

Fertility Treatment Decision-Making: The Effect of Insurance Coverage for Fertility Medications

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Abstract

Objective: To analyze the perceived impact of insurance coverage for fertility medications on patients' fertility treatment decision-making.

Methods: We conducted a cross-sectional study involving a patient survey and chart review of women at a Canadian university-affiliated fertility centre. The primary outcome was to determine whether women with self-reported insurance coverage for fertility medications perceived the impact of insurance coverage for fertility medications differently from women without coverage or those who do not know their extent of coverage. Secondary outcomes included differences between groups in the perceived impact of insurance coverage for fertility medications on specific treatment decisions and the type of fertility treatments undergone by patients. Data collected from the survey and chart review were analyzed using chi-square tests.

Results: More women without insurance ranked insurance coverage as having a large impact on the decision to undergo fertility treatment than women in the other groups, although this was not statistically significant. Significantly more women without insurance coverage ranked all specific treatment decisions except for the number of IVF cycles as having a large impact than did women in the other groups.

Conclusion: Women perceive that having insurance coverage for fertility medications affects the decision to undergo fertility treatment. Women without insurance are more likely to perceive that insurance coverage affects specific fertility treatment decisions than women with insurance or women who do not know whether they have insurance.

Key Words: Health insurance, fertility treatment, assisted reproductive technology, treatment decision making, fertility medications, insurance coverage, treatment decisions

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Résumé

Objectif : Analyser les effets perçus d'une couverture d'assurance incluant les médicaments de fertilité sur le processus décisionnel des patientes en matière de traitement de fertilité.

Méthodes : Nous avons mené une étude transversale comprenant un sondage mené auprès des patientes et une analyse de leurs dossiers au sein d'un centre de fertilité affilié à une université canadienne. Le critère d'évaluation principal consistait à déterminer si les femmes ayant affirmé que leur police d'assurance couvrait les médicaments de fertilité percevaient les effets d'une telle couverture d'assurance différemment des femmes ne disposant pas d'une telle couverture ou de celles qui ne connaissaient pas la portée de leur police d'assurance. Parmi les critères d'évaluation secondaires, on trouvait les différences entre les groupes en ce qui a trait aux effets perçus d'une couverture d'assurance incluant les médicaments de fertilité sur des décisions particulières en matière de traitement, ainsi que sur les types de traitement de fertilité prodigués aux patientes. Les données issues du sondage et de l'analyse de dossier ont été analysées au moyen de tests de chi carré.

Résultats : Un plus grand nombre de femmes sans assurance ont classé la couverture d'assurance comme exerçant d'importants effets sur la décision de subir des traitements de fertilité, par comparaison avec les femmes des autres groupes; toutefois, cela ne s'est pas avéré significatif sur le plan statistique. Un nombre considérablement plus élevé de femmes sans couverture d'assurance ont classé toutes les décisions particulières en matière de traitement (à l'exception du nombre de cycles de FIV) comme exerçant des effets importants, par comparaison avec les femmes des autres groupes.

Conclusion : Les femmes perçoivent que le fait de disposer d'une couverture d'assurance incluant les médicaments de fertilité affecte la décision de subir un traitement de fertilité. Les femmes sans assurance sont plus susceptibles de percevoir que la couverture d'assurance affecte des décisions particulières en matière de traitement de fertilité, par comparaison avec les femmes disposant d'une assurance ou les femmes qui ne savent pas si elles disposent ou non d'une assurance.

INTRODUCTION

With few exceptions, fertility treatment and medications are not routinely covered by the universal publicly funded provincial health care system in Canada. The main exception is in Quebec, where in 2010 the provincial health plan began funding up to three cycles of in vitro fertilization for all patients. In the province of Ontario, intrauterine insemination (IUI) and cycle monitoring are covered, but fertility medications are not. Ontario's coverage of IVF is restricted to women with bilateral tubal obstruction, who can undergo a maximum of three cycles of IVF using fresh embryos.¹ Most couples pay for all of the costs associated with an IVF cycle, and even those women who have blocked fallopian tubes must still pay the costs of their fertility medications.

In Canada, most government drug plans do not cover fertility medications.² Only 50% of Canadians have comprehensive private health insurance coverage,³ and fertility medication coverage is both variable and limited. There have been no studies analyzing the extent of coverage for fertility medications among women seeking fertility treatment in Canada.

