, “As it [condition that required travel] was due to arthritis the driving was extremely hard on my muscles and joints” while another observed, “With chemo treatments I have no immune system to fight off germs.” Several other participants affirmed the difficulty of having to travel directly after a hospital procedure. As one participant noted, “...the most difficult procedure for me was the biopsy and I had to fly home with a bleeding and painful wound.”

Spending time away from home was particularly difficult for families with young children. Challenges included having to miss school to attend their parents’ medical appointments and needing specific types of care from parents that made it difficult to be away from them. For example, one woman described the impact of an unexpected surgery on her husband and young child:

“This was an unexpected emergency surgery that happened [the] same day symptoms presented themselves. My husband and son accompanied me to the hospital and when they decided I would require surgery and an overnight stay, my husband needed to head back home with our 10-month-old as he had not

prepared for an overnight [stay]. I was also not able to breastfeed due to medications and we had no breast milk on hand. This meant they needed to make the 2-hour trip back the next day to get me and then 2 hours home again. Lots of driving for a small child.”

(4) Rural gaps

Many participants expressed that having to travel for certain types of care was expected as a rural resident. However, they also felt that there were some essential services that should be available in their local community but were lacking. Most notably, there was a perception that many rural communities are lacking an adequate number of family doctors, leading to an over-reliance on emergency services. As a result of the closure of the walk-in clinic in their rural community, one participant even commented that they felt they had no other choice but to pay for private care.

A second rural health gap described by some respondents was the lack of alternatives to in-person specialist visits, such as visiting specialists or opportunities for virtual care. This was perceived by some participants to be the result of inadequate systems planning. As one person commented:

“[I] Travelled to a specialist appointment in [referral centre], and was required to stay overnight due to time of appointment. Information given at the appointment could easily have been conveyed by my GP in [home community] as it was not urgent. I could have saved the travel time, two days away from work, gas, hotel and food if this could have been done either through my regular doctor or even via skype or a health portal.”

(5) Delayed or diminished care seeking

Some participants commented that after considering the costs and impacts of travel, they delayed or diminished their health care seeking. One participant said, “My child should be assessed for autism but the trip to Prince George is unaffordable.” Delayed or diminished care seeking seemed to be more common among individuals who had to rely on others to take them to health care appointments. Others commented from the perspective of a family caregiver, noting the difficulty in ensuring access to recommended care:

“I cannot take time off work to get my disabled mother to some recommended medical therapies that are not available in or near my home community.”

Even the knowledge that a local doctor would likely refer the patient to a distant specialist prevented some individuals from seeking care in the first place:

“I have not gone to the Dr. knowing that they would send me to a specialist far away and we couldn't afford the costs at the time.”

While many participants commented that they had to budget and plan for costs associated with traveling for health care services, some expressed that they would have to cancel or reschedule their appointments at the last minute due to unexpected inability to afford travel. One respondent noted, “Postponed neurological appointments because I could not afford travel. Credit cards and credit line maxed out” while another commented, “[I] have had to cancel out of town medical appointments due to loss of wages and burden of finding child care.”

Limitations

Like all voluntary retrospective survey studies, we anticipate that BC residents who experienced greater difficulty in dealing with the financial and psychosocial burden of traveling for health care were more motivated to respond, thus potentially limiting the transferability of our findings to all rural BC residents. A cursory comparison of our cohort demographics with that of the BC rural population showed that proportions of respondents from various income brackets and ethnic groups were generally consistent with those of the BC population, however, the age distribution of survey respondents differed from that of rural BC, with the average age for our cohort (53) being much higher than that of Rural BC (42).

Balancing these potential limitations, however, was the relatively high number of responses and geographical spread of respondents. Regardless, as this is the first rigorous collection and presentation of comprehensive OOP costs for rural residents traveling to access health care, we feel it provides useful information to an under-explored area of health care experiences.

Discussion

At the time of pan-Canadian regionalization, Church and Baker suggested that Canada's geography makes it difficult to achieve the economies of scale that make regionalization a functional model for more densely populated jurisdictions [20]. Specifically, they note,

...all in all, regional populations in Canada might be too small to achieve any real economies of scale or to more generally affect coordination of health services”²

A Ministry of Health appointed Advisory Committee on Ontario's Rural Health Hubs Framework found that insufficient public transportation was one characteristic of rural communities that limits access to care [21]. We have seen diminished support for rural transport through for-profit services across Canada (for example, through the withdrawal of Greyhound bus services) which exacerbated the growing issue of transport to specialist care in regional communities and, predictably, has disproportionately disadvantaged vulnerable populations with reduced social and financial capital. In this way, transport (as a proxy to access to care) has become a social determinant of health.

