



Review

Brain drain: The Greek phenomenon

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The object of this paper is to outline the extent and to interpret the significance of the phenomenon, where medical personnel escape abroad in order to seek work or better working conditions, known as brain drain. The induced understaffing of National Health System (NHS) and the imminent deterioration of health services, undermine the functioning of NHS and, consequently, affects negatively the citizens' health level. After reviewing the relevant literature, theories of motivation, which can be implemented in order to prevent further escape of valuable medical personnel are presented. More specifically, theories of human needs (Maslow, Herzberg and McClelland) and other inciting theories are supposed and proposed as means to face the brain drain phenomenon. Based on all these theories and valid empirical research, implementation of an overall realistic framework of economic, social, administrative and other incentives is proposed, in order to persuade medical personnel stay in the country, striving for the good functioning of NHS but also for the progress and prosperity of Greek society.

Key words: Brain drain, Greece, financial crisis, National Health System.

INTRODUCTION

General

The term *brain drain* refers to large-scale "leakage" abroad of scientific and specialized resources, such as doctors, engineers, economists and other professional categories, in pursuit of better socio-economic and working conditions (Latif, 2003). From literatural point of view, *brain drain* refers to "talent export" and "intelligence export" (Beine, Docquier and Rapoport, 2008) (Lianos, Asteriou and Agiomirgianakis, 2004) (Okeke, 2013). Primarily, the phenomenon of scientific staff immigration concerned the leakage of highly educated people only from developing to developed countries (Mullan, 2006). However, globalization in combination with economic recession, high unemployment rate and low living standards even in most developed countries, contributed to the "dissemination" of

the phenomenon, also in these countries (Ifanti et al., 2014).

Particularly, in the case of Greece, the worldwide socio-financial crisis that affected, also, Greece since 2009 and led to taking of austerity measures, had an adverse impact on the development of various sectors. Based on Economic Cooperation and Development (OECD) data, the unemployment rate for ages 25-64, from 9.6% in 2009, 12.8% in 2010, 17.9% in 2011 and 24.5% in 2012, reached 27.5% in 2013 and 26.2% in the third quarter of 2014 (OECD, 2014). The budget deficit increase, extent of corruption, the lack of political stability, the decline in living standards and a variety of other adverse effects, synergistically, led a total of about 35,000 Greeks to search

for work abroad only in the year 2011, while 22,000 of them were younger than 30 years old (Malkoutzis, 2011).

The Greek doctors immigration phenomenon towards abroad

The professional group, which especially lost young, ambitious, talented and human resources, is the health professional group, mainly doctors. The medical inflation (6.1 physicians/1,000 people), the lack of research, education and training funds, as well as, the unfavorable working conditions in the degraded and poorly organized national health system, the employment weakness in a supersaturated private sector, which suffers from the decreased purchasing capacity of the population and the proportionately very low wages of doctors, led to a significant number of doctors in search of work in Germany, France, Great Britain, Sweden, the United Arab Emirates and Australia.

Unfortunately, there aren't any official data to reflect the exact extent of the phenomenon, as they are not recorded by the Hellenic Medical Association (and local Medical Associations) and the correspondent Health Departments. Based, however, to the number of licenses issued for work abroad, it is estimated by Athens Medical Association only, that between 2009-2013, more than 6,000 doctors migrated abroad, while for the first half of 2014, those were more than 830 (Stavroula, 2014). In the case of Thessaloniki Medical Association, it is estimated that for the period 2009-2014, the number of doctors that fled abroad, exceeded 1500 (personal telephone contact). And if this information is considered doubtful and unreliable, as unpublished and orally communicated, it is very interesting and compatible that a formal survey of medical students recorded that 86% of respondents consider immigration as a promising alternative and intend to continue their medical career abroad (Labiris et al., 2014).

Brain drain effects

The leak of young and very promising doctors from the country deprives Greece and the society in general, of a very dynamic segment of human capital, where hopes for change, improvement of society and development are deferred (Martineau et al., 2004). Furthermore, leakage of medical personnel abroad constitutes loss of national resources, given that the country has invested a lot in education and training of young scientists, who migrate to practice their profession in another country-host without the latter have incurred the cost of their education (Ifanti et al., 2014). In addition, above all, this migration of doctors abroad has numerous and varied implications to the National Health System's (NHS) function, too.

