

Gender differences in general practice utilisation in New Zealand

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ABSTRACT

INTRODUCTION: This paper aims to examine gender differences in general practice utilisation in New Zealand.

METHODS: The data for this research came from 10 506 visit records gathered from 246 general practitioners (GPs) who took part in the National Primary Medical Care Survey (NatMedCa), a nationally representative, multistage, probability sample survey of GPs and patient visits conducted in 2001/2002. The number of visits to a general practice in the last 12 months among those patients who visited the GP at least once during the past 12 months was used as the outcome variable. Poisson regression was used for analysis.

RESULTS: Women were more likely than men to visit a GP over the last 12 months (IRR=1.13; 95% CI: 1.03–1.24). We also found significant female excess in utilisation of GP services even after excluding gynaecological and obstetric conditions and across all age groups. Asian were 39% less likely than European women to visit a GP (IRR=0.61; 95% CI: 0.43–0.85); a result that was not reflected in men's utilisation of GP services. In addition, we found that women visiting GPs were 39% more likely to have reported 'life-threatening' problems as compared to 'self-limiting' problems (IRR=1.39; 95% CI: 1.00–1.94).

CONCLUSION: Our results do not support the body of literature that suggests that women's excess in service use can largely be attributed to gynaecological and obstetrical conditions or that the female excess in visits is focussed in the childbearing years. Ethnicity and the severity of a problem contributed significantly to explaining women's, but not men's, utilisation of GPs.

KEYWORDS: Gender differences; health services utilisation; New Zealand

Introduction

While gender differences in health, assessed in terms of mortality and morbidity, have been reported in most developed countries over recent decades, less attention has been paid to the use of health care services. Research from developed countries on patterns of health service use suggests that women's rate of utilisation of almost all health services is higher than that of men.^{1–17} However, some researchers have challenged the stereotype of women being more likely to use health services.^{18–20} For example, some scholars have suggested that the largest female excess in attendance is during childbearing years;²¹ others argue that gynaecological and obstetrical conditions contribute significantly to the difference, whereas consultation for 'vague' or mild symptoms, or 'symptoms without disease' are

not important in explaining the sex difference in consultation rates.²² Still others indicate that differences are due to different experience of symptoms rather than willingness to consult.^{14,23–27}

Further studies suggest that males and females do not differ in symptom reports for specific diseases where symptoms tend to be powerful and obvious.²⁴ Some scholars found no support for the notion that women are more likely than men to seek help for any particular problem.⁴

Clearly, these explanations are not mutually exclusive. They do, however, serve to illustrate the complexity of the association between gender and health services utilisation and warrant ongoing examination of the topic. The present study examines gender differences in general practice

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Table 1. Characteristics of patients and visits

Characteristics	N	Percentage
Predisposing characteristics		
Age group (years)		
0–15	2032/10506	19.3
16–24	919/10506	8.8
25–34	1670/10506	15.9
35–44	2593/10506	24.7
45–54	1083/10506	10.3
55–64	2064/10506	19.6
65+	145/10506	1.4
Gender		
Males	4341/10430	41.6
Females	6089/10430	58.4
Missing	76	
Ethnicity of patients		
NZ European	6794/10319	65.8
Maori	1730/10319	16.8
Pacific	721/10319	7.0
Asian	499/10319	4.8
Other	574/10319	5.6
Missing	187	
Marital status		
Married	4001/7783	51.4
Unmarried/Never married	3782/7783	48.6
Missing	2723	
NZDep 2001 quintile*		
1	1575/8940	17.6
2	1552/8940	17.4
3	1628/8940	18.2
4	1791/8940	20.0
5	2394/8940	26.8
Missing	1566	
Enabling resources		
Community Service Card (CSC) ^{†‡}	4992/10197	49.0
High Use Health Card (HUHC) ^{†‡}	519/9647	5.4
Need component—practitioner perception		
Urgency of the visit		
ASAP & today	3955/8476	46.7
This week	4521/8476	53.3
Missing	2030	
Severity of the problem		
Life-threatening	210/7893	2.7
Intermediate	4153/7893	52.6
Self-limiting	3530/7893	44.7
Missing	2613	
N of cases	10506	100.0

Source: National Primary Medical Care Survey, 2000

* NZDep 2001 is a census-based small-area index of deprivation, where 1=the least deprived 20% of areas, and 5=the most deprived 20% of areas.

