

Comparison of participants who consented to endoscopy and those who did not as part of community-driven research on *H. pylori* infection

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BACKGROUND

Helicobacter pylori (*H. pylori*) has been a growing health concern in the Northwest Territories of northern Canada. In response to questions posed by community members in the Northwest Territories and their health care providers, the Canadian North *Helicobacter Pylori* (CANHelp) Working Group established the Aklavik *H. pylori* Project in 2007 in Aklavik, Northwest Territories (Figure 1).

This project aims to investigate community health problems related to *H. pylori* infection, and to identify public health solutions that respond to community healthcare needs as perceived by community members and local health authorities. It comprises five main components: community surveys, urea breath test (UBT) screening, endoscopy, treatment, knowledge exchange, and policy development.



Figure 1. Map of Aklavik, Northwest Territories, Canada

PURPOSE

To compare characteristics of participants who underwent endoscopy with those who did not as part of the Aklavik *H. pylori* Project. This analysis will provide an understanding of:

1. Factors that may influence an individual's decision to undergo endoscopy in community-driven research
2. The extent to which endoscopy participants represent the community for valid assessment of disease outcomes related to *H. pylori* infection
3. The degree to which factors that influence endoscopy participation are a source of selection bias

METHODS

From November 2007 to February 2008, participants were interviewed using a structured questionnaire to collect clinical history data, including previous *H. pylori* infection, specific types of gastric discomfort, and family history of stomach cancer.

During this time, participants were offered testing for *H. pylori* by UBT and/or evaluation by endoscopy. In total, 344 participants completed questionnaires, 321 participants underwent UBT, and 200 participants appeared for endoscopy.

RESULTS

1. Participants who underwent endoscopy and those who did not had similar frequencies of stomach problems. Proportions were somewhat higher in the endoscopy group for family history variables, having been tested for *H. pylori* before the study, and being on stomach medications.

Table 1. Stomach problems and history of various disorders for all participants, n=303

Variable	Endoscopy (n=195) Proportion (95% CI)*	No endoscopy (n=108) Proportion (95% CI)*
Stomach problems		
None	0.38 (0.31-0.45)	0.40 (0.31-0.50)
1	0.19 (0.14-0.26)	0.18 (0.11-0.26)
2+	0.43 (0.36-0.50)	0.43 (0.33-0.52)
Family history		
<i>H. pylori</i> infection	0.24 (0.18-0.31)	0.19 (0.12-0.28)
Stomach cancer	0.30 (0.24-0.37)	0.24 (0.16-0.33)
Medical history		
*Tested for <i>H. pylori</i>	0.20 (0.15-0.26)	0.12 (0.07-0.20)
On stomach medications	0.26 (0.20-0.33)	0.19 (0.12-0.28)

*95% Confidence interval

2. No factors related to medical history or stomach problems substantially increased or decreased the odds of participants undergoing endoscopy.

Table 2. Odds ratios for association with undergoing endoscopy for all participants, n=303, adjusted for age and gender

Variable	Odds ratio	95% CI*	p-value
Stomach problems			
None	1.00 (Reference)		
1	1.16	0.59-2.28	0.667
2+	0.96	0.56-1.64	0.889
Family history			
<i>H. pylori</i> infection			
No	1.00 (Reference)		
Yes	1.36	0.75-2.47	0.306
Stomach cancer			
No	1.00 (Reference)		
Yes	1.29	0.73-2.30	0.377
Medical history			
Tested for <i>H. pylori</i>			
No	1.00 (Reference)		
Yes	1.62	0.81-3.24	0.173
On stomach medications			
No	1.00 (Reference)		
Yes	1.37	0.75-2.52	0.309

*95% Confidence interval

DISCUSSION

The results presented here show that participants in a community-driven project who chose to undergo endoscopy did not have a higher frequency of symptoms than, or differ substantially on other relevant factors from participants who chose not to undergo endoscopy. This suggests that, for the selected indicators, there is reasonable comparability between the two groups.

However, it is not possible to generalize these findings to community residents who chose not to participate in the research.



Figure 2. Participant receiving topical anesthesia for transnasal endoscopy nurse in Aklavik, Northwest Territories, Canada



Figure 3. Transnasal endoscopy participant and physician in Aklavik, Northwest Territories, Canada

CONCLUSION

Selection bias resulting from greater participation of symptomatic individuals in clinical research is a concern. These findings show that individuals consenting to an invasive procedure in community-driven research may comprise reasonably representative samples for achieving study goals.

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