Cervical cancer screening among vulnerable women

Factors affecting guideline adherence at a community health centre in Toronto, Ont

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Abstract

Objective To see if refugee women at a community health centre (CHC) in Toronto, Ont, are appropriately screened for cervical cancer and if there are any demographic characteristics that affect whether they are screened.

Design Chart review.

Setting A CHC in downtown Toronto.

Participants A total of 357 eligible refugee women attending the CHC.

Main outcome measures Papanicolaou test received or documented reason for no Pap test.

Results Ninety-two percent of women in the study sample were either appropriately screened for cervical cancer or had been approached for screening. Eighty percent of women were appropriately screened. Demographic variables including pregnancy, being uninsured, not speaking English, recent migration to Canada, and being a visible minority did not affect receipt of a Pap test after migration in multivariate analyses. Not speaking English was associated with a delay to receiving a first Pap test after migration.

Conclusion The clients at our centre are demographically similar to women who are typically overlooked for Pap tests in the greater Toronto area. Despite belonging to a high-risk population, refugee women in this multidisciplinary CHC were screened for cervical cancer at a higher rate than the local population.

EDITOR'S KEY POINTS

• Although refugees comprise a relatively small portion of the total immigrants to Canada, a small body of literature shows them to have considerable health and mortality disadvantages relative to other newcomers.

• Refugee women in Canada might be expected to have lower rates of cervical cancer screening than among the general population, as they fit well-described high-risk criteria. This study examined rates of screening among refugee women in a community health clinic model designed to overcome the barriers refugees experience to accessing primary care. Refugee women in this study were screened at higher rates than the local population.

• Such targeted models of care might represent a credible strategy for addressing the unique health needs of refugee women, at least within their initial stages of settlement.

Dépistage du cancer du col chez des femmes vulnérables

Facteurs affectant l'adhésion aux directives dans un centre de santé communautaire de Toronto, Ontario

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Résumé

Objectif Déterminer si les femmes réfugiées fréquentant un centre de santé communautaire (CSC) de Toronto, Ont., font l'objet d'un dépistage adéquat du cancer du col et s'il existe des caractéristiques démographiques pouvant affecter la possibilité d'avoir ce dépistage.

Type d'étude Étude de dossiers.

Contexte Un CSC du centre-ville de Toronto.

Participants Un total de 357 réfugiées éligibles fréquentant le CSC.

Principaux paramètres à l'étude Le fait d'avoir eu un test de Papanicolaou, ou une raison documentée de ne pas en avoir eu.

Résultats Quatre-vingt-douze pour cent des participantes avaient eu un dépistage approprié du cancer du col ou des conseils en ce sens. Quatre-vingt pour cent des femmes avaient eu un dépistage adéquat. L'analyse de variance multifactorielle a montré que les variables démographiques comme la présence de grossesse, l'absence d'assurance, le fait de ne pas parler anglais, d'avoir immigré récemment au Canada ou d'appartenir à une minorité visible, n'affectaient pas le fait d'avoir eu un Pap test après l'arrivée au Canada. Chez celles qui ne parlaient pas anglais, le premier Pap test avait eu lieu plus tard après leur arrivée au pays.

Conclusion Les clientes de notre centre ont un profil démographique semblable à celui des femmes qu'on oublie souvent dans les campagnes de dépistage par le Pap test dans la région du grand Toronto. Malgré leur appartenance à une population à haut risque, les réfugiées de ce CSC multidisciplinaire avaient un taux de dépistage du cancer du col plus élevé que celui de la population générale.

POINTS DE REPÈRE DU RÉDACTEUR

• Même si les réfugiés représentent une fraction relativement faible de l'ensemble des personnes qui immigrent au Canada, un certain nombre de données de la littérature montrent qu'ils sont beaucoup plus à risque de problèmes de santé et de décès que les autres immigrants.

• On pourrait penser que les femmes venues au Canada comme réfugiées ont un taux de dépistage du cancer du col inférieur à celui de la population générale, puisqu'elles ont le profil typique des personnes à haut risque. Cette étude a vérifié les taux de dépistage chez les femmes ayant un statut de réfugié qui fréquentaient un modèle de clinique de santé communautaire créé pour surmonter les obstacles qui empêchent les réfugiées d'avoir accès aux soins primaires. Dans cette étude, les réfugiées avaient un taux de dépistage supérieur à celui de la population locale.

