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Original Article

Economic parameters associated with the management of female urinary incontinence in the Greek population

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Abstract

Introduction: Urinary incontinence (UI) generates great expenses for individuals and societies. The aim of this study was to analyze the economic burden of UI in the Greek female population and the National Health System (NHS) as well.

Material and Methods: Participants completed a special questionnaire by personal interview. The study group consisted of 2,000 women between 20 and 80 years old. Most participants (39%) were between 20-39 years old, while 33% ranged between 40-59 years. Women 60-80 years old represented the 28% of the study group members. Half of the questionnaires were collected from the main cities and the other half came from smaller towns and rural areas.

Results: UI was reported by 531 women (27%). Only 17% had sought medical advice. The total cost for patients and the NHS for the management of UI in Greece was estimated at €128,916,086.64 annually.

Conclusions: UI is a common condition among Greek women. It leads both women and the NHS to a remarkable monthly financial charge. A strong effort of all health professionals to give responsible information and solutions in cooperation with specialized Urogynecology Clinics is needed.

Key words: urinary incontinence; economy; cost; questionnaires

Introduction

Urinary incontinence (UI) is a frequent disturbing condition, which affects women, regardless of their age, race and socioeconomic status[1,2]. The International Urogynecological Association (IUGA) / International Continence Society (ICS) Joint Report on the Terminology for Female Pelvic Floor Dysfunction defines UI as "the complaint of involuntary loss of urine" and identifies several UI subtypes, with the most common being stress UI (SUI), urge UI (UUI) and mixed UI (MUI)[3]. Therefore, it becomes clear that there are many ways through which UI can not only worsen the quality of life for numerous females around the globe, but also generate great expenses for individuals and the societies as well. The latter gains considerable importance in a rapidly aging world in which financial instability tantalizes more and more countries[4].

Table 1. Part of the overall study questionnaire regarding financial aspects of UI management

"Have you ever visited a physician for your problem"?
"Which was the specialty of the physician who you visited for initial evaluation and which is the specialty of the physician who is currently involved in the management of your incontinence"?
"How much money do you pay for each visit"?
"Which measures do you take for your problem"?
"How much money have you spent during the last month for routine care items"?
"How much time do you take anti-incontinence drugs and how much money do you pay for them"?
"Have you undergone/will you undergo anti-incontinence surgical procedure"?

The frequency and socioeconomic burden for UI is estimated to be greater than those of internationally widespread diseases, such as diabetes mellitus (DM), chronic obstructive pulmonary disease (COPD), osteoporosis and cerebrovascular accidents[4]. Although many patients would pay significant amounts for a UI treatment, only 25% of them receives it[5,6]. Previous studies have shown that treatment of UI is cost-effective compared with no treatment at all. It is estimated that women suffering from severe UI give approximately $900 annually as personal expenses for routine care items[7]. Costs arising from SUI could be decreased by the implementation of suburethral slings or open/laparoscopic Burch colposuspension[8]. Furthermore, not just the use of antimuscarinic drugs, but also the introduction of modern agents like onabotulinumtoxinA (Botox™), which is an acetylcholine release inhibitor and neuromuscular blocker, and mirabegron (Myrbetriq™), which is a β_3-adrenoceptor agonist, have proven to be effective in the reduction of the direct costs, overactive bladder-outpatient care costs and inpatient costs[7,9–11]. The aim of this study was to examine economic parameters in the management of UI in the Greek female population.

Material & methods

This was a questionnaire-based epidemiological study followed by economic analysis of several parameters associated with the management of UI among the Greek female population. The research protocol was organized under the supervision of the Second Department of Obstetrics & Gynecology of the University of Athens and was approved by the Institutional Ethics Committee. The study was performed by personal interview and based on a specially structured questionnaire. The study group consisted of 2,000 women, aged between 20 and 80 years old. The study population included women from Athens and Thessaloniki, which are the two largest cities in Greece, as well as females from large urban, urban and rural areas.

It was representative of the total population of women aged between 20 and 80 years in relation to their age group and region, according to the National Statistical Service of Greece (NSSG), which was 4,197,143 women. Participants for the study were selected based on the guidance provided by the NSSG, in order to select women whose educational, financial and social status would be representative of the whole country. The majority of women (39%) were between 20-39 years, while 33% ranged between 40-59 years. The group of older women (60-80 years old) represented the 28% of the study group members. Half of the questionnaires were collected from the main cities of the country, while 22% and 28% of answers came from smaller towns and rural areas, respectively. The incontinent participants where asked a series