Patient-travel from rural and remote communities to larger centres is a key assumption of regionalized health care systems where patients benefit from regional specialist care. In many jurisdictions, this improves access to such care for most of the population, as they no longer need to travel to larger urban

centres, thereby affecting the 'closer to home' advantage. For smaller rural and remote communities, however, regionalization can diminish local access to all, but primary care as regional procedural care must include the caseload of rural residents in order to maintain a viable case volume for specialist call groups. From a systems perspective, this may be an appropriate cost-benefit calculation with increased rural patient travel being a necessary by-product. There are however, productive ways of ameliorating the effect on rural residents through a reconceptualization of both patient travel and system supports for those instances when travel is necessary.

A consequence of the regionalization of health services that many jurisdictions in BC have undergone in the past two decades has been the attrition of specialists in low-volume communities in exchange for regional concentrations. Although access to care is still prioritized, the default mechanism of achieving this (in non-urgent situations) has been through patient-initiated travel. This is not the case, however, in many instances where regional specialists provide clinical care in smaller communities through regularly scheduled outreach visits. This is usually contingent on having enough accrued patient volume to justify the travel. When this is not possible, optimizing the potential of virtual care, either with or without the involvement of local care providers, also acts to lessen the burden of travel for rural patients. This may involve virtual visits between a specialist and rural patient supported by a local care provider or direct specialist-to-patient care. We have recently seen the capacity for health system adaptation for increased virtual care in the face of COVID-19; instilling the infrastructural resources and workflow patterns into rural and referral communities to support the expectation of virtual care where possible will create a legacy for this adaptation. When framed within these opportunities to reduce non-urgent patient travel, we can recognize the value of a paradigm shift where instead of being the first recourse to access to care, patient travel becomes the last resort.

Within this framework, the health system could, for example, immediately reduce the need for travel for pre-operative care. In this study, 87% of respondents who reported pre-operative visits reported having to travel for such care (and 88% post operatively) despite respondents' perception of the lack of urgency for in-person visits. Preoperative care could reasonably be offered through virtual care in many circumstances or, in some instances, involving local care providers in a tripartite model with the patient and specialist if hands-on care is required.

There are other system-level solutions to minimize the 'rural tax' on patients in accessing health care, such as supported accommodation in regional referral centres. In this study, respondents paid an average of \$674 in accommodation costs. There are already models in place providing subsidized accommodation to defray such costs in cases like cancer care or pediatric emergencies that we could learn from.

Further, the importance of social support in optimizing health outcomes must not be underestimated, nor the costs associated with this support. In this study, 85% of respondents were accompanied by and/or had visitors in the referral centre. This additional expense is often covered by the patient themselves, particularly in situations where accompanied travel post-visit is essential. In considering a holistic view of wellness, the mitigating influence of social support would be wise to consider not just to reduce system costs, but as a compassionate counterpoint to frequent criticism of 'depersonalized health care' [22, 23]. In instances where patients struggle to afford travel costs for themselves, let alone escorts, the question of whose responsibility it is to enable access to necessary health care remains.

To our knowledge, this is the first primary research study to systematically document the financial consequences of traveling for care for rural residents and, as such, provides important information for health care planners. A broader societal perspective of costs, including costs that are downloaded to individuals and families, is essential to include in health care planning and decision-making, especially given that the impact of OOP cost expenses are most strongly felt by those who lack financial and social resources. A broad view of cost accounting also includes considering less tangible costs, such as increased stress and anxiety that occur alongside the stress of the medical event. This may be due to not only financial worries, but also as a result of losing support networks of family and friends when having to travel. If the time out of the community is extended, then there is also disruption to usual routines, which is particularly difficult for caregivers including those with young children. Although we acknowledge that "not everything that can be counted counts and not everything that counts can be counted," through the rich descriptive comments provided by survey respondents, we can start to better understand the consequences of traveling for care.

Conclusion

The results of this survey provide a starting place for discussions on the role of public support for rural residents who need to travel for health care. These discussions must involve key stakeholders from rural communities but also regional representatives and government ministries entrusted with ensuring appropriate access to care, transportation and social development. Bringing the right group together in jurisdictions challenged with patient travel for non-acute health care will provide a starting place for developing a system response to ensure all residents have access to the health care they require, without financial barriers.

Abbreviations

OOP: Out of pocket

Declarations

Ethics approval and consent to participate

The study was approved by the Behavioral Research Ethics Board at the University of British Columbia (Ethics certificate number: H19-00445).

Consent for publication

All participants consented to their data being published for research by choosing to submit a survey. On the coversheet of the survey there is the following disclaimer: 'By completing the survey, you are giving your consent to participate in the research study'.

Availability of data and materials

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors of this study declare that they have no competing interests.