• Un tel modèle de soins pourrait constituer une stratégie intéressante pour répondre aux besoins de santé propres aux femmes réfugiées, du moins durant la période initiale de leur installation.

ervical cancer is the second most common cancer affecting women worldwide; yet, it is the 11th most common cancer in Canada.[1] This gap is attributed to the accessibility of cervical cancer screening for Canadian women.[2] Ontario guidelines recommend screening with Papanicolaou smear or liquid-based cytology annually beginning after initiation of sexual activity and moving to once every 2 to 3 years after 3 consecutive negative results, until age 70.[3] Screening with a Pap test reduces incidence of and mortality from cervical cancer; however, the ability of countries worldwide to systematically introduce such screening varies.[4] This variability results in a substantially higher burden of cervical cancer in lower-income countries where fewer than 5% of women are screened.[5] Within Canada itself, cervical cancer disproportionately affects women who are not screened. Decker et al showed that, in Manitoba, women who had never received Pap screening were 3 times as likely to receive a diagnosis of invasive cervical carcinoma than those who had been screened.[6] These realities intersect in Canada's continually shifting demographic landscape, as nearly 130 000 female newcomers were accepted into the publicly funded system in 2008 alone.[7] Factors affecting uptake of Pap screening among immigrant women in Canada include arriving from an Asian country, having a native language other than French or English, and low education.[8] These findings were echoed in a recent study of screening in Toronto, Ont, where more than 40% of newcomers to Canada are received. In addition to finding that overall screening rates in Toronto hovered around 55% for the 3-year study period, factors associated with lower rates of screening in the greater Toronto area included recent immigration, being a visible minority, speaking a foreign language, having low income, or having a low level of education.[9] While these studies describe immigrants as a whole, they do not explicitly address refugees—a group of migrants whose demographic composition seems to mirror the risk factors listed above. According to the Geneva Convention, a *refugee* is a person who flees, and is unable to return to their home country, because of a well-founded fear of persecution for reasons of race, religion, nationality, or membership in a particular social or political group.[10] Owing to these complex circumstances, many refugees and asylum seekers in Canada arrive with minimal financial and social resources with which to address their health concerns.

According to Citizenship and Immigration Canada, approximately 11 000 female refugees were accepted in 2008, and nearly half settled in Toronto. American literature identifies higher rates of invasive cervix cancers and lower screening rates in Hmong and Cambodian refugees than for the general population.[11,12] In Canada, studies of overall mortality in refugees demonstrate disparities in mortality relative to other immigrants, and

one study of refugee demographic characteristics upon entry to Canada indicated that most refugee women have never had Pap tests.[13,14] Since 2003, Access Alliance Multicultural Health and Community Services (AAMHCS) in Toronto has served primarily government-assisted refugees, refugee claimants, and some uninsured patients. This community health centre is funded to accommodate the unique needs of this group by providing longer appointments with providers, access to allied health professionals, translation services, and settlement services. This model ideally provides comprehensive primary care for populations that might otherwise lack access to it. Despite serving a population likely to experience many identified barriers to screening, we speculated that Pap testing rates in our centre would be congruent with those expected from adherence to Ontario cervical cancer screening guidelines. Therefore, the aims of this retrospective chart review were to determine the prevalence of appropriate cervical cancer screening among eligible refugee and uninsured women at AAMHCS, and to determine the demographic variables associated with appropriate screening and the time to first Pap test.

METHODS

We developed broad inclusion criteria for this chart review to reflect both the Canadian Cancer Society guidelines on cervical cancer screening in Ontario and the recent period of government-assisted refugee enrolment at AAMHCS as follows: 1) any woman aged 18 to 69 at registration; 2) enrolled between January 1, 2004, and September 1, 2008; 3) who had had at least 1 visit with a physician at AAMHCS, as opposed to only seeing an allied health professional; and 4) who had had at least 3 visits during the study period. The latter limit on enrolment date of September 1, 2008, allowed a minimum of 1 year for a Pap test to be completed before data collection in September 2009.

The inclusion criteria were applied to a database search of all registered clients of AAMHCS, and 487 charts were identified for review. Of those charts, 63 were unavailable in the medical records room, 1 belonged to a patient younger than 18, 1 belonged to a male patient, 44 belonged to patients who had exclusively seen allied health professionals, 11 belonged to patients who had made 2 or fewer visits to AAMHCS with loss to follow up, and 10 belonged to patients who had formally transferred to other providers. This left 357 eligible patients in the cohort who could be reasonably expected to have Pap tests reported in their charts. Data including demographic characteristics (immigration status, insurance status, country of origin, preferred language, year of arrival) and Pap test indices (first Pap

test in chart, if any; documentation of reason for no Pap test, if none; Pap test result; follow-up; pregnancy) were recorded in an Excel spreadsheet. These data were analyzed using a χ^2 test for significance and odds ratios, as well as multivariate logistic regression and Cox proportional hazard modeling done with SAS, version 9.1. Research ethics boards at St Joseph's Health Centre and AAMHCS approved this research project.