† The CSC and HUHC are benefit cards that entitle the user to higher levels of government payment for consultations and prescriptions, thus reducing the amount of patient co-payment; the CSC is means-tested and indicates low income.

‡ These variables were coded as 'yes/no'. The 'no' rows are not shown.

utilisation in New Zealand (NZ) by addressing three specific questions:

- To what extent is there variation in general practice utilisation between men and women?
- To what should these differences, if there are indeed differences, be attributed?
- Are there gender differences in the determinants of GP utilisation?

Thus, we aim to contribute to the debate on the nature of differences in GP visits between men and women. Examining gender differentials in general practice utilisation in a NZ context is important at least for two reasons. First, as suggested in a number of recent NZ papers, gender has received less attention in a range of areas, including research.^{28–30} Research on the reduction of social inequalities in health and in access to health care has focussed on socioeconomic and ethnic inequalities, and gender differentials in health service utilisation have received less attention in NZ. Second, the bulk of research on gender differentials in health service utilisation has been carried out on European and American data and evidence from NZ may validate existing knowledge and provide greater understanding of how the association between gender and health service utilisation is manifest across diverse social environments.

The conceptual framework of this study draws on the health behaviour model (HBM).³¹ The HBM considers the use of health services as a function of predisposing, enabling and need factors. The predisposing component involves characteristics existing prior to the onset of disease, which reflect a person's propensity to contact a doctor given certain health problems. The enabling component refers to conditions that facilitate or inhibit the use of health care facilities, such as health insurance, availability and affordability of health services, family and work obligations. The need component reflects the urge to seek health care because of the individual's objective or subjective health.

Methods

Data

The data for this research are based on 10 506 visit records gathered from 246 GPs who took part in the National Primary Medical Care Survey (NatMedCa).³² NatMedCa, carried out

over 2001/2002, was a nationally representative, multistage, probability sample of GPs and patient visits. The primary purpose of the survey was to collect data on the content of patient visits. For two periods, each of one week, every selected GP completed a questionnaire for a 25% systematic sample of patient visits. The questionnaire was adapted from the annual US National Ambulatory Medical Care Survey (NAMCS) <http://www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm>; accessed 25 June 2006). The overall GP response rate was 71.1%, calculated as the proportion of eligible GPs in the sample who completed patient visit survey forms for both one-week survey periods.

In order to obtain a nationally representative sample, geographic locations were sampled and GPs were sampled from locations, stratified by organisation type (independent; independent practitioner association; capitated; community-governed not-for-profit) and rural/urban (metropolis and cities; towns and rural areas). GP and visit weights were calculated to take account of different sampling probabilities, so that approximately unbiased estimates of proportions, means and measures of association could be calculated.³³

Measurement

The independent variable for this analysis is gender, categorised as men and women. 'Men' is the reference group. The outcome variable is the self-reported number of visits to a general practice in the last 12 months among those patients who visited a GP at least once during the past 12 months. The utilisation of GP services was hypothesised to depend on predisposing, enabling and need factors. The specific aim was to explore the extent to which observed gender differences, if there are any, are explained by the predictor variables (predisposing, enabling and need factors) considered separately and together. Predisposing, enabling and need factors selected as independent variables were respectively (a) age, ethnicity, marital status and NZDep 2001 quintile; (b) community service card (CSC) status, high use health card (HUHC) status; and (c) urgency and severity of visit (Table 1). We have used 'prioritised' ethnicity in this paper. In the 'prioritised' concept, each respondent was assigned to a mutually exclusive ethnic group by means of a prioritisation system commonly used

WHAT GAP THIS FILLS

What we already know: Previous studies have reported that women's rate of utilisation of almost all health services is higher than that of men. One of the explanations for this difference has been that gynaecological and obstetrical conditions contributed significantly to this difference and that the largest female excess in attendance is during childbearing years.