Fertility treatment is expensive, and costs tend to increase in proportion to the effectiveness of treatment. Medications account for a large proportion of the expense of fertility treatment. Insurance coverage for fertility medications significantly lowers overall costs while allowing more freedom to choose treatment options based on potential risks and effectiveness, rather than being constrained by price. However, there have been no studies analyzing these factors in influencing patients' decisions to undergo fertility treatment.

The purpose of this study was to analyze both the perceived impact of insurance coverage for fertility medications on patients' decisions to undergo fertility treatment and the impact on the type of treatment chosen.

METHODS

Women attending the Centre for Fertility and Reproductive Health and Mount Sinai Hospital, Toronto in the months of November and December 2010 were approached to participate in the study. They were attending the clinic for a variety of purposes including initial fertility consultation, cycle monitoring, IUI, and IVF. Participants were asked to complete a one-page survey about the impact of insurance coverage for fertility medications on various fertility treatment decisions (Appendix). A corresponding chart review was performed within one week of recruitment,

recording the diagnosis, the treatment offered and chosen, the treatment undergone, the time to initiation of treatment, and the time between treatment modalities.

The primary goal of the study was to determine whether women with self-reported insurance coverage for fertility medications perceived the impact of insurance coverage for fertility medications differently from women without coverage or those who did not know the extent of their coverage. Secondary outcomes included differences in the perceived impact of insurance coverage for fertility medications on specific treatment decisions, and the type of fertility treatments undergone by patients with and without insurance coverage. Patients were divided into three groups: those who reported having insurance coverage, those without insurance coverage, and those who were unaware of their insurance status. Verification of insurance status was not performed. Answers to the questionnaire and chart review information were compared between groups.

The data collected were recorded in Microsoft Excel (Microsoft Corp., Redmond WA). Answers to the Likert-scaled survey questions were grouped as follows: no impact (1), moderate impact (2,3), large impact (4,5), and no answer (0). In Microsoft Excel, a pivot table was created for each category of insurance and treatment type, as well as for each category of insurance with patient characteristics, treatment modalities, and timing. Chi-square tests were performed for all groups and pairwise chi-square tests were performed for group comparisons using a Bonferroni adjustment method. Odds ratios were then calculated for answering a perceived high impact on the questionnaire. All statistical evaluations were carried out using the base software package for the R Programming environment (R Foundation for Statistical Computing, Vienna, Austria).

Ethics approval for the study was obtained from the Mount Sinai Hospital Research Ethics Board.

RESULTS

A total of 244 women were approached, and of these 214 consented to participate in the study. Reasons for not participating included privacy concerns ($n = 8$), no interest ($n = 6$), limited English ($n = 5$), time constraints ($n = 3$), feeling overwhelmed or uncertain how to answer ($n = 3$), and no reason ($n = 6$).

Of the women who decided to participate, 65 (30%) were approached at their initial consultation, and 149 (70%) were approached at follow-up, cycle monitoring, or treatment visits. Overall, 90 patients (42%) stated that they had insurance that covered fertility medications, 57

Figure 1. Percentage of women with insurance coverage for fertility medications at first appointment, follow-up and overall

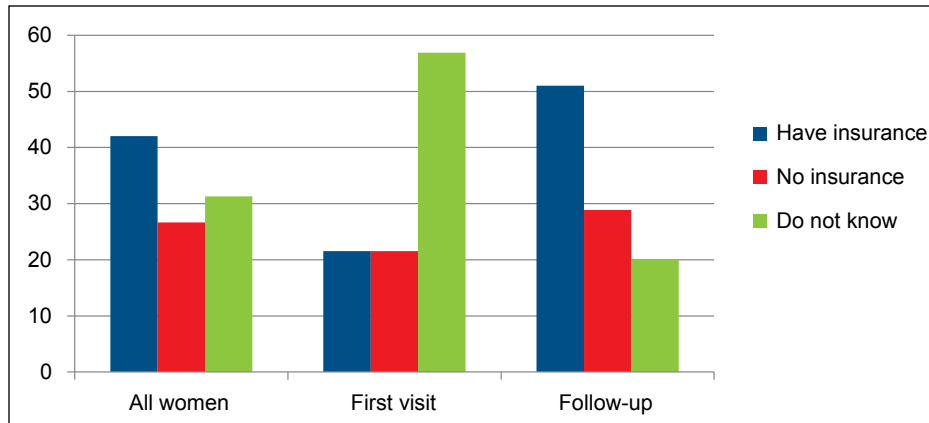
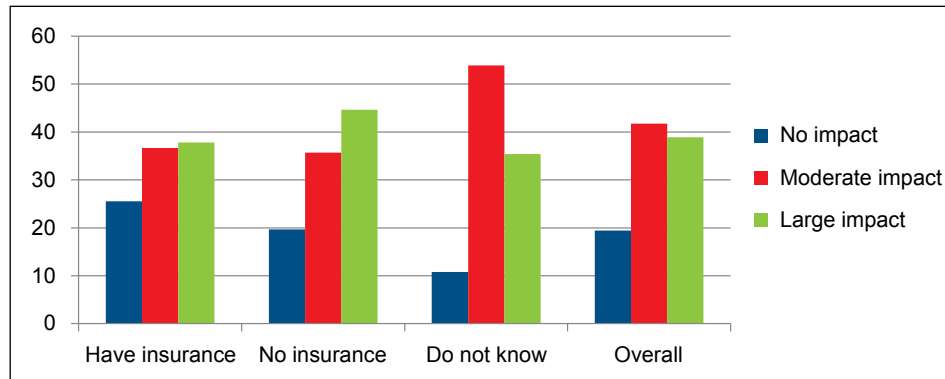


