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### Case-management for nursing care of patient with stroke: a cross-cultural critical reflective analysis

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## Η ΔΙΑΧΕΙΡΙΣΗ ΠΕΡΙΠΤΩΣΗΣ ΓΙΑ ΤΗ ΝΟΣΗΛΕΥΤΙΚΗ ΦΡΟΝΤΙΔΑ ΤΟΥ ΑΣΘΕΝΗ ΜΕ ΑΓΓΕΙΑΚΟ ΕΓΚΕΦΑΛΙΚΟ ΕΠΕΙΣΟΔΙΟ: ΜΙΑ ΔΙΑΠΟΛΙΤΙΣΜΙΚΗ ΚΡΙΤΙΚΗ ΑΝΤΑΝΑΚΛΑΣΤΙΚΗ ΑΝΑΛΥΣΗ

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### Περίληψη

**Εισαγωγή:** Το Αγγειακό Εγκεφαλικό Επεισόδιο (ΑΕΕ) παραμένει μια μεγάλη οικονομική επιβάρυνση για τα συστήματα υγείας σε όλο τον κόσμο. Ωστόσο, οι μεταρρυθμίσεις της υγειονομικής περίθαλψης χρήζουν εξελιγμένων συστημάτων διαχείρισης με σκοπό την παροχή υψηλής ποιότητας φροντίδας, επί ίσοις όροις, για το σύνολο του πληθυσμού, μέσα στο πλαίσιο ενός θετικού περιβάλλοντος κόστους-οφέλους.

**Σκοπός:** Ο κύριος στόχος αυτού του άρθρου-συζήτησης είναι να προσδιορίσει και να αναδείξει μέσω διαπολιτισμικού προβληματισμού, τα πλεονεκτήματα της Διαχείρισης-Περίπτωσης(ΔΠ) για τη σύγχρονη φροντίδα του ασθενή με ΑΕΕ.

**Μέθοδος:** Για τις ανάγκες αυτού του άρθρου χρησιμοποιήθηκε η μέθοδος της κρίσιμης στοχαστικής ανάλυσης σύμφωνα με την οποία οι αναγνώστες εισάγονται προοδευτικά στις δεξιότητες της κριτικής και αναστοχαστικής σκέψης. Αυτό μπορεί στη συνέχεια να εφαρμοστεί σε ένα κλινικό πλαίσιο το οποίο μπορεί να βοηθήσει τους νοσηλευτές να κατανοήσουν τον επαγγελματικό τους ρόλο μέσα στο πολύπλοκο περιβάλλον της σύγχρονης παροχής υγειονομικής περίθαλψης.

**Συζήτηση:** Μια επισκόπηση για τις διαφορές της φροντίδας των ασθενών με ΑΕΕ στην Ελλάδα και τις ΗΠΑ παρέχεται μέσα από τα ακόλουθα κρίσιμα αναλυτικά στοιχεία: Η τρέχουσα Κατάσταση, Αξιολόγηση Εμπειρίας, Προσωπικές Αντανάκλαστικές Σκέψεις και Ευκαιρίες για Αλλαγή.

**Συμπεράσματα:** Η ΔΠ ενώ παράλληλα θα διασφαλίζει λειτουργική και οικονομική επάρκεια όπως αυτό απαιτείται. Δεδομένου ότι αυτές οι υπηρεσίες δεν είναι διαθέσιμες στο ελληνικό ΕΣΥ και παρά τις δυσμενείς οικονομικές συνθήκες, θα πρέπει να στις ΗΠΑ, έχει ως στόχο να ανταποκριθεί στις επείγουσες προκλήσεις της φροντίδας ασθενών με ΑΕΕ. Ο Διαχειριστής-Περίπτωσης είναι ο επαγγελματίας της ομάδας υγείας, ο ρόλος του οποίου είναι να χρησιμεύσει ως 'συνήγορος' του ασθενή ώστε να συντονίζει τις υπηρεσίες φροντίδας καταβληθούν προσπάθειες για την καθιέρωση μιας πολιτισμικά προσαρμοσμένης πρωτοβουλίας για σχεδιασμό ΔΠ για την φροντίδα του ασθενή με ΑΕΕ.