What this study adds: Women are more likely than men to utilise GP services across all age groups and even after excluding gynaecological and obstetrical conditions. Determinants of GP consultation differed between the sexes. Ethnicity and severity of problem contributed significantly to explaining women's, but not men's, utilisation of GPs.

in New Zealand: Maori, if any of the responses to self-identified ethnicity were Maori; Pacific, if any one response was Pacific but not Maori; Asian, if any one response was Asian but not Maori or Pacific; and the remainder non-Maori non-Pacific non-Asian (nMnPnA) (mostly New Zealanders of European descent, but strictly speaking not an ethnic group). The NZDep 2001 index of socioeconomic deprivation was used as a measure of socioeconomic position. It is a census-based small-area index of deprivation.³⁴ The index scale used here is from 1 to 5, where 1 is the least deprived 20% of areas and 5 is the most deprived 20% of areas. The CSC (community services card) and HUHC (high use health card) are benefit cards that entitle the user to higher levels of government payment thus reducing the amount of patient co-payment; the CSC is means tested and indicates low-income.

Statistical analysis

Since the main dependent variable—the number of visits to the GP in the last 12 months—is a count variable which can only take non-negative integer values, a count regression was appropriate.^{35,36} Hence, Poisson regression analyses were used to examine the gender differences in visits to a GP and also to examine the contribution of predisposing and enabling factors to individuals' visits to a GP. Children below age 16 years were excluded from the sample for regression analyses on the assumption that up to perhaps the mid teens, the person making the decision to visit the doctor is unlikely to be the patient. Usually it will be a parent, and most likely the mother. In these analyses, the regression coefficient *b* is more easily interpreted as an incidence rate

ratio, e^b , which measures the expected change in the dependent variable as a result of a one-unit change in the predictor variable. The incidence rates for the dependent variable in each of the predictor variable categories are compared to the incidence rate for the reference category. The incidence rate for the reference category of each predictor is unity. Statistical analyses were undertaken using the SUDAAN statistical package,³⁷ allowing estimates to take account of clustering, stratification and weights.³⁸ Age standardisation was carried out using the direct method, with the 2001 census population as the standard.

To determine whether gender differences in the utilisation of GP services could be eliminated by controlling for the predictor variables, both univariate and multivariate models were fitted. The statistical analysis was performed stepwise. First, a univariate Poisson regression model (Model 1, Table 5) was fitted to examine the gross effect of gender on GP attendance. Second, four multivariate models, based on theoretical considerations, were estimated. Models 2, 3 and 4 (Table 5) estimated the gender differences in GP attendance after separately controlling for predisposing, enabling and need factors respectively. Finally, Model 5 (Table 5) achieved the same objective after controlling for predisposing, enabling and need factors simultaneously. Following Verbrugge's argument (1985) that utilisation due to sex-specific morbidities and preventive care (e.g. reproductive-related contacts) should be removed in analyses assessing the effects of gender, we excluded female reproductive diagnoses from the total sample and again ran regression analyses of utilisation of GP services (results not shown). We also conducted separate Poisson regression models for men and women in order to examine whether the determinants of utilisation of GP services were different according to the gender of the patient (Table 6). A variable was considered significantly associated with GP attendance when its p -value was below or equal to 0.05. The χ^2 test was used to compare male and female categorical variables, with p -values computed from the Wald χ^2 using denominator degrees of freedom equal to the number of sampling units minus the number of strata. For continuous variables, t -tests and associated p -values were used. We also examined possible interactions between gender and predictor variables.

Ethical approval

NatMedCa (National Primary Medical Care Survey) on which the present study is based, was approved by the New Zealand Ethics Committee which reviews national and multi-regional studies.

