Emergency contraception

Knowledge and attitudes of Nova Scotian family physicians

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Abstract

Objective To determine the extent to which Nova Scotian FPs prescribe and provide emergency contraceptive pills (ECPs) and to explore their knowledge of and attitudes toward ECPs.

Design Survey of Nova Scotian FPs using a modified Dillman method.

Setting All regions of Nova Scotia.

Participants Family physicians registered with Dalhousie University's Division of Continuing Medical Education.

Main outcome measures Sex differences in the provision of ECPs and knowledge and attitudes about the ECP Plan B.

Results Of 913 eligible FPs, 155 (17.0%) participated in the survey. Respondents resembled the sampling frame closely. Most physicians (64.0%) had prescribed ECPs in the previous year (mean number of prescriptions, 4.92); only 12.9% provided ECPs in advance of need. Knowledge about Plan B was quite good, except for knowledge of the time frame for potential effectiveness; only 29.2% of respondents answered that question correctly. Respondents generally supported nonprescription availability of ECPs, but 25.0% of FPs were concerned that this could lead to less use of more effective methods of contraception, and 39.2% believed that it would encourage repeat use. Younger FPs provided ECPs more often than their older colleagues, while female respondents had better knowledge about Plan B. In multivariate analysis being younger than 40 years was marginally associated with prescribing Plan B and with prescribing any form of ECP.

Conclusion Most Nova Scotian FPs provided ECPs and had generally good knowledge about and attitudes toward providing such contraception without prescription. However, FPs were poorly informed about the length of time that Plan B can be effective, which could potentially affect use when patients consult several days after unprotected sex. There were some concerns about nonprescription availability of ECPs, which could have implications for recommending it to patients. Rarely were ECPs prescribed for advance use, which might represent a lost prevention opportunity, especially for adolescents who often do not use effective contraception.

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EDITOR'S KEY POINTS

- Although direct data about unintended pregnancy rates are limited, a large proportion of pregnancies are not intentional, especially among teenagers. Used as a backup after failure to use contraception or after condom breakage, emergency contraceptive pills (ECPs) can reduce risk of unintended pregnancy by up to 85% and can provide protection up to 120 hours after unprotected intercourse.
- In most provinces in Canada, ECPs are available without prescription or pharmacist consultation, but FPs need to be well informed about ECPs, as they will be asked to prescribe ECPs when patients have drug plans and to provide advice when patients plan to purchase ECPs. Physicians also need to be able to educate patients about the potential benefits of ECPs. This study aimed to explore the knowledge of and attitudes toward ECPs among FPs in Nova Scotia.
- This study found that male and female FPs were equally likely to have prescribed ECPs in the previous year, but female respondents reported providing ECPs in advance of need significantly more often than male respondents did. Female respondents correctly answered questions about the length of time that Plan B could be effective and the frequency with which it induces vomiting significantly more often than male respondents did, and more women than men answered 5 or more knowledge questions correctly. No statistically significant differences were seen by sex in terms of attitudes toward ECPs.

Contraceptifs d'urgence

Connaissances et attitudes des médecins de famille néo-écossais

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Résumé

Objectif Déterminer à quel point les MF néo-écossais prescrivent et fournissent des pilules contraceptives d'urgence (PCU), et vérifier leurs connaissances et attitudes relatives aux PCU.

Type d'étude Enquête auprès des MF néo-écossais à l'aide d'une modification de la méthode Dillman.

Contexte Toutes les régions de la Nouvelle-Écosse.

Participants Médecins de famille inscrits à la Dalhousie University's Division of Continuing Medical Education.

Principaux paramètres à l'étude Différences entre les sexes relativement à la prescription de PCU, et connaissances et attitudes concernant le Plan B pour la PCU.

Résultats Sur les 913 MF admissibles, 155 (17,0%) ont participé à l'enquête. Le profil des répondants ressemblait étroitement à celui de l'échantillonnage. La plupart des médecins (64,0%) avaient prescrit des PCU durant l'année précédente (nombre moyen de prescriptions, 4,92); seulement 12,9% avaient fourni des PCU avant qu'ils ne deviennent nécessaires. Le Plan B était relativement bien connu, sauf pour ce qui est de sa période d'efficacité éventuelle; seulement 29,2% des répondants ont répondu correctement à cette question. En général, les répondants étaient d'accord pour que les PCU soient disponibles sans prescription, mais 25,0% d'entre eux craignaient que cela entraîne une utilisation moins efficace des méthodes de contraception et 39,2% croyaient que cela encouragerait une utilisation répétée. Les jeunes MF fournissaient des PCU plus souvent que leurs collègues plus âgés, et les répondantes avaient une meilleure connaissance du Plan B que les répondants. Selon l'analyse multifactorielle, le fait d'avoir moins que 40 ans était marginalement associé à la prescription du Plan B ou de toute autre forme de PCU.