**Λέξεις κλειδιά:** Διαχείριση περίπτωσης, αγγειακό εγκεφαλικό επεισόδιο, νοσηλευτική.

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## CASE-MANAGEMENT FOR NURSING CARE OF PATIENT WITH STROKE: A CROSS-CULTURAL CRITICAL REFLECTIVE ANALYSIS

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### Abstract

**Introduction:** Stroke remains a heavy financial burden on health care systems around the world. Yet, health care reforms have called for sophisticated management systems in order to provide high-quality care on equal terms for the entire population within a cost-conscious environment.

**Aim:** The main aim of this discussion paper is to define and reflect cross-culturally on the merits of the Case-Management (CM) approach for contemporary stroke care delivery.

**Methods:** Critical reflective analysis was used for this paper's needs, whereby readers are gradually introduced to skills of critical and reflective thinking. This can then be applied into a clinical context which may assist nurses to achieve a better understanding of their professional role within the complexities of contemporary health care delivery.

**Discussion:** An overview for stroke care differences between Greece and USA is provided using the following critical analysis components: Situation, Experience evaluated, Personal Reflections and Opportunities for Change.

**Conclusions:** CM in the USA aims to meet the urgent challenges of stroke care. CMs are health care professionals whose role is to serve as client advocates and to coordinate services whilst assuring financial and gate keeping functions as required. As these services are currently unavailable in Greece, despite adverse financial circumstances, efforts should be made to introduce a culturally adopted CM initiative for stroke care.

**Key words:** Case-management, stroke, nursing.

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## INTRODUCTION

Contemporary sophisticated stroke care is delivered mainly in the western world. Yet, changing social needs of the last century marked a shift from a humanistic management to the modern scientific school of systems theory and from a closed pyramid system to an open interactive system of care delivery. Furthermore, the previous rigid role of supervision has changed to networking through peer consultation. Tasks are now less goal oriented but standard-driven with predefined collaborative pathways which have been introduced in routine clinical practice.<sup>1</sup>

Thus, patient care is measured daily against the path's guideline, and variance is controlled, while all health professionals contribute to the development, use and monitoring of patient outcomes. The whole effort is cost-conscious and assures improved quality. Thus, the goal for every 'successful' manager is to minimise costs whilst maintaining high quality.<sup>2</sup>

In this context, rising medical costs and modern management theories gave birth to a new approach when dealing with stroke: Case-Management (CM). It is therefore recognized that fast evolving health care reforms and escalating health care costs have caused general concern regarding health care provision for stroke patients.

The CM scheme is a care delivery model whose underlying theoretical framework is a 'value for money and quality' concept. Its aims are clear: the provision of high quality and cost-effective care via appropriate utilisation of resources and collaboration of all health care professionals.<sup>3</sup> By late 1980s CM was adopted by the health care industry in the New England Medical Centre, Boston USA.<sup>4</sup>

Case managers, are usually hired by insurance companies and are primarily registered nurses who are tasked to coordinate care between all members of the healthcare team; pharmacists, dietitians, staff nurses, physicians and social workers. The CM's role is also to:

- enhance communication between the healthcare team
- facilitate problem solving together with the patient on treatment options and discharge planning
- ensure that top quality care is achieved
- minimise delays in service,
- check that the patient has received and understood all essential education about his/her health related requirements.<sup>5,6</sup>

Essentially, the CM acts as a link between the patient and the health care provider (insurance) relaying pertinent clinical information to ensure that each patient receives appropriate care, within an appropriate time and setting accordingly. On a more technical and pragmatic note, the CM works with insurance providers to ensure that patients get entitled insurance coverage under Medicare, Medical Assistance, veterans insurance and private insurance, such as Blue Cross and Aetna obtaining approvals while the patient is still hospitalised and or in preparation for discharge.<sup>7</sup>

In this context, a number of goals for more efficient care of stroke victims under the CM model have been set, using advanced, integrated care plans and critical pathways.<sup>8</sup> Results have been impressive as they account for a 29% drop in the average length of stay and a 47% drop in the average number of intensive care unit days. According to the authors,

the whole effort succeeded in being cost-effective but it remained quality assured.

Crawley<sup>9</sup> reports that a CM practice model adopted for ischemic stroke patients in a major US teaching hospital, resulted in improved clinical outcomes within the following: improved functional ability, increased appointment compliance, shorter length of stay and cost reductions.