Funding

This study was co-funded by the Health Economics Simulation Modelling Methods Cluster, BC SUPPORT Unit and the Joint Standing Committee on Rural Issues, through the larger context of the Rural Surgical and Obstetrical Networks program, which works to stabilize and enhance surgical and obstetrical services in rural communities across BC.

Authors' contributions

Co-Principal Investigators JK and ARK were involved in developing the methodology for the project as well as facilitating meetings and workshops with patient partners. JK recruited survey participants, facilitated focus groups, and contributed to the write-up of findings from the survey for community-facing reports and the manuscript. ARK contributed to designing the data collection instruments, preparing ethics application, facilitated focus groups, applying data quality checks, analyzing data, reviewing and editing community facing reports, and writing up the manuscript. ES coordinated communication with patient partners and analyzed and wrote up qualitative data. GAG analyzed and wrote up quantitative survey data, as well as presented survey data to patient partners and incorporated their feedback throughout the process. AP contributed to survey tool design, recruitment strategy, and analysis and reporting for the manuscript. MD, DE, MB, and PW all contributed to the creation of the survey tool, aided recruitment efforts, and provided feedback on the manuscript. All authors read and approved the final manuscript.

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References

1. Better Environmentally Sound Transportation. Seniors Transportation Access and Resources [Internet]. Vancouver (BC); [cited 2020 Sep 28]. Available from: <https://starcanada.ca/>.
2. ORNGE. About Us [Internet]. Mississauga (ON); [cited 2020 Sep 28]. Available from: <https://www.omge.ca/home>.
3. LIFE SUPPORT Air Medical Transport. LIFESUPPORT Patient Transport [Internet]. Vancouver (BC); cc2010-2020 [cited 2020 Sep 28]. Available from: <https://www.lifesupporttransport.com/>.
4. BC Emergency Health Services. Patient Transfer Services [Internet]. Provincial Health Services Authority; c2020 [cited 2020 Sep 28]. Available from: <http://www.bcehs.ca/our-services/programs-services/patient-transfer-services>.
5. McNamara-Paetz L. Can regionalization live up to its economic reputation? *Health Law Review*. 1996;4(3):2–8.
6. Lavis JN, Boyko JA. Evidence brief: Developing a rural health strategy in Saskatchewan [Internet]. Hamilton ON (CA): McMaster Health Forum; 2010 [cited 2020 Sep 23]. 50 p. Available from: <https://www.mcmasterforum.org/docs/default-source/product-documents/evidence-briefs/rural-health-in-saskatchewan-eb.pdf?sfvrsn=ab5455d5>.
7. Office of the Seniors Advocate. Monitoring seniors services [Internet]. Victoria BC (CA); 2018 Dec [cited 2020 Sep 23]. 70 p. Available from: <https://www.seniorsadvocatebc.ca/app/uploads/sites/4/2019/01/MonitoringReport2018.pdf>.
8. Chaudhary MA, Shah AA, Zogg CK, Changoor N, Chao G, Nitzschke S, et al. Differences in rural and urban outcomes: A national inspection of emergency general surgery patients. *Journal of Surgical Research*. 2017;218:277–84. DOI:10.1016/j.jss.2017.06.034.
9. Wong ST, Regan S. Patient perspectives on primary health care in rural communities: effects of geography on access, continuity and efficiency. *Rural Remote Health*. 2009; 9(1):1142. Available from: <https://www.rrh.org.au/journal/article/1142> DOI: 10.22605/RRH1142.
10. Liu Y, Kong Q, de Bekker-Grob EW. Public preferences for health care facilities in rural China: A discrete choice experiment. *Social Science & Medicine*. 2019; volume 237. Available from: <http://www.sciencedirect.com/science/article/pii/S027795361930382X> DOI: <https://doi.org/10.1016/j.socscimed.2019.112396>.