RESULTS

Of the 357 eligible women, 92% were either appropriately screened (284 women) or were approached and had a documented reason for not having a Pap test (46 women). That left 27 women (8%) with no documented Pap test and no stated reason. Documented reasons for foregoing a Pap test included the patient declining (eg, transgender male to female, female genital mutilation, domestic violence, male provider, recent Pap with another provider), a Pap test having been done by a gynecologist, previous hysterectomy, or patient not having ever been sexually active. For the purposes of this review, these 46 patients were considered to be appropriately approached for screening, but only charts with documented Pap tests were subsequently analyzed. In all, 284 of the 357 eligible charts (80%) contained at least 1 Pap test result within the study period (**Table 1**). The average length of time to first Pap test was 140 days for those women who had one.

Table 1. Screening with Pap tests: *A total of 357 charts were reviewed.*

SCREENING	N (%)
Pap test documented in chart	284 (80)
No Pap test and reason documented	46 (13)
Approached for screening	330 (92)
No Pap test in chart and no reason documented	27 (8)

Table 2 outlines the rates of appropriate screening by the demographic characteristics of the women in the study sample. English-speaking women, uninsured women, women who were pregnant during the study period, and European women had higher rates of screening than their counterparts. To determine if these results were statistically significant, we conducted univariate χ^2 analyses for these 4 variables (**Table 3**). Surprisingly, women without insurance were significantly more likely to have Pap tests than those who were insured (odds ratio 6.65, $P<.0001$). Speaking English and region of origin were not significantly correlated with having a Pap test.

Next, owing to our unexpected result with insurance status, we used SAS to do 2 kinds of multivariate analyses—logistic regression and Cox proportional

Table 2. Patient demographic characteristics

CHARACTERISTICS	ALL CHARTS REVIEWED (N = 357), N (%)	PAP TEST DOCUMENTED, N (%)	NO PAP TEST DOCUMENTED, N (%)
English-speaking	78 (22)	68 (87)	10 (13)
Non-English speaking	279 (78)	216 (77)	63 (23)
Insured	274 (77)	205 (75)	69 (25)
Uninsured	83 (23)	79 (95)	4 (5)
Pregnancy during study period	60 (17)	60 (100)	0 (0)
No pregnancy during study period	297 (83)	224 (75)	73 (25)
European country of origin*	32 (10)	29 (91)	3 (9)
Non-European country of origin*	281 (90)	218 (78)	63 (22)

*Country of origin was recorded at registration for only 313 of the charts reviewed.

Table 3. Univariate analysis (χ^2) of the association between insurance status, language, or pregnancy and having a Pap test

VARIABLE	χ_1^2	P VALUE	ODDS RATIO
Uninsured vs insured	16.239	<.0001	6.65
Non–English–speaking vs English-speaking	3.570	<.0588	0.50
No pregnancy vs pregnancy	18.538	<.0001	0.00
Non-European origin vs European origin	2.938	<.0865	0.36

hazards—in order to examine the effects of insurance status while controlling for the potential confounders of language, region of origin, year of arrival, pregnancy, and age. In these models, we also noted the independent effects of language, region of origin, and year of arrival—all migration-related variables associated with likelihood of screening in the literature. For dichotomous variables, the group considered most advantaged was used as the reference group. In the logistic regression, none of the variables of interest was significantly associated with Pap test completion after registration with the clinic (**Table 4**).

In the Cox proportional hazard model, we found that speaking English significantly predicted the likelihood of getting a Pap test earlier after registration, relative to non-English speakers (**Table 5**). Of note, only 78 (22%) of the 357 charts examined listed English as the preferred language. European origin and year of arrival did not significantly affect the time to first Pap test after registration. Although uninsured patients were more likely to get a Pap test at any point in time in this model, after adjustment for all main regions of origin, rather

than simply using the stratification of European versus non-European, this result became non-significant (adjusted hazard ratio 1.312, 95% CI 0.922 to 2.058).