Overall, stroke management, with regards to hospital stay, includes sophisticated stroke centres, specialised units, stroke teams, the application of stroke rehabilitation unit principles to general medical wards, and conventional care in medical and geriatric wards. To date however, a 'best' management approach has not been substantiated although enormous progress has been made in specialist clinics found in countries such as Canada, USA, UK, Australia and elsewhere, where stroke care is set to high standards.<sup>10,11</sup>

### Aim

This discussion paper defines and cross-culturally reflects on the merits of the CM approach for contemporary stroke care delivery. Also, it attempts to address critically the strengths and weaknesses of stroke care in Greece and USA. Final purpose is to suggest possible ways of enabling more efficacious health care deliveries in the face of extreme financial health care restrictions such as the ones faced currently in Greece.

### Methods

Critical reflective analysis was used for this paper's needs, as presented by Price and Harrington,<sup>12</sup> whereby readers of specific texts are gradually

introduced to skills of critical and reflective thinking. This can then be applied into a clinical context which may assist clinicians to achieve a better understanding of their professional role within the complexities of contemporary health care delivery. This process can be 'dissected' in the following five critical components, namely:

- Situation
- Experience evaluated
- Personal Reflections
- Opportunities for Change
- Conclusions

### The situation: *stroke care-from past to present*

In any given acute stroke care setting, nurses, doctors and other staff work together to speed patient recovery. However, in sophisticated settings, the healthcare team may be coordinated by a case manager, who 'works behind the scenes' to make sure everything goes according to plan. The CM usually meets the patient and his/her family shortly after admission and is available to them throughout hospitalization. A stroke patient during the acute phase will be receiving many different services, such as tests, evaluations and treatments. The CM coordinates care delivery to maximize health gains and comfort levels. As importantly, the CM ensures that all the health care team is kept adequately informed.<sup>13</sup>

Practically, the CM will also explain options and help the patient understand the 'mechanics' and logistics of the healthcare system, including the limitations and opportunities concerning insurance coverage. Similarly, the CM's role reaches beyond that of the health care team including the arranging of spiritual

support, giving family members reassurance and engaging them in decision making concerning post hospitalisation care. Advance directives also include organising living wills and power of attorney for health care.<sup>14</sup>

Yet, overall, the CM coordinates health insurance benefits and obtains approvals while the patient is hospitalized and in preparation for discharge. Although the physician decides discharge time, the CM makes appropriate recommendations for patient care within the medical orders provided by the physician and services provided by insurance. On discharge, the CM can arrange for medical equipment, nursing and other healthcare services in the patient's home. Also he/she can organize transfer to a rehabilitation center, skilled nursing center or assisted living facility.

Overall, the CM can deal with the patient's financial and insurance questions. For example, although insurance may cover healthcare services at home, typically these are provided for an hour or two, one or more days a week. These might include nursing, physical, occupational and speech therapy, home health aide service or medical social work. In most cases, insurance policies offering home care coverage require that the patient is homebound post-stroke.<sup>15</sup>

Yet, on a practical level, a CM can facilitate obtaining the necessary medical equipment, such as a home infusion, wheelchair, walker, hospital bed or an oxygen supply. Also, a CM can act as a liaison with local community or volunteer services for which the stroke patient may qualify including "Meals-on-Wheels", homemaker services and financial assistance. The CM therefore informs the patient

and family of all available relevant services and makes connections to receive them.

Historically, during the '70s, much less could be offered to stroke survivors in the way of medical treatment and nursing care during the acute phase of the illness.<sup>16</sup> Around that time, just over half of all stroke incidents (50-70%) in an average district in England, were treated in hospital, with the rest being treated in community settings or at home as there were doubts about the effectiveness of treating stroke in hospital.<sup>17</sup> In addition, it had been suggested that worsening of health was the single most likely precipitating factor for institutionalisation of the elderly which had been associated with gender, marital status, advanced age, and poor activities of daily living.<sup>18</sup>

These trends started to change in the early '80s when the first dedicated wards for stroke, also called stroke units, were set up. These stemmed mainly in the Scandinavian countries, following soon in many other countries notably in Europe and the Western world.<sup>19</sup> Yet again, early concern was raised with regard to the stroke patient's low engagement in physiotherapy, occupational therapy and the lack of strong multidisciplinary approaches to stroke care in British hospitals. These issues were tackled and strongly recommended at the time by the King's Fund Forum<sup>20</sup> in 1988 where it was stated explicitly that communication between professionals, patients, and carers should be improved. Since then, the evolution of stroke units and their proved efficacy have changed prognosis and treatment options remarkably in specialist 'pockets' of the world.<sup>21</sup>

In this context, Hamrin and Lindmark<sup>22</sup> compared the effects of a systematised care procedure for stroke victims, using guidelines together with written care plans, versus conventional care. Although the results did not suggest any significant difference in functional improvements for the two groups, there was a marked decrease in bed days for the non-conventional treatment group. Furthermore, it was also observed that patients with advanced disability, who were treated in the non-conventional way, were psychologically benefited by the amount of attention paid to them due to the systematic structure of their care.