11. Scholes-Robertson N. The Norm Bourke Box: A patient-led initiative to improve care for rural patients requiring peritoneal dialysis. *Perit Dial Int*. 2019 July; 39(4):390–391. Available from: <https://journals.sagepub.com/doi/10.3747/pdi.2019.00011#articleCitationDownloadContainer> DOI: <https://doi.org/10.3747/pdi.2019.00011>.
12. Clavarino AM, Lowe JB, Carmont SA, Balanda K. The needs of cancer patients and their families from rural and remote areas of Queensland. *The Australian Journal of Rural Health*. 2002; 10:188–195. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1046/j.1440-1584.2002.00436.x?sid=nlm%3Apubmed> DOI: <https://doi.org/10.1046/j.1440-1584.2002.00436.x>.
13. Smith T. A long way from home: Access to cancer care for rural Australians. *Radiography*. 2012; 18:38–42. Available from: [https://www.radiographyonline.com/article/S1078-8174\(11\)00134-9/fulltext](https://www.radiographyonline.com/article/S1078-8174(11)00134-9/fulltext) DOI: <https://doi.org/10.1016/j.radi.2011.10.041>.
14. Lyford M, Haigh MM, Baxi S, Cheetham S, Shahid S, Thompson SC. An exploration of underrepresentation of Aboriginal cancer patients attending a regional radiotherapy service in Western Australia. *Int J Environ Res Public Health*. 2018; 15(2):337. Available from: <https://www.mdpi.com/1660-4601/15/2/337/htm> DOI: <https://doi.org/10.3390/ijerph15020337>.
15. BC Patient Safety and Quality Council. Patient voices network [Internet]. Vancouver BC (CA): c2020 [cited 2020 Sep 23]. Available from: <https://bcpsqc.ca/advance-the-patient-voice/patient-voices-network/>.
16. Centre for Rural Health Research. Rural citizen-patient health care priorities in British Columbia: Findings from a provincial survey. Report in process.
17. Government of British Columbia. Services covered by MSP [Internet]. BC (CA); [cited September, 21, 2020]. Available from: <https://www2.gov.bc.ca/gov/content/health/health-drug-coverage/msp/bc-residents/benefits/services-covered-by-msp>.
18. Government of British Columbia. Rural practice subsidiary agreement [Internet]. BC (CA) [cited 2020, May 29] Available from: <https://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/physician-compensation/rural-practice-programs/rural-practice-subsidiary-agreement>.
19. First Nations Health Authority. NFHA overview [Internet]. BC (CA); c2020 [cited 2020 Sep 23]. Available from: <https://www.fnha.ca/about/fnha-overview#:~:text=%E2%80%8BThe%20First%20Nations%20Health,of%20its%20kind%20in%20Canada.&text=In%202013%2C%20the%20FNHA%20began,f>
20. Church J, Barker P. Regionalization of health services in Canada: A critical perspective. *Int J Health Serv*. 1998;28(3):467–86. DOI:<https://doi.org/10.2190/UFPT-7XPW-794C-VJ52>.
21. Multi-Sector Rural Health Hub Advisory Committee. Rural health hubs framework for Ontario [Internet]. ON (CA): Ontario Hospital Association; 2015 [cited 2020 Sep 23]. 21 p. Available from: .
22. Zealberg JJ. The depersonalization of health care [Internet]. *Psychiatr Serv*. 1999 Mar; 50(3):327-8. Available from: <https://pubmed.ncbi.nlm.nih.gov/10096636/> DOI: <https://doi.org/10.1176/ps.50.3.327>.
23. Owens J. Creating an impersonal NHS? Personalization, choice and the erosion of intimacy. *Health Expect*. 2015;18(1):22–31. doi:<https://doi.org/10.1111/hex.12000>.