Results

Bivariate relationships between gender and GP utilisation are reported in Table 2, 3 and 4. There was a significant difference between men and women in the average number of visits to the practice in the previous 12 months (5.4 and 6.3, respectively; $p=0.00$). There was also a difference between men and women in the average number (age standardised) of problems diagnosed (ICD-9-CM) per visit (1.5 and 1.7 problems, respectively; $p=0.006$). However, there was no significant gender difference between men and women in the average duration of visit (14.78 and 15.09 minutes, respectively). A higher proportion of male patients visited for administrative (8.33% vs 5.98%; $p=0.01$), medical (57.8% vs 53.8%; $p=0.03$) and surgical (44.8% vs 39.6%; $p=0.01$) reasons (Table 3). Except for musculoskeletal, genitourinary, and rheumatologic reasons, there were no significant gender differences in the reported diagnosis for the visits (Table 4). Men were more likely to visit for musculoskeletal, and rheumatologic diagnosis while women were more likely to visit for genitourinary reasons.

Results from the univariate Poisson regression analysis (Model 1, Table 5) show that women were 14% more likely than men to visit a GP over a 12-month period. Controlling for predisposing factors increased the gender difference in the use of GP services and women were 23% more likely to use GP services (Model 2, Table 5) than men. Controlling for enabling (Model 3, Table 5) and need (Model 4, Table 5) factors brought down gender differences in the use of GP services below the unadjusted gross model (Model 1), however differences still remained highly significant. For example, after controlling for enabling and need factors, as in Model 3 and 4 respectively, women were respectively 9% and 12% more likely than men to use GP services. Controlling simultaneously for predisposing, enabling and need factors (Model 5), the probability of visiting a GP over the last 12 months was 13% higher for women as compared to men.

The results also show that being older, being of European ethnicity, holding a CSC or HUHC, having a 'life-threatening' problem, urgency of visit 'the same day' were all significantly related with increased utilisation of GP services. As opposed to previous studies marital status was not a predictor of gender differences in the utilisation of GP services in this study (Table 5); neither did it work differently for men and women (Table 6).^{39,40} We repeated all the models after excluding gynaecological and obstetrical diagnoses from the total sample. Our results did not change (results not shown). Gender still remained an independent predictor in all the models.

In order to identify gender differences in the determinants of utilisation of GP services, Poisson regression analyses were carried out separately for men and women (Table 6). The results show being older and holding a CHC or HUHC were all significantly related with the increased utilisation of GP services for both men and women. There was no significant difference in the utilisation of GP services between those living in the most deprived areas and the least deprived areas for both men and women. However, ethnicity and need factors had differential effects on service use for men and women. While both Asian men and women have a lower number of GP visits than the number of visits by European men and women respectively, the results are significant only for Asian women who had 39% fewer GP visits than European women. Interestingly, Maori men have more GP visits than Maori women; however, the results are not statistically significant. The need factors also seemed to be more closely related with utilisation behaviour among women. Women visiting the GP were 39% more likely to have reported 'life-threatening' problems as compared to 'self-limiting' problems. There was no evidence of any interaction between gender and any of the predictor variables that we tested for.

Discussion

This study explored the impact of gender on the utilisation of GP services in NZ. We also examined systematically the extent to which predisposing, enabling and need factors might explain the frequently noted gender difference in use of health services, in our case the utilisation of GP services. Many important findings emerge from this study.

Table 2. Gender differences in average visit duration and number of visits in previous 12 months (age-standardised)

	Males (n=3664)	Females (n=5192)	P-value*
Average visit duration (minutes)			
Total	14.8	15.1	0.29
NZDep 2001 = 1	16.2	15.5	0.29
NZDep 2001 = 5	13.9	14.4	0.33
Average number of visits to practice in previous 12 months			
Total	5.4	6.3	0.00
NZDep 2001 = 1	4.4	6.1	0.00

Source: National Primary Medical Care Survey, 2000

* NZDep2001 is a census-based small-area index of deprivation, where 1=the least deprived 20% of areas, and 5=the most deprived 20% of areas.

Table 3. Proportions of all diagnoses categorised into major groupings (age-standardised)*

Diagnosis	Male (N) (n=3553)	Female (N) (n=5063)	P-value
Administrative†	8.3	6.0	.01
Medical	57.8	53.8	.03
Surgical	44.8	39.6	.01

Source: National Primary Medical Care Survey, 2000

* Analysis limited to those visit records with disease data coded; totals sum to greater than 100% because of multiple reasons for visits in some instances.