Yet, criticisms in a systematic review by Kwan and Sandercock<sup>3</sup> suggest that there is no substantial evidence that stroke care pathways provide significant additional benefit over standard medical care in terms of major clinical outcomes such as death or discharge destination. The authors also claim that although there is some evidence that the use of care pathways may result in fewer urinary tract infections and readmissions, and more comprehensive use of computed tomography brain scans, more detailed research in this area is needed. With regards to the team's integrity, there are weekly case conferences held under the physician's guidance, with the occasional participation of the dietitian and the social worker.<sup>23</sup> The speech therapist is in close contact with the dietitian, while the occupational therapist works more closely with the social worker. In terms of record keeping, computerised medical records are now becoming more popular. The rest of the team members, except for the nurse, contribute towards progress reports in the medical notes. However, it was proposed that a

general record where all members of the team could contribute equally and have easy access would improve record keeping and help to avoid duplication. Furthermore, apart from the standard case conferences where all members of the team participate, there are weekly meetings where only the speech-therapist, occupational-therapist, physiotherapist and the orthoptist take part in.<sup>24,25</sup>

Research by McAlister et al.<sup>26</sup> showed that case management by nonphysician providers is associated with improved global vascular risk in patients with recent stroke/TIA. Moreover, marked reductions during the trial period continued afterwards.

According to Cramm and Nieboer<sup>27</sup>, communication among the team members seems to pose a number of questions. For a start there is a marked top-down communication pattern. Since the boundaries of practice of each team-member are not clear ('swallow' assessment can be made by doctor, nurse or speech-therapist) there is a risk of misunderstanding and possibly conflict. Finally it must be stressed that care planning lacks collaboration as each team-member develops different though similar care plans.

In contemporary Greece and especially during the past few years of heavy austerity, stroke services (except for isolated pockets of excellence in Athens and Thessaloniki) have demonstrated an inability to follow developments now well established in western world health care systems. This is to some degree due to inappropriate central policies such as:

- an age-limit of <65 years for admission to specialised stroke care

- a hospital admission rota system unique to Greece whereby hospitals are on a 24 hour on-call admissions service only every 3-4 days.<sup>28,29</sup>

### Experience evaluated

In the summers of 2014& 2015 the author had the unique opportunity to visit and observe nursing practice in two major New York hospitals. As a Greek clinical nurse tutor also familiar with nursing practice in several major Thessaloniki hospitals this experience provided some useful insights in the similarities but especially the differences in health care delivery methods. One feature that was noticeable between the two countries was the urgency attributed to a suspect stroke patient in the USA. This included treating stroke (also known as “Brain Attack”) as highest priority by ambulance services to hospital admissions and further management of such a critical patient case. Also, unique to the USA hospitals, was the CM’s notable input from admission to beyond discharge. On the contrary, in Greece, stroke has not yet reached the urgency or policy status whereby services would respond accordingly. Instead there is a somehow still defeatist and ignorant attitudes amongst the public and therapeutic nihilism demonstrated by many health professionals.

When discussing treatment and policy differences with colleagues from both sides of the Atlantic, I was surprised to find that nurses in the USA, as well as other health care professionals, when reaching a certain level of professional sophistication, may sometimes find it difficult to envisage how stroke

policies and nursing practices can differ so drastically in various parts of the world.

Due to vast differences in the provision of health care and the underlying mission between the USA and Greece, a CM could not be easily implemented in the latter. Still, a CM could be used as a ‘tool’ to help optimize care especially under cutbacks, rationalizing resources, widening decision making and increasing accountability by minimizing health related corruption.