Figures

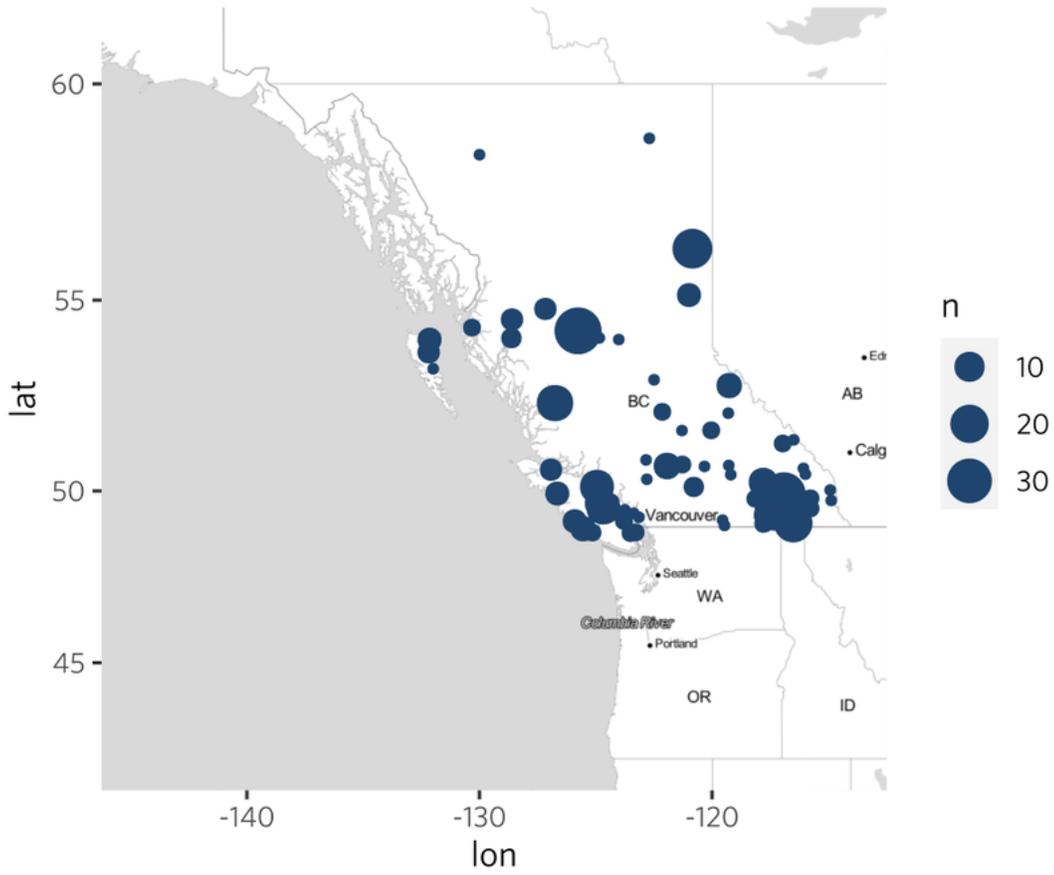


Figure 1

Home Communities of survey respondents. The size of the dot (“n”) corresponds to the number of respondents from each rural community