† Visits for documentation to be completed, and preventive care.

First, in line with the literature, gender appeared to exert an important and independent effect on the utilisation of GP services, with women having higher utilisation rates than men.^{3-16,39} However, our results do not support the body of literature that suggests that women's excess in service use can largely be attributed to gynaecological and obstetrical conditions.²² We ran the regression analyses after excluding gynaecological and obstetrical diagnoses, and still found an excess of female visits as compared to men. In that respect we generally agree with Briscoe³ who found an excess of female consultations even after exclusion of sex-specific consultations for pregnancy and postnatal examinations. The study does not support the view that sex-specific conditions explain excess primary health care utilisation by women.

Second, age, CSC and HUHC were predictors of utilisation of GP services in both men and women. In general, there was a positive relationship in the use of GP services with age for both men and women. However, women exceeded men in visits to the GP across all age groups, thus refuting the frequently noted reason for female

Table 4. Treated prevalence (%) of major expanded diagnostic clusters (MEDCs) (age-standardised)*

Diagnosis	Male (n=3553)	Female (n=5063)	P-value
Ear/nose/throat	17.1	15.2	.13
Musculoskeletal	15.4	11.8	.00
Cardiovascular	10.9	9.5	.12
Skin	15.2	13.8	.21
Psychosocial	10.1	11.9	.09
Respiratory	9.3	8.4	.34
Allergy	7.1	6.1	.26
General surgery	5.8	6.5	.42
Gastrointestinal/hepatic	7.7	6.6	.17
Endocrine	3.4	3.5	.89
Neurologic	5.4	6.6	.15
Genitourinary	2.6	3.8	.05
Eye	3.2	2.8	.41
Administrative	8.3	6.0	.01
Infectious	3.1	3.0	.85
Rheumatologic	2.5	1.2	.02
Reconstructive	2.6	1.6	.07
Malignancies	1.8	0.9	.02
Nutrition	1.0	1.6	.10
General signs and symptoms	3.6	4.1	.38
Dental	0.7	0.5	.38
Haematologic	0.6	0.9	.27
Renal	0.5	0.4	.57
Toxic effects	0.5	0.7	.44
Genetic	0.3	0.1	.09

Source: National Primary Medical Care Survey, 2000

* Analysis limited to those visit records with disease data coded. There were up to four diagnoses per visit.

excess being obstetric-related.²¹ Holding a CSC or a HUHC was also positively associated, as expected, with high utilisation of GP services for both men and women, as these cards entitled the holder to lower co-payments.

Our third major finding is the differential effects of ethnicity and need on use of GP services for men and women. While both Asian men and women have a lower number of GP visits than European men and women respectively, the results are significant only for Asian women who had 39% fewer GP visits than European women.

Similarly, the findings from the separate regression analyses for men and women (Table 6) clearly demonstrate a close relationship between consultation behaviour and severity of the problem in women but not in men, suggesting that the need component was more likely to predict consulta-

tion behaviour in women than in men. NZ women are more likely than men to visit a GP when a problem is serious (Table 6). Our results diverge from those of Briscoe (1987) who found need factors to be significantly associated with consulting behaviour among men, but not among women, and those of Parslow et al.¹⁵ who found need factors to have a significant impact on both men's and women's use of GP services as well as obtaining additional services. One explanation for this divergence could be the use of different measures of need; in Briscoe's case, physical health status and the number of physical symptoms experienced over the past 12 months was used and, in the case of Parslow et al., self-assessed physical and mental health were used. However, the divergence also underlines the different meaning of health needs for men and women, suggesting that women may be more willing to admit the urgency and severity of an illness and seek help. It may also be possible that women are more interested in health matters and more aware of existing and potential health problems, and therefore more likely to obtain services from their GP, especially with urgent and severe illnesses. In comparison, men may be less concerned and knowledgeable about their health and, consequently, less likely to obtain health services. It is possible that NZ men use hospital emergency services for urgent and life-threatening conditions or that they visit specialists, while women use GPs. More detailed studies are needed for a better understanding of the reasons and underlying meaning of gender differences in the utilisation of health services.

