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Original Paper

Medical Tourism and the Egress of Economic Depression: The Case of Assisted Reproduction Services in Greece

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Abstract

While the international literature has examined how the domestic population growth and domestic fertility rates affect economic growth, there is no research about how the foreign fertility rates can affect the domestic economic growth. The bridge on foreign fertility rates and domestic economic growth is the assisted reproductive health services provided through the market of medical tourism. Libertarian legal frameworks may attract health travelers for In Vitro Fertilization (IVF) and contribute to GDP growth from the side of the tourism industry. The present paper discusses this point of view as a vehicle for depressed economies such as Greece that enjoys a high expertise in IVF and tourism. A simplistic attempt of the potential turnover to the clinics is presented by estimating the future medically assisted births. The results give a clue of how a dynamic part of medical tourism can result beneficially for the exodus of economic depression.

Keywords

Medical Tourism, Assisted Reproduction, IVF, Economy, Greece

1. Introduction

Medical tourism as a scientific term was introduced in the early 2000s' in order to capture the notion of travel warning for potential health risks in specific geographic areas. It was rather a travel recommendation about the required vaccines or the inherent danger of contagious diseases and new viruses that afflicted the developing and poor countries. In a way or another, these recommendations aimed to protect tourists and high income countries by an "imported" infection that could result to outbreak after tourists' return to their countries.

But medical tourism is well known from the ancient times. Historians reported that it was the time of the Greek's Empire acme where foreign people were seeking care to the therapy temples and the mineral thermal baths for hydrotherapy (Weisz, 2011; Routh et al., 1996). The following centuries,

medical tourism was emerged to other European territories, mostly as water healing resorts. Villages that delivered medical tourism services were developed and become prosperous, experiencing building actions for infrastructures and road networks that could enable the access of tourists (see http://www.health-tourism.com/medical-tourism/history).

Medical advances brush back medical tourism industry that was related to water therapies and it was shifted to medical migration. This means that people seeking therapy were travelling from their country to the country which enjoyed a higher level on medical technologies and knowhow. This is the era of the 20th century and USA was the most attractive destination for those who couldn't get appropriate care in their own country (de Arellano, 2011). In other words, medical tourism was fueled by doctors' state of the art.

At the dawn of the 20th century, several low income countries tried to develop health programs in order to attract patients from higher income countries. This was the case of Cuba, Caribbean countries and Latin America's countries. Their major advantage was the low price and the shorter waiting time (Li & Cui, 2016).

Just at the end of the 90's the Asian countries started to invest in medical tourism industry for wealthy people, offering social privacy and services that were equivocal or under law requirements to the Western economies (Burkett, 2007; Turner, 2007). Given that legislation and bioethics differ among countries, there is a sort of touristic groups that seek care where health care is deregulated or health related requirements are looser. This demand for medical services with low government control led some countries to develop medical markets in an opportunistic basis. Therefore, scientific research is now oriented about the quality of care in the host countries and the health risks undergoing intensive care operations (Eggertson, 2006).

In the 21st century medical tourism industry seems to change as hospitals and health facilities are oriented to accreditations in order to address quality issues. Furthermore, given that there is an increasing interest of insurance companies to develop medical tourism plans based on a lower-cost of care, the industry is expected to expand.

2. Method

2.1 The Case of Greece

It is acknowledged that the industry of tourism has a great weight to the Greek economy; therefore health economic insights are appreciable. Greece faces many economic problems, mostly on public finances since 2009. In this period the prices were downsized and the country enjoyed a new type of tourists, the health travelers.

Economic problems were started even earlier. In fact, the first year of the new currency (Euro is issuing in the Greek economy) resulted in a loss of economic competitiveness but the next year Greece reached its historical high score. The preparations of Olympic Games (2004) helped the Greek economy to keep similar scores but in a declining trend. The loss of competitiveness was radical when the country

accepted a bailout program combined with spending reductions and tax increases. Greece clawed back a portion of its competitiveness when the recession rate was downsized and turned instantly to positive. It is noteworthy that in 2015 Greece was the only Eurozone member in recession.

Expectantly, the locomotive of Greece—tourism—was the green light to an economic egress. Insightful clinics traced new business fields. While tourism is 30,9% of GDP (2018), still there is a room for economic growth through medical tourism. The rate of medical tourism in GDP is not traced but it is concerned as a potential figure.

The most notorious health service in Greece, subject of medical tourism, is the assisted reproduction therapy for sub-fertility or infertility problems.

Infertility is also common in Greece. About 92.000 IVF cycles are performed every year. A 20% ends to an immediate successful result and a great amount of embryos is cryopreserved. Given that statistics show that only 1/3 of the cryopreserved embryos can result in a successful pregnancy in a longer time, when the couple returns for another try, in this paper we employed a projection of the births that can be happen by year. Under these assumptions, we employed a simple formula of birth projections until 2030.