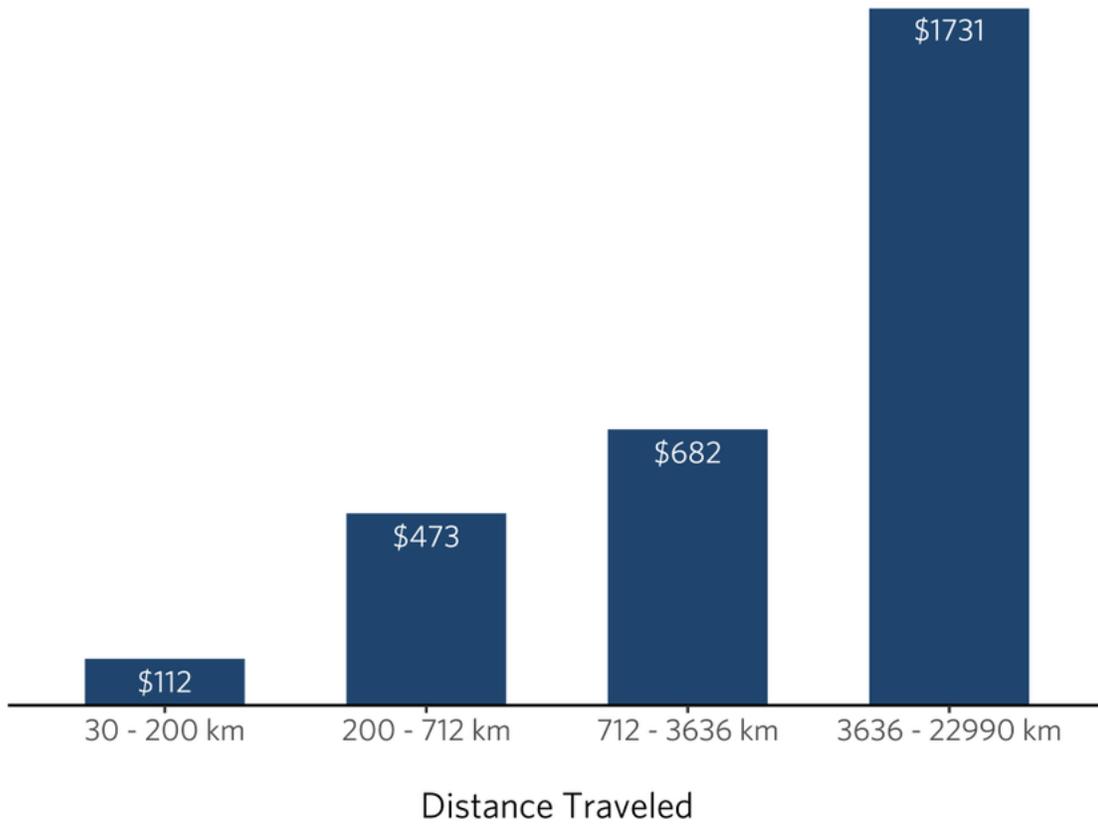


Figure 2

Average total out-of transport costs by distance traveled

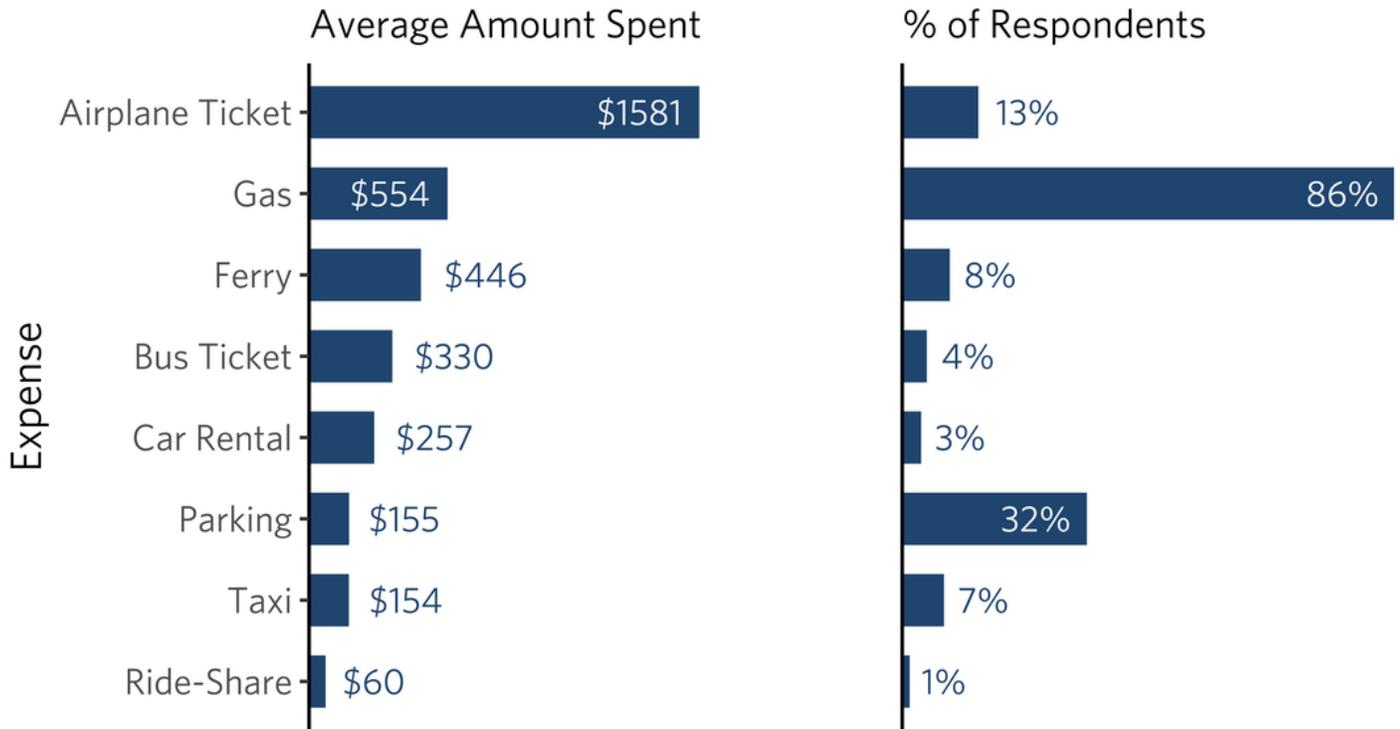


Figure 3

Average transportation costs by expense category for all respondents.