As there are only two major state driven insurances covering the population, the potential role of the CM in the contemporary Greek Health Care System (GHCS) should be considered with the Disease Related Groups (DRGs) taxonomy, recently introduced to the GHCS (Greek Legislation, 2011)<sup>30</sup> and generally implemented in the hospitals of Thessaloniki. DRGs were developed in the 1970s at Yale University to study resource utilisation and according to Zander<sup>31</sup> are a series of decisions trees designed to cluster groups of patients together on the basis of diagnosis, surgical procedures, complications and comorbidities, age and other variables. However, they are not in themselves descriptive of costs because they are based on a biomedical and not an economic model.

Thus, in Greece, DRGs were implemented as an interdisciplinary approach for ensuring close collaboration with nursing and other staff, including regular team meetings to plan and implement effective short term care in order to meet DRG and hospital management demands.

According to the Greek version of DRGs stroke should be treated in hospital for six days if uncomplicated, nine if serious co-morbidities exist or



17 days when life-threatening co-morbidities persist. A recent study by Theofanidis<sup>32</sup> showed that stroke patients stayed in hospital for 7.5 days, close to government recommendations.

The DRG-based reimbursement system has emphatically placed the health care industry into the competitive world of business. In this context, the challenge for nurses is to advocate for the patient by: utilising the best combination of recourses, protecting from negative incentives (for example an inappropriately early discharge). Finally all these steps need to be made with cost-consciousness in mind. Length of hospital stay depends on the average length of stay for each DRG, or combination of DRGs. The goal is early patient discharge with an appropriate length of stay.<sup>33</sup>

### Personal Reflections

Typically, stroke patients in Greece, who are directly admitted in acute stroke care settings stay for a mean of five days followed by transfer to either the Neurology or Medical ward or are discharged directly. The majority who is directly admitted to a Medical ward tend to spend more than 10 days in hospital due to concomitant conditions. At times patients may stay in hospital for weeks as there are no public rehabilitation centers to cater for their needs. However, families of patients sometimes arrange a follow up stay in one of the main modern and sophisticated private rehabilitation clinics usually located on the outskirts of major cities. These institutions tend to be quite costly despite government partial reimbursement and extended families are struggling especially under the light of continuing austerity. Hence, many patients bypass

this window of care opportunity and stay home instead.

Since the management of stroke care can be said to be on a continuum, it is difficult to decide when the acute phase ends and when the rehabilitation process starts. However, the current recommendation is that rehabilitation should start right after admission.<sup>34</sup> The multi-dimensional needs of the stroke patient require a multi-disciplinary team approach to his/her care.<sup>35</sup> The interprofessional team may include a physician, nurse, speech therapist, physiotherapist, occupational therapist, psychologist, dietitian, clinical nurse specialist for stroke care, medical social worker, and of course, a team leader. Care is organised under the leadership of one of the medical staff. Initial assessment is carried out by the specialized physician, and the patient's neurological and general condition is defined.<sup>36</sup>

Given the push to establish stroke units and specialized stroke care in many countries, it is interesting and important to identify barriers to innovative initiatives by health care professionals engaged in clinical practice in countries/areas without strong government support. Still, it is sadly evident that in the eyes of many health care professionals in Greece and abroad, acute stroke care is not perceived as rehabilitation activities as the sole aim is to 'save the patient'. That being said, there are several issues with nursing attitudes toward rehabilitation in Greece. These are similar to perspectives of nurses in other countries whereby nursing interactions with stroke patients are not perceived as 'rehabilitation' but as ordinary post-acute care.

Main observed differences between Greece and USA regarding stroke care can be summarized as follows: it seems that in Greece there is a wide-spread ‘pessimism’ towards stroke outcomes especially in the medical wards where most aged stroke patients are admitted. This is confirmed by a ‘silent’ directive whereby patients over 65 years old are not admitted to (the limited) specialized stroke care services. On the contrary in the US, stroke is seen as a condition equivalent to a heart attack, hence the term ‘brain attack’. This in turn had a profound effect on previously common fatalistic perceptions about stroke and created a notion of urgency for treatment and hospitalization. Hence in the US, the FAST (Face, Arm, Speech and Time) campaign prevails and facilitates urgent response to stroke. On the contrary, such a campaign cannot be introduced in Greece at present due to a complex hospital rota system preventing seamless access to specialized stroke care. This in combination with the silent age discrimination access policy creates unequal opportunities for stroke care.