3. Result

After the subtraction of 20% of each year IVF cycles we added 1/3 of the remaining cryopreserved embryos which could result to real births if a constant rate of couples would revisit the clinic in order to enlarge the existing family with another child or children. The resulted curve shows that in 2030 embryo transfers to the uterus will be doubled from 98133 to 199587. Additionally, births from cryopreserved embryos will rise to 103% (see Figure 1). This example shows the development potentiality on the medical tourism market if specific goals will be set. Moreover, births are well combined with the economy and the public finance through the labor market and insurance.

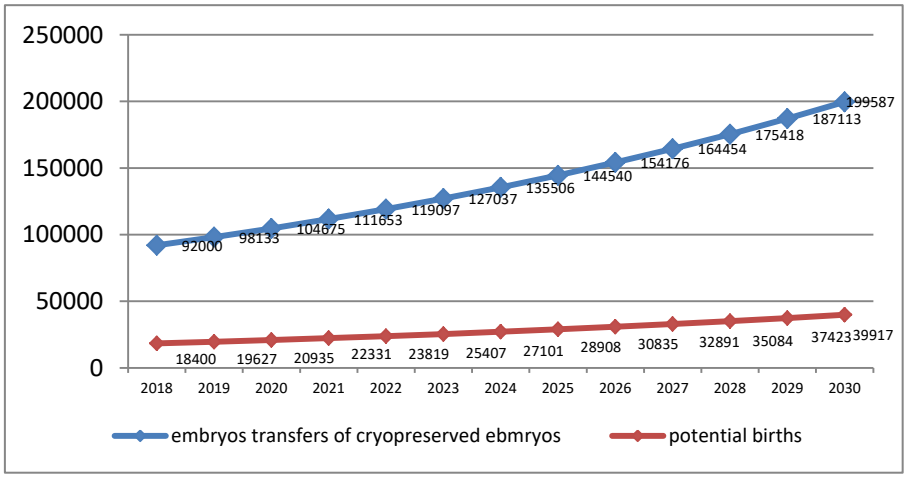

Figure 1. Embryos Transfer Projection through Crypopreseved Embryos and Births Projections to 2030

These data put new inquiries to the discussion upon the relation between fertility rate and economic development. So far empirical population statistics show that fertility rates tend to reduce in the areas with advanced economies. On the opposite, the research of Myrskyl ä et al. (2009) estimated that this pattern can change within highly developed countries. But the case here is different. Greece experienced a long-term persistent recession, which drove down its economic competitiveness and GDP. Austerity programs had as a result the decrease of wages, but competitiveness was still in a cathodic way. The labor costs were inculpated as the main factor that led to low competitive rates. Wage restrictions had directly influenced the domestic fertility decisions. But citizens of other countries that do not experience a wage decline can proceed with fertility decisions. The labor expertise such as the IVF process may result as the competitive advantage to Greece's economic flourishment. In other words an organized sector of medical tourism on IVF could influence positively the public finance (as health services exports).

4. Discussion

Sub-fertility is a phenomenon of our modern time. Life style habits (diet, work) and the environment have an indirect impact on procreation. Sub-fertility therapies share similar medical methods, but legal frameworks follow different directions among countries. Greece enjoys a libertarian legal framework for IVF therapies, cryopreservation and donors, which is a competitive advantage for the country and the couple. It is an advantage at the start which can be proved beneficial in many ways, such as the available options, the potential number of efforts, the time consumed and the cost of therapies. Moreover, Greece is advantageous due to its competency regarding the diagnostic tests and therapy services and the access to pharmaceuticals. For health travelers, Greece is a practical destination that will satisfy the health needs owing to its excellent knowhow, rewarding results and low cost.

In Greece, IVF is a method applied with discipline only to couples with sub-fertility problems or it can be employed to whom desires to become a parent with the assistance of medical technology. IVF can be applied to healthy individuals who do not suffer from a sub-fertility problem, but may need a Preimplantation Genetic Screening (PGD) in order to detect and diagnose any genetic disease of the embryos before their transfer in the uterus.

The couples of foreign countries have the right to visit Greece and undergo sub-fertility or infertility therapies. Greece provides free access to medically assisted reproduction therapies for every citizen of the world.

After the embryo transfer in the uterus or after the artificial insemination process, the couple can travel back to its country without jeopardizing the success of the treatment. In fact, (20) minutes of bed rest after the embryo transfer or the intrauterine insemination are enough for a successful outcome. The Clinical Guideline [CG156] published by the National Institute for Care and Health Excellence (NICE), February 2013 and updated the August 2016, recommends that a longer duration is not related to improved outcomes (see the recommendation 1.12.6.3).

