Cost-benefit analysis of infertility treatments based on willingness to pay approach

ABSTRACT:

Introduction: Infertility among couples is a key issue that has been widespread in the new era nearly all the world and different communities. Infertility treatments can be done in different levels. Drug therapy and surgery are common treatments, along with these, more advanced techniques have used as the ART. Due to the advanced, infertility treatments are usually very expensive and there are many factors that couples are not able or willing to use this services which that the cost of this services is astounding cases. Given that the prevalence of infertility in Iran is 20.2 percent and only a small percentage of these people are able to pay their expenditures, it seems that need attention of policy makers at a time when we need population growth. The aim of this study is extracting the practical results and scientific documents on the basis of cost-benefit analysis based on willingness aproach of the market situation of infertility treatments in order to notification the market situation in this treatments.

Methods: Current study, is a cross sectional, analytical and kind of economic evaluation studies which was conducted in two steps in Kerman and Isfahan. In first step infertility per capita cost was calculated in the three levels of drug therupy, IUI and IVF using tariff information of relative value book and information from medical records in infertility clinics and existing treatment protocols. Then cost-benefit analysis was conducted under different scenarios by using the willingness to pay questionaire for infertility treatments. In the second step, according to the first step results, practical strategies for insurance organizations and policy makers have been provided in order to covering these services. To determine the sample size for estimating the willingness to pay, Mitchell and Carson Table was used. With consider confidence of 0.1 and a relative error of 2.5, the sample size for this study was determined 604 couples. To perform the analysis and evaluation of the results, economic evaluation and econometrics techniques were used.

Results: Per cycle costs of drug treatments, IUI and IVF were 668,964, 1,956,114 and 6,089,761 *toman*, respectively. The willingness to pay for these treatments also were 1293256, 1594106 and 2887083 *toman* for each treatment cycle, respectively. It was found that drug treatments have positive net benefits and NPV is equal to 624,292 *toman*. IUI and IVF treatment also have negative net benefits. The NPV of IUI and IVF were -362007 and -3202678, respectively. According to the results of willingness to pay compared to the current cost of therapeutic levels of IUI and IVF, it is clear that the 19% and 47% expenditures from a third party.

Conclusions: Attitude to economic issues associated with infertility and how vision, whether economic, social and long-term or short-term attention to this issue, the type of policy and how it will be different. If a short-term economic visibility to the issue of financing and subsidies will be given to the treatment of infertility, as the results showed, investment and Subsidies costly treatments of the second and third levels did not have positive net benefits. But if there are long-term economic perspective, note that children who have born from these treatments may become an economic active person in the future, at the period that country is in danger of aging and active labor shortage is threatening. Results and analysis extracted from this study

provided fully functional that policy makers with using the results and the proposed scenarios along with more detailed statistical analysis can be an effective step away from populist policies in line with its targets.

Keywords: *Cost-benefit analysis, Infertility treatments, Willingness to pay, Economic evaluation*

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