Conclusion La plupart des MF néo-écossais fournissaient des PCU et avaient des connaissances et attitudes adéquates concernant ce type de contraception sans prescription. Toutefois, les MF connaissaient mal la durée de la période d'efficacité du Plan B, ce qui pourrait éventuellement affecter son utilisation dans le cas des patientes qui consultent plusieurs jours après un rapport sexuel non protégé. On exprimait certaines inquiétudes à propos de la disponibilité des PCU sans prescription, à cause des conséquences possibles sur le fait de les recommander aux patientes. Les PCU sont rarement prescrites à l'avance, ce qui peut représenter une occasion de prévention perdue, particulièrement pour les adolescentes qui n'utilisent pas de méthode contraceptive efficace.

Cet article a fait l'objet d'une révision par des pairs.
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POINTS DE REPÈRE DU RÉDACTEUR

- Même si les données sur les grossesses non désirées sont peu nombreuses, une forte proportion des grossesses ne sont pas voulues, particulièrement chez les adolescentes. Utilisées comme recours de seconde intention lorsqu'on a négligé d'utiliser la contraception ou en cas de rupture du condom, la pilule contraceptive d'urgence (PCU) peut réduire jusqu'à 85% le risque de grossesse non désirée et peut procurer une protection jusqu'à 120 heures après un rapport sexuel non protégé.

- Dans la plupart des provinces canadiennes, les PCU sont disponibles auprès d'un parmacien sans prescription ni consultation, mais les MF ont besoin d'être bien informés au sujet des PCU, puisqu'on leur demandera de prescrire des PCU aux patientes qui bénéficient d'une assurance médicament et de conseiller celles qui achètent des PCU. Les médecins doivent aussi être en mesure de renseigner les patientes sur les avantages éventuels des PCU. Cette étude avait pour but d'évaluer les connaissances et attitudes des MF néo-écossais relatives PCU.

- Cette étude a trouvé que les MF masculins et féminins étaient également susceptibles d'avoir prescrit des PCU au cours de l'année précédente; toutefois, les répondantes disaient avoir fourni des PCU à l'avance significativement plus souvent que leurs collègues masculins. Les répondantes ont répondu correctement significativement plus souvent que leurs collègues masculins aux questions sur la durée de la période d'efficacité du plan B et sur la fréquence à laquelle il peut induire des vomissements, et plus de femmes que d'hommes ont répondu correctement à au moins 5 questions de connaissance. On n'a observé aucune différence significative entre les sexes pour ce qui est des attitudes à l'égard des PCU.

In Halifax, NS, in 1992, 45% of full-term pregnancies were unintended.[1] Although such direct data about unintended pregnancy are limited, therapeutic abortion rates can serve as markers. Of 447 485 pregnancies in Canada in 2005, 96 815 (22%) were terminated. In 2006, of 30 534 pregnancies among women aged 15 to 19, 53% ended in abortion.[2] Even when taken to term, unintended pregnancy is associated with smoking and delays in seeking prenatal care.[3] In some Nova Scotian communities, almost 30% of females become pregnant before age 20.[4] Teenage pregnancy is often unintended and it is associated with poorer health outcomes for babies[5,6] and socioeconomic difficulties for mothers.[7] Used as a backup after failure to use contraception or after condom breakage, emergency contraceptive pills (ECPs) can reduce risk of unintended pregnancy by up to 85% and can provide protection up to 120 hours after unprotected intercourse.[8-10] Providing ECPs in advance of need might have potential for preventing unintended pregnancy, although this has not been seen in the evidence to date.[11]

Products marketed specifically as ECPs are available in Canada as progestin-only products (Plan B and NorLevo), and ECPs also can be prescribed in estrogen-progestin combinations. In 2005, Plan B was made a Schedule II product in Canada (ie, available without prescription after speaking to a pharmacist).[12] In 2008, Plan B was made Schedule III (ie, available off the shelf without pharmacist consultation).[13] NorLevo was approved as a Schedule III product in 2009. These ECPs are not available off the shelf in all provinces—Quebec and Saskatchewan require pharmacist consultation. Despite such increased availability, many women who have experienced unintended pregnancies have not had access to, or have failed to use, ECPs.[14]

Even with such availability, physicians need to be well informed about ECPs—they will be asked to prescribe ECPs when patients have drug plans and to provide advice when patients plan to purchase ECPs. Physicians also need to be able to educate patients about ECPs when patients are unaware of their potential benefits. Studies suggest that physicians in the United States might lack knowledge about ECPs[15,16] and that their provision of ECPs can be suboptimal,[17] but few studies have examined Canadian physicians' knowledge and use of ECPs. We used self-administered surveys to examine Nova Scotian FPs' knowledge about Plan B and their attitudes toward its availability without prescription. We also wished to see if these factors and physician demographic characteristics were associated with physicians having prescribed ECPs in the previous year or with their having provided ECPs in advance of need.