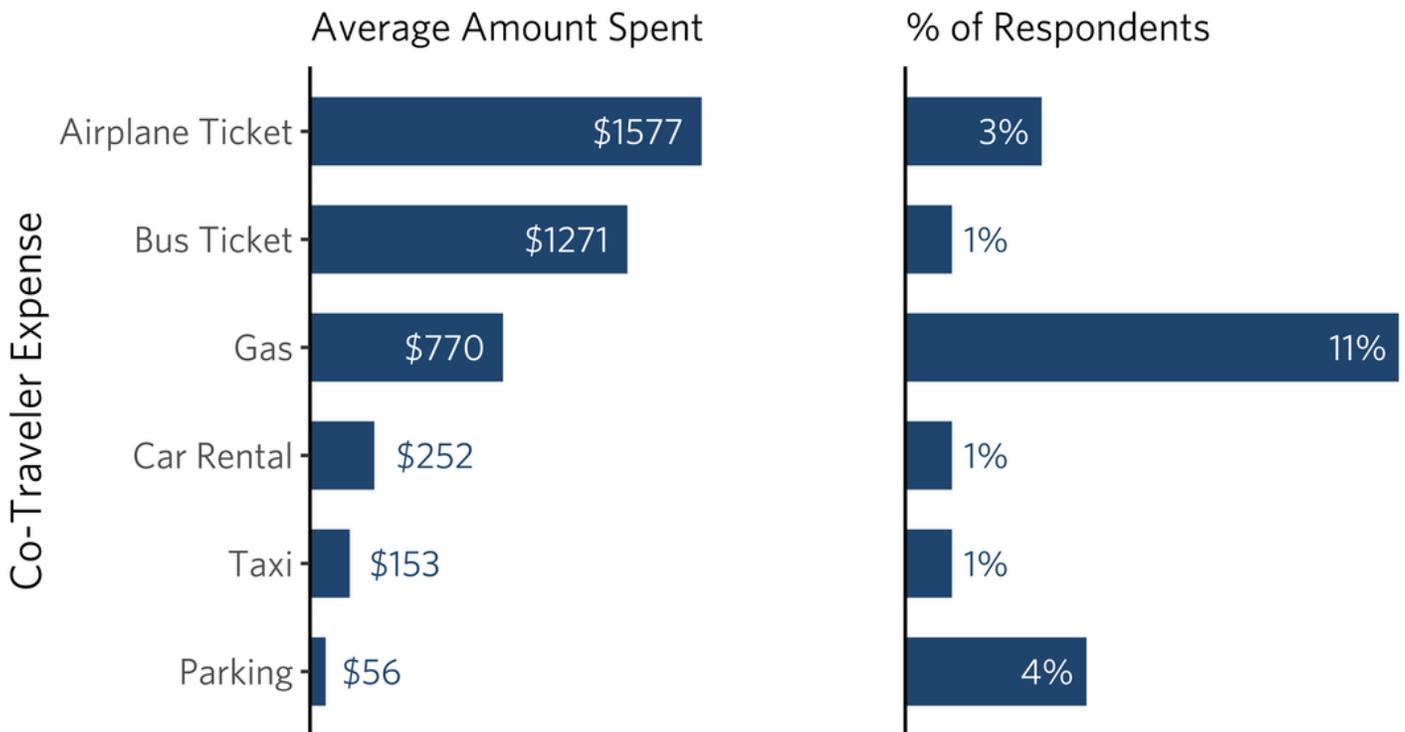


Figure 4

Average transportation expenses for co-travelers by category.