Strengths and limitations

A major strength of the study is that the data describe patient visits to a nationally representative sample of GPs. However, there are several limitations to this study. First, bias may have been introduced as a result of the overall GP response rate of 76.7%. Non-responders tended to be male and reported greater than average patient loads. If the characteristics of patient visits to the busiest GPs differed in some systematic way, this may bias the results. The magnitude and direction of such bias is unknown.

Second, as the study is based on a cross-sectional survey design, directionality of any association between predisposing, enabling and need factors

Table 5. Incidence risk ratios * (95% confidence intervals) from the Poisson regression models of the total number of GP visits

Characteristics	Model 1 ^a	Model 2 ^b	Model 3 ^b	Model 4 ^d	Model 5 ^e
Predisposing					
Gender					
Females	1.14 (1.06–1.23)	1.23 (1.13–1.33)	1.09 (1.01–1.18)	1.12 (1.03–1.22)	1.13 (1.03–1.24)
Males	1.00	1.00	1.00	1.00	1.00
Age group (years)					
16–24		0.38 (0.33–0.45)			0.47 (0.38–0.58)
25–34		0.51 (0.43–0.61)			0.63 (0.50–0.79)
35–44		0.56 (0.48–0.66)			0.71 (0.60–0.84)
45–54		0.70 (0.57–0.87)			0.95 (0.73–1.24)
55–64		0.73 (0.64–0.83)			0.85 (0.74–0.97)
65+		1.00			1.00
Marital status					
Married		0.87 (0.79–0.96)			0.95 (0.85–1.07)
Unmarried/never married		1.00			1.00
Ethnicity of patients					
Maori		1.05 (0.83–1.32)			1.05 (0.80–1.38)
Pacific		0.95 (0.77–1.18)			0.92 (0.76–1.13)
Asian		0.71 (0.54–0.94)			0.68 (0.51–0.89)
Others		0.81 (0.70–0.94)			0.76 (0.64–0.89)
NZ European		1.00			1.00
NZDep 2001 quintile					
1		0.96 (0.83–1.10)			1.13 (0.98–1.29)
2		1.01 (0.87–1.17)			1.09 (0.95–1.26)
3		1.15 (0.97–1.37)			1.23 (1.02–1.48)
4		1.16 (0.99–1.37)			1.22 (1.05–1.41)
5		1.00			1.00
Enabling resources					
Community Service Card (CSC)					
Yes			1.49 (1.36–1.63)		1.39 (1.20–1.60)
No			1.00		1.00
High Use Health Card (HUHC)					
Yes			2.64 (2.29–3.05)		2.33 (1.93–2.82)
No			1.00		1.00
Need component–practitioner perception					
Urgency of the visit					
ASAP				0.95 (0.72–1.25)	1.03 (0.74–1.41)
Today				1.27 (1.03–1.56)	1.34 (1.05–1.70)
This week				1.22 (1.01–1.47)	1.15 (0.93–1.43)
This month				1.00	1.00
Severity of the problem					
Life-threatening				1.84 (1.25–2.70)	1.33 (1.04–1.71)
Intermediate				1.22 (1.10–1.34)	1.12 (1.00–1.26)
Self-limiting				1.00	1.00

Source: National Primary Medical Care Survey, 2000

* Incidence risk ratio measures the expected change in the dependent variable as a result of a one-unit change in the predictor variable.

a Model 1: Gross model.

b Model 2: Adjusted for age, marital status, ethnicity of patients and NZDep (predisposing characteristics).

c Model 3: Adjusted for Community Service Card (CSC) and High Use Health Card (HUHC) (enabling resources).

d Model 4: Adjusted for urgency of visit and severity of the problem (need factors).

e Model 5: Adjusted for all the predisposing, enabling, and need factors.