Escape of medical personnel abroad leads to the understaffing of the NHS, given that many physicians, mainly the most qualified, resign from positions held in the

public sector, in order to seek more dignified working conditions and better remuneration. It is estimated that approximately 6,500 positions of physicians in the NHS were evacuated because of doctors' elude abroad (Ifanti et al., 2014). This fact, combined with the constant changes in pension system that encouraged early retirement, as well as the austerity measures that, inter alia, imposed suspension of recruitment in the public sector, were enough to cause operational problems in NHS. All these caused understaffing led to amalgamation and abolition of various clinical departments of NHS. Typical example is the case of Trikala Hospital, where the pediatrics' department was abolished, due to lack of medical stuff, forcing patients to seek pediatric coverage almost 50 kilometres away, at the pediatric clinic of the hospital Karditsa, which is already understaffed (Bouloutza, 2015). The insufficient number of medical personnel, clearly, undermines the quality of health services. In other words, the maximization of patients' satisfaction and the maximum desired result for them (including effectiveness and cost of services) are not feasible (Dikaïos, 1999). The remaining physicians engage in a daily fight to cover the population's basic needs, while the steadily deteriorating working conditions act as a disincentive to their productivity. Physicians are often forced to work more than 90 hours a week contrary to the European Union Directive and despite a recommendation for compliance prepared by the Court of Justice of the European Union (CJEU). Not to mention, that the situation described above justifies the increasingly occurring event of burn-out syndrome and, therefore, hampers meeting the patients' requirements for health.

Reviewing the recent literature, it turns out that the drain of medical personnel is characterized by significant "loss" up to "bleeding" for the NHS (Mullan, 2006). Studies that examined the impact of the phenomenon, as in the case of Central and South America, the Middle East and North Africa, India and sub-Saharan Africa, from where a large number of new doctors migrate in order to search employment, also indicated that the economic losses are often incalculable, as they include human capital and numerous indirect costs (education investment) (Miyagiwa, 1991).

Motivation theories as a mean to face brain drain phenomenon

The assessment of the adverse effects of doctors' migration abroad, alerts "*the workers' skills activation process to achieve the organization's objectives*", as immediate and urgent (Dunham and Pierce, 1989). Motivation of doctors to stay in the country supporting both the smooth operation of the NHS and the evolution of society, progress and prosperity seems to be urgent. Based on authoritative research papers (evidence-based), theories of human needs and other theories of motivation can effectively help (Dikaïos, 1999).