On the other way, a prolonged stay after the embryo transfer or the intrauterine insemination could result more beneficial rendering the state of tense anticipation unconcerned and pleasant until the pregnancy test. But there is a limit on the efforts. A four (4) months pause is required between cycles. This is equivalent to three 3 efforts per year when ovarian gonadotrophin stimulation process is applied. In other words a woman cannot undergo continuous IVF fertility therapies in consecutive cycles.

The legislation offers the possibility for a couple to cryopreserve its embryos or its gametes in order to use them in a future travel in Greece. The capable for surviving embryos and the viable gametes can be cryopreserved to Cryo-preservation Banks for five (5) years with a possibility of the additional 5 years (maximum ten years).

An IVF cycle requires a brief time. If ovarian stimulation is applied, it is needed (a) for the ultra-short protocol 10 days, (b) for the short protocol 14 days and (c) for the long protocol 28 days. The days of travelling are not included in these periods.

The presence of the couple in the Fertility Clinic is not necessary during the whole time of a protocol. The couple may visit the Fertility Clinic just before the egg collection when conformance to the protocol is feasible to the country of residence. In other cases, the woman must be present during the protocol and the husband may come to the Fertility Clinic at a later time, and be definitely present the day of egg collection.

When freeze embryos are transferred, the required time of staying is shorter. If the fertility therapy is not combined with a vacation, only 2-3 days of sojourn are required. The required diagnostic tests can be performed in Greece or from abroad and be accepted as valid.

Another limit of the Greek legislative frame for the assisted reproduction in Greece is the age of the woman. The maximum legal acceptable age is 50 years old. Men are not under age restrictions. This age limit is applied when the couple involves a surrogate mother too. In this case the law anticipates that the surrogate mother and the couple must have Greece as their permanent residence (see Law 3089/2002, articles 1458, 1464 of the Greek Civil Code).

Assisted reproduction is not always free of health risk. When a woman is undergoing ovarian gonadotrophin stimulation for IVF, it is aimed to produce a high number of mature eggs. This could cause the ovarian hyperstimulation, which is not a threat to the fetus. Other complications of the IVF are the multiple pregnancies which relate to an increased risk in adverse perinatal outcomes and burrowing of the vascular pelvis during egg collection.

The Greek law (see Law 3305/2005) allows the use of heterogeneous gametes, i.e., eggs and sperm from Greek anonymous donors or from Cryos Banks of European countries. Additionally, the Greek law accepts the gender choice only when there is a genetic disease related to the gender. The surrogate mother can also be close or blood relative to the couple. In other words a couple can choose the gender only if hereditary health risks exist and the surrogate mother may come from its benign environment. Only the donors of eggs and sperm are anonymous.

After 42 years of age the women are losing their fertility and seek help from donors' eggs. The

maximum number of embryos that can be transferred to the uterus depends on a woman's age and the number of the cycles that she has been undergoing (See GG 2589/2014). The dilemma of a physical cycle versus IVF shows that IVF has higher rates of success. Embryos are transferred only once, either in the state of blastocysts or in the state of embryos. After a successful IVF that resulted in a pregnancy, the mother can be attended by the obstetrician/gynaecologist of her choice.

After the above brief presentation of the Greek legal framework, the aim of this paper was to highlight a competitive advantage that could result beneficial for the Greek economy. Given that the highest industry of the country is tourism, a deep engagement at a national level to the medical tourism, appears as an economic opportunity for growth. In this paper, we exhibited the assisted reproduction as the most promising health service for development and a projection of births was employed based on the current data. Results showed that in a decade the turnover of the clinics may be doubled and the births of cryopreserved embryos may be doubled too. So far, the literature is lacking upon the benefits of IVF upon growth through the potential baby-boom. Much of the current thinking about the economic effects of fertility are based on modeling using as dependent variable the growth of GDP per capita and as independent variables the rates of fertility, mortality, and the age structure of the population (Quamrul et al., 2013).

5. Conclusion

The Greek people have postponed fertility even more due to the economic depression and wage decline. The cutback of wages had an effect on prices fall in many sectors such as health and specifically in medically assisted reproduction. This circumstance is an opportunity for growth. A sort of fertility's exportation through IVF clinics can "warm" the domestic economy as a service provided by the touristic industry. Moreover, the fertility rate expansion of foreign consumers (health travelers), may produce accumulative changes in their economies.

Greece enjoys a heritage on medical treatment since the ancient times, which dignifies a prestigious background on health care. The Centres of antiquity Health, Asclepieia, combined therapeutic art and harmony by activating patients' body and mental state. To the patient it was offered a holistic standardized care package where the emotional human condition was treated in harmony with the environment and the theater spectacles. It is not an overstatement to argue that the origins of Medical Tourism are commonly credited to Greece. This perpetual experience had led many clinics in Greece to launch a medical tourism package of health services. The top health service is the medically assisted reproduction due to the libertarian legislation, the sound knowhow of health professionals and the innovative technological methods for infertility or sub-fertility therapies.

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