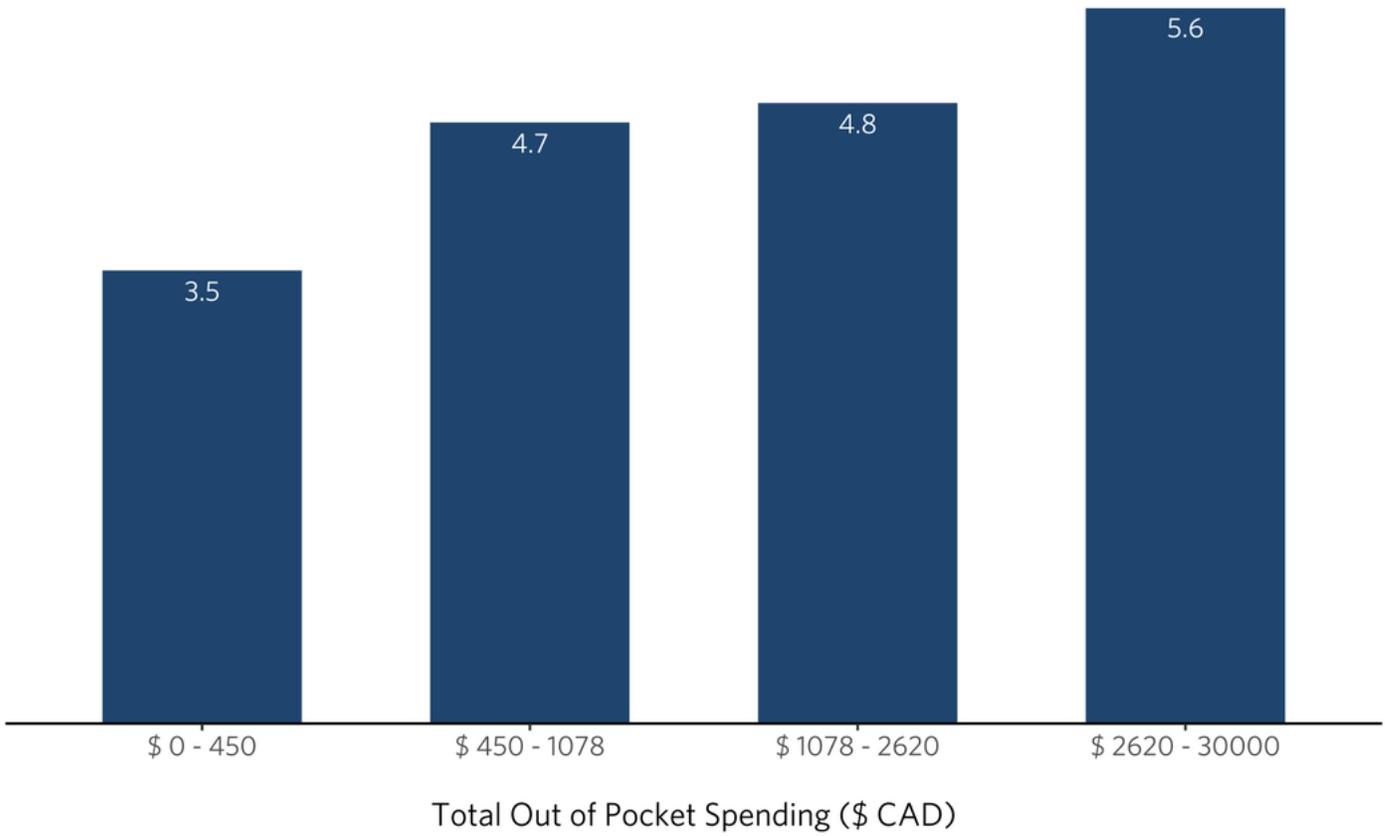


Figure 5

Average reported patients stress (scale of 0-10) for different out-of-pocket spending amounts.

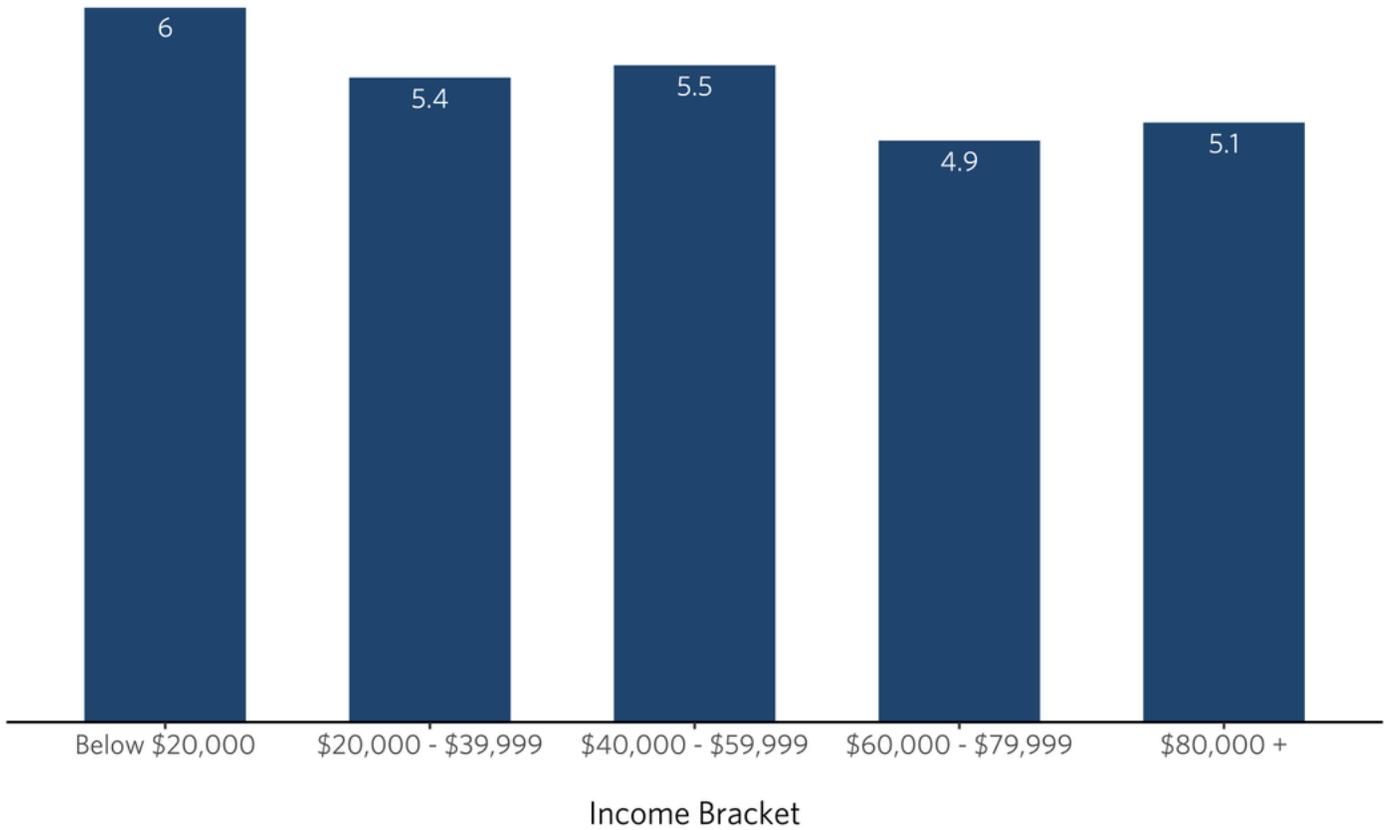


Figure 6

Average reported patients stress (scale of 0-10) for different household income amounts.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [COREQChecklistQualitativeresearch.docx](#)
- [OOPCSurveyQuestionnaire.docx](#)