Figure 2. Percentage of women choosing no impact, moderate impact, and large impact of insurance coverage on the decision to undergo fertility treatment



(27%) stated that they did not have insurance coverage, and 67 (31%) did not know. Many women were unaware of insurance coverage at initial consultation but more women at follow-up appointments could specify their insurance coverage status (Figure 1).

Women with insurance were asked about limitations of their coverage. Of the 90 women with insurance, 38 (42%) had a lifetime dollar limit, eight (9%) had an annual dollar limit, nine (10%) had a lifetime cycle limit, none had an annual cycle number limit, four (4%) had no limit, five (5%) had a fixed percentage of the drug costs covered, one (1%) had a combined annual and lifetime limit, and 25 (28%) were unaware of any limitations on claims on their insurance.

Women were asked to rank their perceptions of the impact of insurance coverage for fertility medications on the decision to undergo fertility treatment. Forty-one (19%) selected no impact, 88 (42%) selected a moderate impact, and 82 (39%) selected a large impact (Figure 2).

When women were separated into three groups, a greater percentage of women without insurance indicated that insurance coverage had a large impact on their decision than the other groups, with an odds ratio of 1.38, although this was not statistically significant ($P = 0.061$).

Overall, most women identified a moderate or large impact of insurance coverage for fertility medications on each specific fertility treatment decision (Figure 3). When they were separated into three groups, significantly more women without insurance coverage identified a large impact of insurance coverage on all treatment decisions except for the number of IVF cycles than the women in the other groups ($P < 0.05$) (Figure 4).

When asked what they would do if they had unlimited coverage for fertility medications, 33 (16%) said they would do nothing differently, nine (4%) were unsure, 28 (13%) did not answer the question, and the remaining 144 (67%) women stated that they would undertake a variety of

Figure 3. Overall percentage of women ranking no impact, moderate impact, and large impact of insurance coverage on each fertility treatment decision

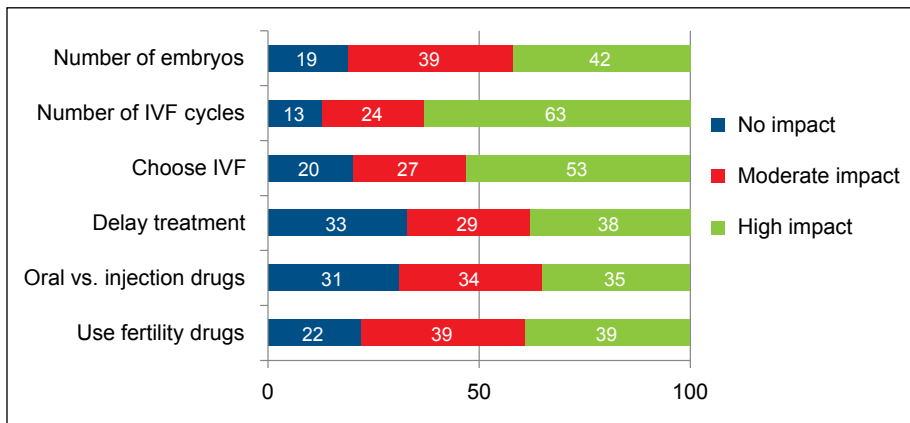
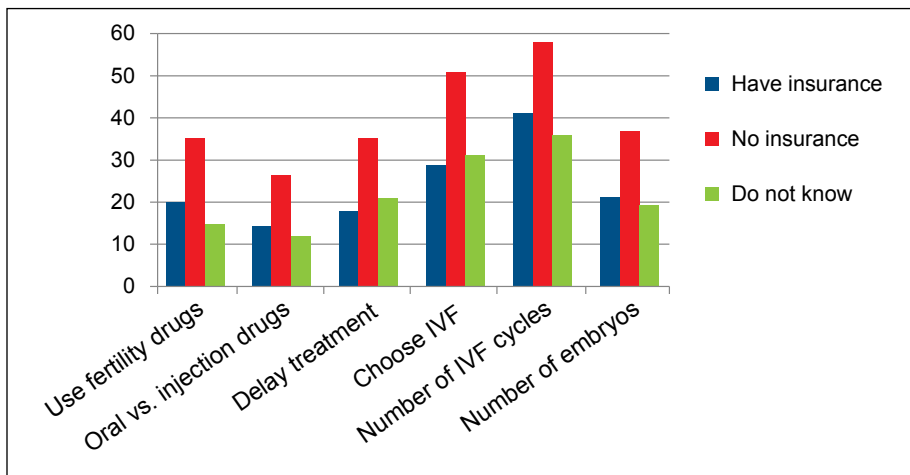