### **Opportunities for Change**

Nevertheless, there are economical ways that are highly effectively and these could be made readily available as long as health care workers are ready to change! For example, Greece has already in place a longstanding healthcare scheme organized at neighborhood level, i.e. community rehabilitation centers for the elderly (KAPIs). These are located in most cities and towns and older citizens are familiar with them. However, their services at present tend to be more recreational rather than interventional.<sup>37</sup>

A simple policy change with the introduction of some rehabilitation services for stroke survivors coupled with some home visits by staff from the centers could have a major impact on patients’ trajectory of recovery. Also, KAPIs could serve as centers where continuing support and guidance on healthy living after stroke could be offered. Again, as there are few community nurses and social workers in the Greek public health care system, a case manager publically employed could bridge this gap and take on many of these responsibilities. Thus, his/her role would be to coordinate local and/or voluntary services for stroke victims by use of care pathways and quality assurance markers.

Furthermore, the importance of obtaining information of patient experiences in order to assess patient satisfaction has also been highlighted in Greece but not many have been conducted yet. However, efforts to improve quality care and future evaluations of the quality of stroke services should include a validated patient experience survey in addition to audit of clinical records.<sup>38</sup>

### **CONCLUSIONS**

It is evident that stroke continues to have a major impact on society and hospital resources and its high incidence and frequency of prolonged and often handicapped survival requires considerable investment in human and financial resources for care provision.

In addition, rising hospital costs coupled with an increasingly elderly population limit the financial resources of most health care systems. Therefore, simple cost-effective and easily implemented ideas to improve this perspective are needed. The

development of a sustainable long-term care continuum is also urgently required in Greece.

The case-management model as prevailing in the USA, aims to meet these challenges, as case-managers are devoted to continue their client advocacy and coordination functions whilst assuming more financial and gate keeping functions as required. Yet, in Greece, despite adverse financial circumstances, efforts should be made to introduce a culturally adopted CM initiative for stroke care.

#### ΒΙΒΛΙΟΓΡΑΦΙΑ

1. Park E, Huber D. Case management workforce in the United States. [J NursScholarsh](#) 2009;41(2):175-183.
2. Mahlera M, Zügera K, Kaspara K, Haefelia A, Jennib W, Lenigerb T, et al. A cost analysis of the first year after stroke –early triage and inpatient rehabilitation may reduce long term costs. *Swiss Med Weekly* 2008;138(31–32):459–465.
3. Kwan J, Sandercock P. In-Hospital Care Pathways for Stroke,an Updated Systematic Review. *Stroke* 2005; 36:1348-1349.
4. Zander K, Etheredge M, Bower K. (eds). *Nursing case management: blueprints for transformation*. Boston: New England Medical Centre Hospitals, 1987.
5. Schein C, Gagnon A, Chan L, Morin I, Grondines J. The association between specific nurse case management interventions and elder health. *J Am GeriatrSoc* 2005;53(4):597-602.
6. Lim W, Lambert S, Gray L. Effectiveness of case management and post-acute services in older people after hospital discharge. *Med JAust*2003;17;178(6):262-266.
7. Hickam D, Weiss J, Guise J, Buckley D, Motuapuaka M, Graham E. et al. (2013) *Outpatient Case Management for Adults With Medical Illness and Complex Care Needs. Comparative Effectiveness Review No. 99.* (Prepared by the Oregon Evidence-based Practice Center under Contract No. 290-2007-10057-I.) AHRQ Publication No.13-EHC031-EF. Rockville.
8. Mayo N, Scott S. Evaluating a complex intervention with a single outcome may not be a good idea: an example from a randomised trial of stroke case management *Age and ageing* 2011;40(6):718-724.
9. Crawley W. Case management: improving outcomes of care for ischemic stroke patients. *MedsurgNurs* 1996;5(4):239-244.
10. Kwan J, Hand P, Dennis M, Sandercock P. Effects of introducing an integrated care pathway in an acute stroke unit. *Age Ageing* 2004;33(4):362-367.
11. Teasell R, Foley N, Salter K, Jutai J. A blueprint for transforming stroke rehabilitation care in Canada: the case for change. *Archives of Physical of Medical Rehabilitation* 2008;89(3):575-588.
12. Price B, Harrington A. *Critical Thinking and Writing for Nursing Students*, London, Learning Matters,2013.
13. Chen F. (2008) A fine line to walk: case managers' perspectives on sharing information with families. *Qual Health Res* 2008;18(11):1556-1565.