METHODS

Procedure and sample

In January 2010 we surveyed Nova Scotian FPs by fax (and where fax numbers were not available, by mail) using a list of physicians from the Division of Continuing Medical Education at Dalhousie University in Halifax, used for communicating educational opportunities. These physicians (N = 913) represent about 75% of all non-specialist Nova Scotian physicians, and their presence on this list is an indication of active involvement in primary care.

The survey was based partly on one used in British Columbia in 2002,[18] and was reviewed by 2 FP volunteers for face and content validity, with adjustments based on their feedback. We used a modified Dillman method,[19] with an advance letter outlining the project's purpose sent to FPs 1 week before the survey and a second survey sent 3 weeks after the initial survey was distributed. Ethics approval was obtained from the Dalhousie University Health Sciences Research Ethics Board.

Measures

The survey asked about FPs' personal and practice characteristics. Physicians' knowledge of Plan B was tested using 6 statements rated on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree." Those agreeing or strongly agreeing with or those strongly disagreeing or disagreeing with specific items were coded as having, depending on the question, responded correctly to each item. Attitudes toward Plan B's nonprescription availability were measured using 5 negatively phrased items rated on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree," with higher scores indicating less positive attitudes. Respondents were asked if they had written prescriptions for Plan B, Ovral, or other types of ECPs in the previous year. They were also asked whether, in the previous year, they had provided ECPs for future use if needed.

Analysis

We first carried out χ^2 tests of proportions to see if physicians differed by sex in terms of demographic characteristics and their responses to knowledge and attitude measures, both for individual items and with knowledge as a dichotomous variable (0 to 4 vs 5 to 6 correct responses) and the 5-item attitude scale as a continuous variable. Then we examined associations of having prescribed Plan B or ECPs of any type and having provided ECPs in advance of need with these factors in unadjusted logistic regressions. Finally, we included variables with a significance level of $P<.20$ in these unadjusted analyses

in adjusted models to see if those variables were associated with prescribing ECPs and providing advance ECPs, controlling for physician sex.

RESULTS

One hundred and fifty-five FPs responded (17.0% of FPs approached). Among those who did respond, 152 indicated their sex, and analysis was limited to these respondents. Respondents' characteristics corresponded closely to those of all the physicians on the original list in terms of deciles of year of medical school graduation and practice location (metropolitan Halifax regional municipality vs other). There was a greater proportion of women among respondents (51.9%) than in the sampling frame (45.0%), but this difference was not statistically significant ($P=.08$). Of all ECPs prescribed, most prescriptions were for Plan B (70.4%) or Ovral (26.9%); 1.8% were for other ECPs. The mean (SD) number of times ECPs were prescribed (all forms) by each physician in the previous year was 4.92 (6.04).

The 6 knowledge items were unacceptable as a continuous scale (Kuder-Richardson 20 = 0.42). Knowledge scores were therefore dichotomized for use in regression analysis, with 0 to 4 correct responses indicating less knowledge and 5 to 6 indicating more knowledge (median score, 4.2). The 5 attitude items worked well as a continuous scale, with a range of 5 to 25 (Cronbach $\alpha=.90$).

Respondent characteristics are outlined in **Table 1**. About one-third of respondents were in solo practice, with men more often being so. Male respondents were significantly older ($P=.002$) and worked significantly more hours ($P=.006$) than female respondents did. There were no sex differences for having prescribed Plan B or ECPs in any form in the previous year, but female respondents reported providing ECPs in advance of need significantly more often (19.1% vs 7.0%, $P=.034$).

Five of the 6 knowledge questions were answered correctly by most FPs (**Table 2**), but only 29.2% knew that Plan B could be effective up to 120 hours after unprotected sex. Female respondents correctly answered questions about the length of time that Plan B could be effective and the frequency with which it induces vomiting significantly more often than male respondents did. When the dichotomized knowledge variable was examined, more women (49.4%) than men (31.5%) answered 5 or more questions correctly ($P=.025$).