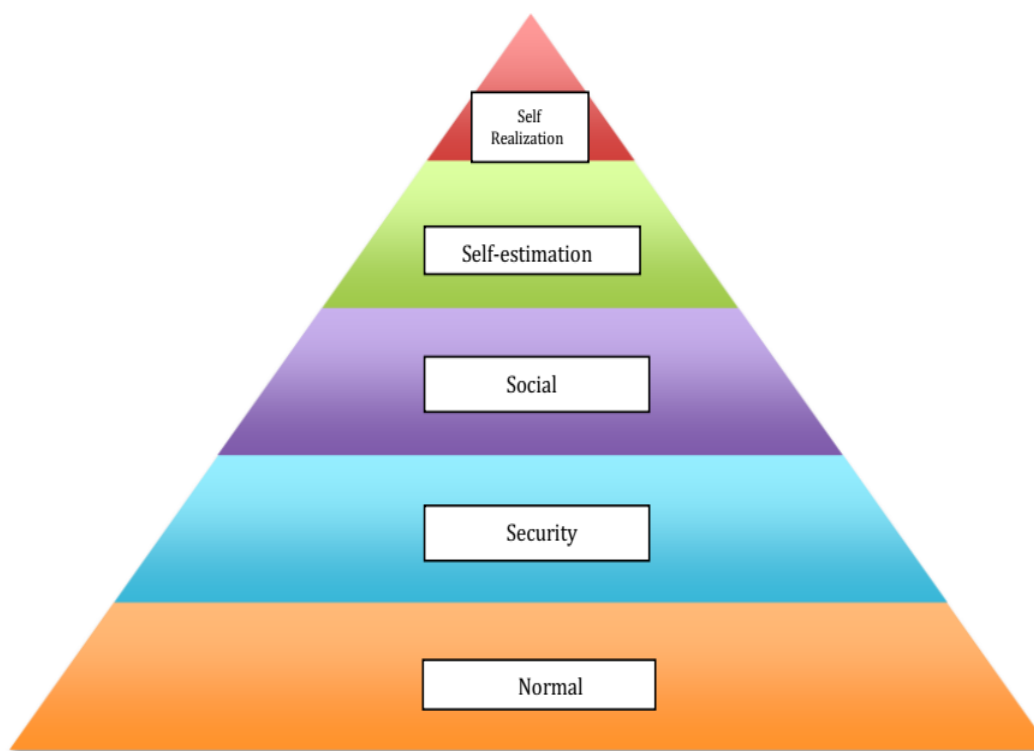


Figure 1: Maslow's theory of needs

The theory of Maslow's hierarchy of needs is a very useful model in understanding and ultimately in preventing the phenomenon of doctors escape abroad, as it addresses the physical and emotional needs of the individuals. According to Maslow (Maslow, 1989) there are five categories of human needs hierarchied as: 1) Normal 2) Security, 3) Social, 4) Self Assessment and 5) Self-realization needs (Figure 1). The general concept of this hierarchy is that if man can satisfy its physiological needs (food, housing, clothing, etc.), then he may look for ways to satisfy the need for a sense of security (protection from physical and mental risks and diseases, work, employment insurance, etc.). Having covered this feeling, he can search for meeting his social needs (friendship, love, social recognition and acceptance, teamwork, social interaction, etc.). Subsequently, the individual can fulfill the need of self consideration, namely the desire to feel useful and valuable for the environment and the society in general. Finally, the human need for self-realization of the individual can be achieved, through which one may activate his faculties and abilities in order to fulfill his ambitions and dreams. Key point of this theory is that these needs can stimulate the individual, only if the specific hierarchy is observed (Maslow, 1989).

Another significant theory of motivation that can convince the medical personnel stay in the country is also considered to be the Herzberg theory of two factors (Herzberg, 1989). As a result of a research study, Herzberg

theory concluded that stimulation of the staff consists of incentives (motivators, motivation factors), which are related to the purpose and nature of the work and disincentives (hygiene/maintenance factors), which are related, mainly, to the working environment of the individual. Incentives motivate in a positive way, impacting the extent of individual satisfaction, while disincentives do not incite workers, but simply operate in a neutral way, without displeasing the person (Herzberg, 1966).

Another motivation theory of great importance for stimulation and prevention of medical migration is considered to be the McClelland theory (Herzberg, 1966) of acquired needs, which are defined as: achieving goals, establish links and authority. According to this theory, everyone wants to satisfy in total all these acquired needs, to the extent that every need motivates him individually (McClelland and Liberman, 1949).

In addition to the theories of human needs, the expectations' theory of Vroom (Vroom, 1964) has also been proved to be useful, whereby the stimulation is mixing of two key factors: preference/desire for a certain result and expectation that a certain behavior will lead to the desired result. Essentially, between two alternatives, the employee selects the one that believes that will lead him to more desirable and feasible result (Dikaios, 1999).

Finally, in this direction, the parity theory of Adams (Adams and Freedman, 1976) could, also, be proven of great importance, as the employer compares the effort and

offer produced with the results bright about by this effort. The employer's attitude, in this case the doctor's stance, depends on whether he feels wronged or not. If he considers himself wronged and remains dissatisfied, he reduces his offer so that it becomes proportional to the effect. Otherwise, the person tries more, demanding a better result that can be translated into financial rewards, more days off and many other benefits (Tsounis, Sarafis and Bamidis, 2014).

