From Magnet-Hospital to the Hospital of the Future

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Abstract  In the United States the Magnet Recognition Program® is an established nursing-oriented organizational model. Accredited Magnet hospitals succeeded in attract and retention of qualified nurses. This demonstrated the future potential of this model. However, a direct transfer of the model to European conditions seemed to be limited. It raised the question concerning a European model that could give hints to organize the hospital of the future. This exploratory and descriptive study attempted to create a European framework in order to make recommendations for the hospital of the future. Following recommendations were made: 1. Designation of nursing as connecting health profession, 2. In-depth structural integration of nursing into the hospital organization, 3. Lived professionalism and quality.

Keywords  Magnet Hospital, Exploratory Study, European Framework, Hospital of the Future, Croatia, Germany

1. Introduction

During essential changes in the US health care system in the eighties of the last century [1] some hospitals mastered this change despite the financial pressure through the implementation of DRGs [1]. They were successful in attracting and retaining nurses [2] despite the shifted focus from a goal-driven concept in direction of a resource-driven model [1], which affected the resource situation of the hospitals. Since then the Magnet Model became an exceptional framework to promote this change to build an agile and dynamic nursing work force [3]. These characteristics refered to the fact that the self-image and image of the US nursing staff differed significantly from those in Europe. A direct copy of the so-called concept of success was therefore limited and reasonable. On this background the Magnet model was the subject of this explorative study. Questions aroused concerning the transferability and adaptability of this Model which affected the efforts of nurse managers to create a Hospital of the future. This study tried to identify elements of this Model which were set in relationship to US and European Conditions.

To achieve this subject a Literature review and analysis of empirical studies concerning Magnet hospitals were conducted. In a further literature search the US context conditions were identified and sketched to an US framework model. The findings were interpreted with the extra-organizational US context conditions and combined to a conceptional framework. It was applied on two European countries (Croatia, Germany) to create a basis for further interpretations aiming to create a matched model. Data concerning the exemplary (extra-organizational) European health care systems were also collected via literature search according the US framework. In a next step the results were matched to form a European conceptional framework “Characteristics Hospital of the Future”. This framework was applied on the Hannover Medical School (MHH) (Germany) and the St Catherine Hospital (Croatia) as exploratory examples. In conclusion some recommendations for nurse managers were given.

2. Methods

Following methods were used in this exploratory and descriptive study: literature research and analysis of relevant literature, interpretation of the findings and creation of conceptional models.

1st Step: Literature search, analysis and clustered categories: A literature search was conducted in several data bases: PubMed-NCBI, MEDPILOT and Scopus. The search strategy in PubMed and Scopus included the use of following combinations of keywords corresponding to specific search operators: “magnet hospitals” AND USA, Nursing AND Magnet AND USA, retention AND strategies AND hospitals AND USA, “Nursing magnet” AND USA, “nursing staff retention” AND USA, “retentions strategies hospitals” AND USA, magnet hospitals AND USA, “retention nursing hospitals” AND USA, nursing staff AND retention AND USA. In MEDPILOT a parallel unspecific literature search was conducted (keywords: “Magnetkrankenhaus”, “Magnet-hospitals. Empirical studies (quantitative and qualitative studies) and
Results of the First Literature Analysis

Clustered categories were included into the analysis: 12 relevant papers were able to be used in the literature analysis. Clustered categories were interpreted on the basis of the findings.

2nd Step: Literature analysis and interpretation with clustered categories: A second literature search in PubMed, Scopus, MEDPILOT and the university library of the Hannover Medical School was conducted to describe relevant issues of the US health care system. The search strategy comprised the keywords “health care system comparison” AND United States and “health care delivery” AND United States, and “US Health Care” AND system. The results were set in relationship to the clustered categories of the first literature analysis. This step aimed to create comprised characteristics of the US system as a base for further interpretations.