Table 6. Incidence risk ratios* (significance level) from the Poisson regression models of the total number of GP visits, separate models for men and women†

Characteristics	Men	Women
Predisposing		
Age group (years)		
16–24	0.41 (0.31–0.53)	0.50 (0.38–0.66)
25–34	0.52 (0.40–0.69)	0.67 (0.52–0.88)
35–44	0.66 (0.48–0.91)	0.73 (0.59–0.92)
45–54	0.92 (0.65–1.29)	0.96 (0.68–1.38)
55–64	0.83 (0.68–1.01)	0.85 (0.71–1.02)
65+	1.00	1.00
Marital status		
Married	0.91 (0.77–1.08)	0.95 (0.82–1.10)
Unmarried/never married	1.00	1.00
Ethnicity of patients		
Maori	1.39 (0.76–2.55)	0.89 (0.76–1.04)
Pacific	1.05 (0.73–1.51)	0.85 (0.69–1.06)
Asian	0.78 (0.55–1.10)	0.61 (0.43–0.85)
Others	0.75 (0.58–0.96)	0.76 (0.62–0.94)
NZ European	1.00	1.00
NZDep 2001 quintile		
1	1.07 (0.83–1.39)	1.15 (0.99–1.35)
2	1.21 (0.93–1.58)	1.02 (0.87–1.19)
3	1.34 (0.87–2.07)	1.16 (0.99–1.36)
4	1.18 (0.94–1.49)	1.23 (1.02–1.48)
5	1.00	1.00
Enabling resources		
Community Service Card (CSC)		
Yes	1.36 (1.11–1.67)	1.37 (1.14–1.65)
No	1.00	1.00
High Use Health Card (HUHC)		
Yes	2.63 (2.09–3.31)	2.22 (1.69–2.92)
No	1.00	1.00
Need component—practitioner perception		
Urgency of the visit		
ASAP	1.13 (0.78–1.65)	0.98 (0.65–1.49)
Today	1.27 (0.97–1.65)	1.37 (0.99–1.90)
This week	1.14 (0.93–1.40)	1.16 (0.86–1.58)
This month	1.00	1.00
Severity of the problem		
Life-threatening	1.29 (0.88–1.90)	1.39 (1.00–1.94)
Intermediate	1.14 (0.95–1.38)	1.10 (0.95–1.28)
Self-limiting	1.00	1.00

Source: National Primary Medical Care Survey, 2000

* Incidence risk ratio measures the expected change in the dependent variable as a result of a one-unit change in the predictor variable.

† Adjusted for all the predisposing, enabling, and need factors.

and use of primary health services cannot be inferred from our findings. We anticipate that future data collection through a longitudinal project will offer the opportunity to identify causal links between health services use and various predisposing, enabling and need factors.

Third, NatMedCa was a practitioner-based, rather than a population-based, survey. The data refer to the actual work of GPs rather than to population utilisation or to the needs of different populations. As a visits-based study, NatMedCa over-represents frequent users. For this reason care must be exercised when generalising results to the general population: the results of this study apply to users of primary health care services rather than to the general population.

Fourth, we did not control for the health status of the patients and this may have impacted our results.

Fifth, although we have adjusted for many confounding variables, it is possible that the differences we found in the visits to the GP could be the result of other factors associated with primary care that we did not measure. For example, studies have shown the effects of gender concordance (i.e. similarity in gender of physician and patient) and ethnic concordance (i.e. similarity in ethnicity of physician and patient) on aspects of health care delivery.^{41–46}

Conclusion

Notwithstanding these limitations, the study yields intriguing results. We found an independent and significant effect of gender on the utilisation of NZ GP services. This study found significant female excess in utilisation of GP services even after excluding gynaecological and obstetrical conditions and across all age groups. We also found the differential effects of ethnicity and need (severity of a problem) on use of GP services for men and women. Asian women were significantly less likely to visit a GP than European women, and women visiting GPs were more likely to have reported 'life-threatening' problems as compared to 'self-limiting' problems. However, ethnicity and the severity of a problem did not predict consultation behaviour in men.

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COMPETING INTERESTS

None declared.