Table 2. Studies on the Economic Burden of UI

Study	Reported Costs
Ankardal et al. 2007[14]	Direct health care costs of treatment for stress urinary incontinence (2003 € - Sweden): €1,366 per patient for TVT €2,431 per patient for OBC €2,310 per patient for LBC
Hu et al. 2003[15]	Direct costs of OAB & UUI (institutionalized female population) in 2000 USD: Total per year: $2.85 billion Routine care: $2.77 billion Other: $80 million Annual per patient: $5,635
Hu et al. 2004[16]	Total socioeconomic cost for OAB and SUI: $24 billion (2000 $)
Manca et al. 2003[17]	Direct health care costs of treatment for stress urinary incontinence (1999-2000 £): £1,058 per patient for TVT £1,301 per patient for OBC
Montesino-Semper et al. 2013[8]	Full average annual cost of surgical treatment: €1,220 per patient (2013 €-Spain) €1,067 per patient for SUI (2013 €-Spain) €1,628 per patient for MUI (2013 €-Spain)
Subak et al. 2007 (RRISK)[10]	Routine care direct costs per patient (2005 $): Mean cost/week: $3.91 for SUI, $6.02 for UUI and $6.35 for MUI Mean cost/year: $204 for SUI, $313 for UUI and $330 for MUI
Sung et al. 2012[4]	Total social costs of OAB in 2007 ₩: 145,438,817,568 Total costs of SUI in 2007 ₩: ₩ 58,850,214,705
Wilson et al. 2001[9]	Direct annual cost of female UI (1995 $): $12.4 billion

SUI: *Stress Urinary Incontinence,* ***UUI:*** *Urgency Urinary Incontinence,* ***MUI:*** *Mixed Urinary Incontinence,* ***OAB:*** *Overactive Bladder,* ***₩:*** *Korean Won (the currency of South Korea),* ***TVT:*** *Tension-free Vaginal Tape,* ***OBC:*** *Open Burch Colposuspension,* ***LBC:*** *Laparoscopic Burch Colposuspension,* ***$:*** *United States Dollars,* ***£:*** *Great Britain Pounds*

of questions regarding the management of UI (Table 1).

Costs for UI are direct (diagnosis, pre-operative and post-operative evaluation, behavioral, pharmacological and surgical treatment, routine care and UI-associated comorbidities/complications), indirect (lost wages by patients and caregivers and lost working hours) and intangible costs (emotional distress and decreased quality of life)[5]. Unfortunately, most of the above are very difficult to be precisely calculated. Therefore, we included direct costs for physician visits, routine care items and drug treatment.

Results

According to the findings of our study, the prevalence of UI in the Greek female population between 20 and 80 years old was estimated at 27% (531 out of 2,000 women). The most common type of female UI was urodynamic SUI as it was reported from 44% of incontinent women. UI was reported in 11% of cases, while symptoms suggestive for mixed UI were described by 41% of women with UI. Finally, 4% of incontinent females had other subtypes of UI.

Only 17% of incontinent women had ever sought medical advice. Their first attempt to find a solution was by visiting a gynecologist (48%), urologist (38%), general practitioner (10%) or a physician of another specialty (7%). At the time of the study patients were under care of the abovementioned medical specialties in 21%, 19%, 3% and 3% of cases, respectively. 53% of incontinent Greek females had not visited any doctor at the time of the study.

Patients who were under medical follow-up reported that they visit their doctor almost twice annually, with a mean financial cost of €54.2 per visit, which ranged between €40 and €90. These women were usually over 40 years old and suffering from severe UI for over a decade. Most incontinent females (66%) did not follow any kind of therapy for their problem, while 37% of women with UI used anti-incontinence pads and only 4% had taken anti-UI drugs or had undergone surgical treatment.

The mean cost of conservative management of UI with pads was estimated at €9.48 for each woman (with a range from €3.25 to €46) per month. Women under anti-UI drug therapy (2% of incontinent females) had been under treatment for a mean time interval of 6.2 years (with a range from1 month to 22 years) with a cost of €20.6 (€2-€60) per month. Only 2% of incontinent participants had undergone/would undergo surgical treatment. The total cost for patients and National Health System for the management of UI in Greece was estimated at €128,916,086.64 annually.

Discussion

The prevalence of UI in Greek women is similar to that of other states in Europe[12,13]. However, the costs for the management of UI vary between countries. Table 2 contains various financial data from several studies regarding the above costs.

Our study comes in agreement with the published literature as far as the hesitancy of incontinent women to address a specialized physician for their symptoms is concerned[18,19]. Effective surgical and/or pharmaceutical treatment of UI and its complications can decrease direct costs not only for individuals, but also for public health services[5,8–10].

Unfortunately, it is impossible to exact safe conclusions comparing financial data from epidemiologically heterogeneous populations. Moreover, most studies regarding the economic burden of UI analyze different parameters (i.e. total annual social costs for OAB or direct health care costs for SUI per patients annually) and use different monetary units (e.g. 2007 ₩ and 1995 $). However, taking into considerations our results and the above table, we could draw some conclusions. Firstly, it seems that direct health care costs for treatment of SUI is similar between Sweden and the United Kingdom[14,17]. Secondly, the total social cost for OAB and SUI in the USA is more than the same cost only for OAB in South Korea[4,16,15]. Furthermore, the annual expenses for drug treatment of UUI is about the same between women in Greece and the States [€247 (2009 €-Greece) *vs* $2,796 (2009 $)][2,11]. Finally, the total cost of management for all UI subtypes in Greece is quite high (€128,916,086.64 in 2009 €-Greece), especially when considering that the same cost for a much larger country almost a decade ago was $1.3 billion in 1995 $2,9.

Conclusions

Urinary incontinence is a common condition among the Greek female population which leads to a remarkable financial monthly charge not only the patients, but the National Health System as well. A strong effort of all health professionals to give responsible information and solutions in cooperation with specialized Urogynecology Clinics is required.

Conflict of interest

The author declares no conflict of interest.

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