No statistically significant differences were seen by sex for the attitude items (**Table 3**), and there was no significant sex difference in mean attitude scale score. Most items revealed positive attitudes; exceptions were fairly high levels of agreement with the statements that obtaining Plan B without a prescription discourages use of more effective contraception (25.0%) and increases repeat use (39.2%).

We next carried out unadjusted regressions for associations between FP characteristics, including knowledge and attitudes, and having prescribed Plan B or any form of ECP in the previous year and with providing ECPs in advance (data not shown). Significant associations were seen between being younger than

Table 1. Descriptive characteristics of respondents, by sex

VARIABLE	MALE FPs (N = 73)	FEMALE FPs (N = 79)	OVERALL (N = 152)	*P* VALUE
Age, %				.002
• ≤ 30 y	2.7	2.5	2.6	
• 31-40 y	12.3	25.3	19.1	
• 41-50 y	23.3	40.5	32.2	
• 51-60 y	42.5	27.8	34.9	
• > 60 y	19.2	3.8	11.2	
Practice in metropolitan Halifax regional municipality, %	34.7	42.3	38.7	NS
Work in solo practice, %	38.4	24.1	30.9	NS
Work hours, %				.019
• Full-time	86.3	70.5	78.1	
• Part-time	13.7	29.5	21.9	
Mean (SD) hours per week	42.46 (12.03)	36.72 (11.79)	39.63 (12.14)	.006
Prescribed Plan B in the past year, %	49.2	53.4	51.7	NS
Prescribed ECPs (any sort) in the past year, %	62.5	65.4	64.0	NS
Provided ECPs for future use in advance of need, %	7.0	19.1	12.9	.034

ECP—emergency contraceptive pill, NS—not significant.

40 years and providing ECPs of any type in the previous year (odds ratio [OR] = 3.13; 95% CI, 1.20 to 8.16), being female and providing advance ECPs (OR = 3.12; 95% CI, 1.05 to 9.30), and greater knowledge of Plan B (using the dichotomized knowledge variable) and prescribing ECP of any type in the previous year (OR = 2.19; 95% CI, 1.08 to 4.44). Variables in these analyses that were significant at $P < .20$ were then included in multivariate models adjusting for sex. Being younger than 40 years was marginally associated with prescribing

Table 2. Percent of physicians answering knowledge questions correctly, by sex

QUESTION (T OR F)	MEN RESPONDING CORRECTLY, % (N = 73)	WOMEN RESPONDING CORRECTLY, % (N = 79)	CORRECT RESPONSES OVERALL, % (N = 152)	*P* VALUE
To be effective, Plan B must be taken "the morning after," that is, within 12 hours of unprotected sex (F)	57.1	67.1	62.3	NS
Plan B is more effective the earlier it is taken after unprotected sex (T)	85.7	94.7	90.4	NS
Plan B usually (> 50% of the time) makes women vomit (F)	38.9	60.5	50.0	.009
Use of Plan B will have a negative effect on a women's future fertility (F)	95.8	96.0	95.9	NS
Plan B is a method of abortion (F)	83.1	82.9	83.0	NS
Plan B can be effective if taken up to 5 days (120 hours) after unprotected intercourse (T)	20.3	37.3	29.2	.025
Five or more correct answers to knowledge questions	31.5	49.4	40.8	.025

F–false, NS—not significant, T—true.

Table 3. Attitudes about availability of Plan B in pharmacies without a prescription, by sex: *None of the comparisons was statistically significant.*

STATEMENT	MALE FPs (N = 73)	FEMALE FPs (N = 79)	OVERALL (N = 152)
Plan B should be sold by prescription only, %			
• Agree or strongly agree	17.8	12.0	14.9
• Neither agree nor disagree	13.7	18.7	16.2
• Disagree or strongly disagree	68.5	69.3	68.9
Being able to get Plan B without a prescription discourages use of more effective contraception, %			
• Agree or strongly agree	30.1	20.0	25.0
• Neither agree nor disagree	21.9	18.7	20.3
• Disagree or strongly disagree	47.9	61.3	54.7
Being able to get Plan B without a prescription encourages sexual risk-taking behaviour, %			
• Agree or strongly agree	20.5	11.8	16.1
• Neither agree nor disagree	20.5	21.0	20.8
• Disagree or strongly disagree	58.9	67.1	63.1
Being able to get Plan B without a prescription compromises patient safety, %			
• Agree or strongly agree	13.7	14.9	14.3
• Neither agree nor disagree	24.7	16.2	20.4
• Disagree or strongly disagree	61.6	68.9	65.3
Being able to get Plan B without a prescription encourages its repeated use, %			
• Agree or strongly agree	40.3	38.2	39.2
• Neither agree nor disagree	18.1	22.4	20.1
• Disagree or strongly disagree	41.7	39.5	40.5
Mean (SD) score* on 5-item attitude scale	11.9 (4.8)	12.8 (4.5)	12.3 (4.7)

*Possible scores ranged from 5 to 25, with higher scores representing less positive attitudes.