14. Cohen E, Cesta T. Nursing Case Management: From Essentials to Advanced Practice Applications. Elsevier-Mosby, New York, 2005.
15. Flarey D, Blancett S. Handbook of Nursing Case Management: Health Care Delivery in a World of Managed Care. ASPEN Publications, Meryland, 2006.
16. McGown A, Braithwaite V. Stereotypes of emotional caregivers and their capacity to absorb information: the views of nurses, stroke carers and the general public. *Journal of Advanced Nursing* 1992;17:822-882.
17. Lindley R, Amayo E, Marshall J, Sandercock P, Dennis M, Warlow C. Hospital Services for Patients with Acute Stroke in the United Kingdom: The Stroke Association Survey of Consultant Opinion. *Age Ageing* 1995; 24(6): 525-532.
18. Bravell M, Berg S, Malmberg B, Sundström G. Sooner or later? A study of institutionalisation in late life. *Aging ClinExp Res* 2009;21(4-5):329-337.
19. Bruins S, Murray V, Boysen G, Berge E. Thrombolytic treatment for stroke in the Scandinavian countries. *ActaNeurologicaScandinavica* 2009; 120(4):270-276.
20. King's Fund Forum Consensus Statement The treatment of stroke. *British Medical Journal* 1998;297:126-128.
21. Ang Y, Chan D, Heng D, Shen Q. Patient outcomes and length of stay in a stroke unit offering both acute and rehabilitation services. *Medical; Journal of Australia* 2003; 178(7):333-336.
22. Hamrin E, Lindmark B. The effect of systematic care planning after acute stroke in general hospital medical wards. *Journal of Advanced Nursing*, 1990; 15:1146–1153.
23. Hall P. Interprofessional teamwork: professional cultures as barriers. *International Journal of Integrated Care* 2005;19(1):188-196.
24. Ireland S, MacKenzie G, Gould L, Dassinger D, Koper A, LeBlanc K. Nurse case management to improve risk reduction outcomes in a stroke prevention clinic. *Can J NeurosciNurs* 2010;32(4):7-13.
25. Sulch D, Kalra L. Integrated care pathways in stroke management. *Age and Ageing* 2000; 29:349-352.
26. McAlister F, Grover S, Padwal R, Youngson E, Fradette M, Thompson A. et al. Case management reduces global vascular risk after stroke: secondary results from the preventing recurrent vascular events and neurological worsening through intensive organized case-management randomized controlled trial. *Am Heart J* 2014; 168(6):924-930.
27. Cramm J, Nieboer A. Professionals' views on interprofessional stroke team functioning. *International Journal of Integrated Care* 2011; 11:1-8.
28. Karamanoli E. Greece's financial crisis dries up drug supply. *Lancet* 2012; 379(9813):302
29. Koutlas E, Roudolf J, Grivas G, Fitsioris X, Georgiadis G. Factors influencing the pre-and in-hospital management of acute stroke. Data from a Greek tertiary care hospital. *EurNeurol* 2004; 51:35-37.

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30. Greek Legislation, Common Ministry Decision, Π3β/Φ.ΘΕΣΜ/Γ.Π.οικ.6914 Athens, 973-13/7/2005.
31. Zander K. Nursing case management: a classic. Definition 1988; 2(2):1-3.
32. Theofanidis D. The role counseling in stroke. Nosileftiki 2005; 45(2):189-198.
33. Smith M, Fryak J, Liou J, Finch M. Rehospitallisation and survival for stroke patients in managed care and traditional Medicare plans. Medical Care 2005; 43(9):902-910.
34. Denti L, Agosti M, Franceschini M. Outcome predictors of rehabilitation for first stroke in the elderly. European Journal of Physical Rehabilitation Med 2008;44(1):3-11.
35. Baxter S, Brumfitt S. Benefits and losses: a qualitative study exploring healthcare staff perceptions of team working. Quality and Safety in Health Care 2008; 17(2):127-130.
36. Gagnon D, Nadeau S, Tam V. Ideal timing to transfer from an acute care hospital to an interdisciplinary inpatient rehabilitation program following a stroke; an exploratory study. BMC Health Service Review 2006; 23(6):151.
37. Kentikelenis A, Karanikolos M, Reeves A, McKee M, Stuckler D. Greece's health crisis: from austerity to denialism. Lancet 2014; 383: 748-753.
38. Theofanidis D, Fountouki A, Pediaditaki O. Stroke patients' satisfaction with their hospitalisation. Health Science Journal 2012; 6 (2):300-316.