Figure 4. Percentage of women who believe insurance coverage has a large impact on specific fertility treatment decisions



P < 0.05 for all decisions except the number of IVF cycles

options, including more cycles, more aggressive treatment, having less time between treatments, beginning treatment earlier, and moving to IVF sooner, and that they would have less worry and stress.

A chart review of the 149 women who had already begun treatment demonstrated no significant differences between the groups in age, gravidity, parity, duration of infertility, and annual gross household income. Overall group comparisons demonstrated no significant differences in type of infertility recorded (*P* = 0.057), treatment modalities offered (*P* = 0.056), and treatment modalities chosen (*P* = 0.067). Subgroup analyses were performed for each inter-group comparison. While no significant differences were found when women with insurance

were compared with those without insurance (*P* > 0.05), significant differences were found when women with insurance coverage were compared with those who did not know whether they had insurance (Table). There were more patients with unexplained infertility and fewer patients with tubal factor infertility in the group who did not know whether they had insurance than in the group who did have insurance (*P* = 0.009). Treatment with gonadotropins and IVF were more likely to be offered, and clomiphene citrate therapy was less likely to be offered to women with insurance coverage than to those who did not know whether they had insurance (*P* = 0.012). Likewise, a higher proportion of patients with insurance coverage than patients who did not know whether they had insurance (*P* = 0.045) chose IVF as their initial treatment.

Statistical comparisons based on chi-square tests for all group comparisons and inter-group comparisons using a Bonferroni adjustment method

Outcome	Overall groups <i>P</i>	Yes vs. no insurance <i>P</i>	No vs. don't know insurance <i>P</i>	Yes vs. don't know insurance <i>P</i>
Type of infertility	0.057	> 0.99	0.906	0.009
Treatment offered	0.056	> 0.99	> 0.99	0.020
Treatment chosen	0.067	> 0.99	0.622	0.045

Overall, no differences were found between groups in the time between the first consultation and the first medicated cycle, the time to complete three IUI cycles or one IVF cycle, the time from the first consultation to pregnancy, or the number of treatment cycles undertaken before a pregnancy was achieved. No significant differences were found between groups in the number of clomiphene-stimulated cycles, gonadotropin-stimulated cycles, or embryos transferred at IVF. However, there was a significant difference between groups in the number of monitored natural (unmedicated) cycles with timed intercourse or IUI ($P = 0.047$) with a mean number of cycles of 0.63, 8.25, and 5.08 for those with insurance, those without insurance, and those who did not know whether they had insurance, respectively. Furthermore, a significant difference was also found between groups in the number of IVF cycles undertaken ($P = 0.038$) with a mean number of cycles of 0.91, 0.69, and 0.13 for those with insurance, those without insurance, and those who did not know their insurance status, respectively.

DISCUSSION

Many couples in Canada struggle with the financial burden of fertility treatment. Since medications account for a large portion of the cost of fertility treatment, having private insurance coverage can have a substantial impact. Our survey found that although 57% of women were unaware of their insurance coverage at the time of their first consultation, only 20% of women undergoing fertility treatment were unaware of their insurance coverage. Of those women undergoing fertility treatment, 51% had some form of coverage for fertility medications from private insurance. However, the extent of coverage is variable; our survey found that 28% of women were unaware of any limitations on their insurance coverage and in many cases did not know that limitations existed. The extent of patients' insurance coverage is an important factor that women should be counselled about before embarking on expensive fertility treatment.