Plan B (OR=2.07; 95% CI, 0.95 to 4.61; *P*=.07) and with prescribing any form of ECP (OR=2.56; 95% CI, 0.94 to 7.00; *P*=.07).

DISCUSSION

Overall, 64.0% of FPs had prescribed ECPs in the previous year, mostly Plan B. Only 12.9% provided ECPs in advance of need, similar to what has been seen elsewhere.[20] This is perhaps a concern; 15% of Nova Scotian adolescents do not use effective contraception,[21] and advance provision of ECP might have a potential benefit, although studies of advance provision have not shown decreases in pregnancies.[22] This might be because the studies have been small and have had methodologic flaws.[11] Advance provision might, however, be important to women living in rural areas that are far from pharmacies or where pharmacies do not stock ECPs[23] or do not have extended hours.[24]

Although Plan B was the ECP most often prescribed, prescriptions were often written for other ECPs, mainly Ovral. This might relate to cost, as Plan B, whether by prescription or off the shelf, is relatively expensive. Ovral has been discontinued, which might represent a cost barrier to use of ECPs for some patients.

Female FPs answered knowledge questions correctly more often than male FPs did, perhaps indicating that more female FPs are involved in reproductive health issues.[25] The question about Plan B's effectiveness up to 120 hours after unprotected sex was answered correctly by only 29.2% of respondents. This confusion might have resulted because the product monograph indicates 72 hours as a limit, while the 2003 Society of Obstetricians and Gynaecologists of Canada's emergency contraception guidelines[26] recommend use of ECPs up to 120 hours after unprotected intercourse. Knowledge of the appropriate time within which to provide ECPs (based on the 72-hour limit in the product monograph) was low in a US study of primary care providers,[27] and knowledge about the time frame was also low among health care providers in a US health maintenance organization.[28] Our finding could represent an important knowledge deficiency among Nova Scotian FPs, which could limit efforts to provide ECPs when potential benefit still exists. Although knowledge of Plan B was associated with prescribing any ECP in our univariate analysis, in multivariate models knowledge was not associated with ECP provision, as has been seen previously when knowledge was examined in association with intention to prescribe.[29]

Most attitudes about the availability of Plan B without prescription were positive. However, there was concern that Plan B discourages use of effective contraception (25.0%) and that it encourages repeat use (39.2%). This suggests that FPs have concerns about a potential effect of nonprescription ECPs on contraceptive behaviour, although such perceptions are unfounded.[22,30] There was no association between attitudes and having prescribed ECPs or having provided ECPs in advance of need, so attitudes about the availability of ECPs in pharmacies as Schedule III products do not appear to influence whether FPs make ECPs available through their own services. Whether provision of nonprescription ECPs is limited because physicians do not identify this option to patients remains to be determined. Younger FPs were more likely to prescribe ECPs to patients than older physicians were, although it could simply be that older physicians did not have as many younger female patients and might thus not have had as many patients in need of ECPs.

Limitations

Our study is limited by its low response rate, although respondent characteristics closely resembled those of the sampling frame. The small sample size also might have limited our ability to detect significant differences where trends were seen. We were also unable to gauge women's need for ECPs, making it difficult to interpret the frequency with which FPs indicated providing them. In asking about prescribing ECPs in advance of need, we used the term *provided*, but did not specify whether this meant *prescribed*, *directly provided,* or both, so this may have underestimated the number of times women obtained advance ECPs. Finally, self-reported data are prone to recall bias, which may limit the accuracy of our results.

Conclusion

Our study indicates that Nova Scotian FPs commonly prescribe ECPs, that their knowledge about ECPs is reasonably good, that their attitudes toward ECPs being provided as Schedule III products are generally positive, and that younger physicians provide ECPs more often than older FPs do. Advance provision might be suboptimal, although we do not know whether physicians are advising patients to obtain ECPs off the shelf at pharmacies in advance of need. Finally, physicians' knowledge of time limits for provision of ECPs should be improved.

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Contributors
All authors contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests
None declared

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