Table 4. Logistic regression analysis of factors affecting Pap test completion after clinic registration: *Odds ratio adjusted for the other variables listed in the table as well as for age and pregnancy during the study period.*

VARIABLE	ADJUSTED ODDS RATIO (95% CI)
Language (non-English vs English)	0.669 (0.300-1.491)
Region (non-European vs European)	0.545 (0.151-1.966)
Year of arrival (vs arriving 1 year later)	0.829 (0.682-1.006)
Insurance status (uninsured vs insured)	2.710 (0.797-9.259)

Table 5. Cox proportional hazard analysis of factors affecting time to first Pap test after clinic registration: *Hazard ratio adjusted for the other variables listed in the table as well as age and pregnancy during the study period.*

VARIABLE	ADJUSTED HAZARD RATIO (95% CI)
Language (non-English vs English)	0.625 (0.462-0.854)
Region (non-European vs European)	0.964 (0.635-1.464)
Year of arrival (vs arriving 1 year later)	1.040 (0.967-1.117)
Insurance status (uninsured vs insured)	1.715 (1.156-2.545)

DISCUSSION

Ultimately, by far most refugee and uninsured clients at AAMHCS were appropriately screened for cervical cancer: 92% of women were approached for a Pap test, and 80% of women had a Pap test done during the study period. Within our study population, there was no demographic characteristic that significantly predicted a missed Pap test. The only significant variable affecting Pap testing was the inability to speak English, which delayed the time until the first Pap test was performed for new registrants. Although being uninsured was associated with a significantly higher likelihood of receiving a Pap test in univariate analysis, multivariate analyses suggest that this relationship was confounded by other variables, such as pregnancy and speaking English, among the uninsured patients. Rates of pregnancy are high among the uninsured population at AAMHCS, and many of the uninsured are from the Caribbean region and are therefore English speakers. Cervical cancer rates among Caribbean immigrants in Ontario have been found to be high compared with other immigrant groups.[15]

Strengths of this study are the multivariate analysis of significant demographic variables, and access to a concentrated population of refugees, who are often underrepresented in population-based studies of newcomers.

Weaknesses include a small sample size, which could lack the power to narrow confidence intervals and tease out differences that might become significant with larger numbers. Additionally, the data were drawn from a single, refugee-friendly clinic, so they are not largely generalizable to other settings; however, this might reflect a strength of this particular model of care. Finally, women had up to almost 5 years to have a Pap test performed, which is longer than the time period suggested by guidelines, although most women who had a Pap test had it performed within 5 months of registration. One possibly noteworthy variable that we did not examine was provider bias. Nurse practitioners or physicians did all Pap tests; however, we did not analyze Pap test rates according to individual providers or provider type. While the women who got Pap tests appeared demographically the same as the women who did not, there could have been provider effects, such as male sex of the physician, comfort with sexual history taking, or practice differences between nurse practitioners and physicians, that might have precluded some women from being appropriately screened.

While exposure to Pap screening is known to be low among refugee women, our study found that this risk factor seems to diminish in a setting directed to their needs. This stands in contrast to studies showing reduced cervical cancer screening in immigrants, both in Canada and locally in the greater Toronto area, who share qualities with refugee women such as language barriers, poor education, and recent arrival.[16,17] We surmise this finding is related to the unique structure of the AAMHCS clinic, which offered on-site access to crucial support services including settlement workers and trained medical translators, in addition to culturally sensitive staff.

The heterogeneity of refugee women and the scarcity of published research about their primary care needs speaks to the need for further research in this area. Future research directions might include investigating to see if these findings remain true for other types of cancer screening or other preventive measures at this clinic, and, additionally, comparing these outcomes to those at other community health centres with similarly vulnerable populations. A small number of women who were approached declined screening for notable reasons, including female genital cutting, intimate partner violence, previous exposure to violence, and cultural factors surrounding the relationship to male providers. Further quantitative exploration in these areas would shed additional light on barriers to screening in this vulnerable group.

Conclusion

Although refugees comprise a relatively small portion of the total immigrants to Canada, a small body

of literature shows them to have considerable health and mortality disadvantages relative to other newcomers. Refugee women in Canada might be expected to have lower rates of cervical cancer screening, as they fit well-described high-risk criteria; however, in this clinic model designed to overcome these barriers, refugee women were screened at higher rates than the local population. This model of care might represent a credible strategy for addressing the unique health needs of refugee women, at least within their initial stages of settlement. Further research in assessing primary care for refugees and subsequent outcomes could clarify the effectiveness of focused, multidisciplinary clinics as a directed intervention in this vulnerable population. ✤

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