Incentives for brain drain prevention

According to motivation theories and numerous research studies, incentives must be reclaimed, at all costs, in order to reinforce either the return or the abidance of medical personnel in Greece, in order to prevent the malfunction of the NHS and, of course, achieve progress and development.

The increase in doctors' salary and general financial incentives, like call compensations, clinical subsidy from the central government, can strongly help in this direction. The fees should be rationalized in order to assist in dampening, at least, economically, the years (more than ten) that physicians have dedicated for their education and be able to meet their basic and acquired needs. In other words, the financial rewards of physicians should offer security, stability and ensure them an adequate living standard, without forcing them to seek illegal payments or degrade the quality of health services offered (Paleologou et al., 2006). The grievance "*for what I am paid, I offer a lot*" must be terminated, and this can be achieved only if the state realizes and recognizes the value of medicine. General reform of public wages should be attempted so that a rudimentary sense of justice is perceived. For example, the fact that, till recently, particular category of compulsory education officials in the Ministry of Finance were paid twice more than an NHS physician, was at least provocative, if not unfair. In the configuration of physician's remuneration, there should be taken into account that the doctor is obliged to be trained, well-educated and update their knowledge in a legitimate and morally acceptable way (Labiris et al., 2014).

Moreover, general reformation of NHS structure and operation and cleaning up of doctors' working environment should be attempted. This, of course, presupposes a clear goal setting (for example surgical time setting and rewarding with more operating theaters) and redefining responsibilities of all employee categories, fair and holistic treatment of the staff, evaluation on the basis of qualifications and years of experience, evaluation upon merits (publications, participation in research projects etc) and offered work (Tzeng, 2002). In this way, a more healthy and fair working environment can be formed, as everyone's duties and responsibilities are clearly stated and every employee may experience a sense of joy and satisfaction from work. Moreover, it is feasible to identify and promote those who actually excel at work and have especially

promising career prospects.

Synergistic and interacting with the above incentives, social motivation factors can also work to help physicians stay in Greece. Since responsibilities are clearly defined and meritocracy is observed, the working environment and climate could be permissible, if not friendly and supportive, to promoting cooperation between colleagues / clinics and hospitals so that physicians may interact to achieve the best possible result for the patient's health. Furthermore, Kontodimopoulos et al. (2009) demonstrated that healthy working relationships between physicians (registrar, consultants, directors) worked as major incentives and satisfaction factor (Kontodimopoulos, Paleologou and Niakas, 2009).

Finally, particular importance should be attributed to political stability in the country. The successive changes of governments, policies and reforms that ruling faction wastefully and regularly tries and promotes, only serve to weaken the health system and discourage physicians and general health professionals who work in it, while at the same time burden the health status of taxpayers. Therefore, the adoption of a specific and comprehensive policy, program and perspective is necessary more than ever, before.

Conclusions

The phenomenon of valuable scientific-medical personnel escape abroad is a real problem, not only in developing countries, but also in Greece. In contrast to the previous immigration wave of Greeks, the majority of whom were unskilled, since 2009, large numbers of young and experienced doctors are fleeing to seek work in various countries of Europe, Australia and Asia, evacuating the NHS. This results in a threatening understaffing of NHS, while it also leads to a great undermining of the health services quality.

In order to prevent further expansion of the phenomenon of medical staff escape to abroad, it is feasible to apply theories of motivation, which are considered as integrated approaches, as a result of human behavior observation and research studies. The Maslow's theory of hierarchized needs, the two factors theory of Herzberg, the McClelland theory of acquired needs coverage -known as human needs' theories are necessary; Vroom's theory of expectations and, finally, the Adams theory of equality are only some of the motivation theories that may be applied aiming at the interception of medical personnel migration.

Incentives should be offered at all costs, so that the medical staff stays in the country in order to support the NHS function, help achieve drastic changes, evolution and the development of the society. According to the literature, economic and social incentives, as well as, political and social stability achievements are of major importance, which in combination with a realistic attempt of the NHS and the public administration to reorganize could create a

safe and ideal working environment and accommodation for all medical staff.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this manuscript.

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