The majority of women surveyed in this study stated that having insurance coverage for fertility medications had an impact on their decision to undergo fertility treatment, whether or not they had insurance coverage themselves. Women also perceived an impact of insurance coverage on specific treatment decisions, with an even greater impact perceived by those women without insurance than those in the other groups. This is not surprising, because women without insurance coverage undertake a greater financial burden to undergo treatment than do those who have insurance. However, these perceived differences did not translate into actual differences in the types of fertility treatment that women would undergo, except for the number of monitored natural (unmedicated) cycles and IVF cycles. These treatment differences may be due to fundamental differences in the groups of patients surveyed in this study.

While no statistically significant differences were found overall between the groups in type of infertility, subgroup analyses identified statistical differences between those with insurance and those who did not know their insurance status, likely accounting for differences in the treatment modalities offered and chosen. The group with insurance coverage had a higher proportion of women with tubal factor infertility; this likely accounts for proportionally more of them being offered IVF and undergoing IVF than those who did not know whether they had insurance, because IVF is funded in Ontario for women with tubal factor infertility. Likewise, treatment with gonadotropins was more likely than clomiphene citrate therapy to be offered to women with insurance than to those without because gonadotropins are an affordable option for these patients with an improved pregnancy outcome.^{4,5}

Our study suggests that many women are unaware of the extent and limitations of their insurance coverage when they first seek fertility treatment, yet they perceive coverage as having an impact on the decision to undergo treatment. Other factors may contribute to the decision to undergo fertility treatment, such as perceived rates of success, the perceived invasiveness of different fertility treatments, personal feelings about fertility treatment, and the

perceived importance of achieving a pregnancy; these may play a larger role in the decision-making process than cost. These were not evaluated in our study and would be useful to assess in relation to the impact of insurance coverage in future studies. Furthermore, a prospective study that follows patients throughout the fertility treatment process would better identify differences in decisions about fertility treatment between patients with and without insurance coverage and the outcomes of treatment at the same stage of management. Regardless, many patients in Canada could benefit from more extensive coverage for fertility medications, allowing them more freedom to choose treatment based on factors other than cost.

CONCLUSION

Women seeking fertility treatment perceive that insurance coverage for fertility medications affects the decision to undergo fertility treatment, whether they have insurance coverage for fertility medications or not. Women without insurance are more likely than women with insurance and those who do not know whether they have insurance to perceive that insurance coverage affects specific fertility treatment decisions. However, this perception has little effect on the types of treatment undergone by women with or without insurance coverage.

ACKNOWLEDGEMENTS

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**APPENDIX: INSURANCE COVERAGE FOR
FERTILITY DRUGS STUDY QUESTIONNAIRE**

Please answer the following questions to the best of your ability by circling the best answer:

1. Have you called your insurance company to find out what coverage you have for fertility medications?

(Yes / No / Not yet, but I intend to)

2. If yes, do you or your partner have insurance coverage for fertility medications?

(Yes / No / Don't Know)

- a. If so, what limits does your insurance coverage have on fertility medications (eg. Lifetime vs. Annual \$ amount, lifetime vs. Annual # of cycles etc.)?

Please be as specific as possible about \$ amounts or # cycles allowed.

3. What is your annual gross household income?

- a. ≤ \$50 000 / \$50 001 to \$99 999 / ≥ \$100 000 / prefer not to answer

4. In what way do you think that that having or not having insurance coverage for fertility medications has affected or could affect the following decisions about your fertility treatment?

- a. The decision to undergo any fertility treatment?

No impact	Moderate impact	Large impact	N/A
1	2	3	4
			5

- b. The decision to use fertility drugs?

No impact	Moderate impact	Large impact	N/A
1	2	3	4
			5

- c. The decision to use oral versus injection fertility drugs?

No impact	Moderate impact	Large impact	N/A
1	2	3	4
			5

- d. A delay in starting fertility treatments?

No impact	Moderate impact	Large impact	N/A
1	2	3	4
			5

- e. The decision to do in-vitro fertilization (IVF)?

No impact	Moderate impact	Large impact	N/A
1	2	3	4
			5

- f. The total number of IVF cycles you have/will try?

No impact	Moderate impact	Large impact	N/A
1	2	3	4
			5

- g. The number of embryos you have/will transfer at each IVF cycle?

No impact	Moderate impact	Large impact	N/A
1	2	3	4
			5

5. If your insurance covered unlimited fertility medications, would you do anything differently with your fertility treatment, and if so, what would you do differently? (e.g., more cycles, more aggressive treatment, less time between cycles)