3rd Step: Literature search and analysis on the base of the US conceptional framework model: To adapt the US conceptional framework a third literature search in PubMed, Scopus, MEDPILOT and local resources was conducted. The search strategy comprised the keywords “health care system comparison” AND Croatia (resp. Germany) and “health care delivery” AND Croatia (resp. Germany), and “Croatia/ German Health Care” AND system. It aimed to draw a sketched view on both European health care systems.

4th Step Creation of a matched model called “European conceptional framework”: In this step the results were matched into a conceptional framework regarding the European context.

5th Step: In this step the European conceptional framework was applied in an exploratory manner on two European hospitals (St Catherine Hospital, Hannover Medical School). The objective was to prove the applicability of the framework aspects. Lead by this framework both organizations were reviewed and set in an interpretative relationship to the frameworks’ aspects.

6th Step: In this step recommendations concerning the hospital of the future were formulated.

3. Results

a) Results of the First Literature Analysis

### Table 1. Results of the literature analysis

| Pre-categories | Characteristics | Reference |
|----------------|-----------------|-----------|
| Pre-category I – Facilitators | outcome-orientation, quality comes first, commitment of proactive leadership, structural support | [4], [5] |
| Pre-category II – Barriers | personnel discontinuity in management, financial restrictions | [4] |
| Pre-category III - Relative Autonomy | visible organizational structures, self control, qualification levels | [6], [7], [8], [9] |
| Pre-category IV - Working conditions | relative differences with non-magnet hospitals, dependence of working conditions on composition of qualification | [10], [11] |
| Pre-category V - Selective high quality of health care | selective high quality in elements of nursing, intra-professional better communication and cooperation, probably higher patient safety | [12], [13] |
| Category VI - Limitations to Magnet Characteristics | selection bias on magnet studies, fragile state of magnet hospitals, structural differences within magnet hospitals affect magnet outcomes, Organization produces outcomes | [14], [15] |
b) Results of the Second Literature Analysis

Following the literature analysis concerning the US context some categories were able to set out the extra-organizational conditions which affected hospitals: variability of the health care system, possibilities for health care providers, reform in health care systems.

Variability of the health care system [16], [17], [18]:

There was only a partial coherent public health care system, which was primarily focused on special population groups. The public influence on the design of supply and financing of health care settings differed significant between the states. There were also differences in the amount of pay depended on the financiers (e.g. Health Maintenance Organizations, Medicaid program). Employers acted partly as self-insurer of their employees. Also insurances (e.g. Health Maintenance Organizations) were a social benefit from the employers.

Possibilities for health care providers [19], [20]:

The health care providers had many ways to create their offer on the U.S. health care market. This included the connection with the gatekeeper by purchasing general practitioner practices or the provision of hospital equipment for them in the hospitals’ owned health care centers. They reduced costs by creation of new professional groups as substitutes for established professions (e.g. license Anesthesia Assistants vs. Anesthesia Nurses). In individual segments there was a high attractiveness for students in established professional groups.

Reform in health care system [20], [21]:

The shortcomings of the system were modified by the reforms in context of "Obama Care." This included the elimination of maladministration that a large number of the US-citizens have no health insurance coverage. By the reforms supply gaps should be filled, spending on government programs should be reduced and the quality of care should be improved. For the health care providers the reforms caused a requirement for action.

c) Creation and Interpretation of a Conceptual Framework USA

The used framework (see fig. 1) divided the conditions in conditions outside the hospital organization (= extra-organizational conditions) and within the organization (= hospital). The extra-organizational conditions were the categories identified in the second literature analysis. In this model they produced an innovative pressure, caused by the variability of the health system. This VARIABILITY initiated an increased need for reform(s) in order to cancel problems caused by this VARIABILITY. The variability was related to the allocation of monetary resources to the hospitals. Especially against the background of different accounting systems to allocate resources the VARIABILITY triggered in this way the innovative pressure. Also POSSIBILITIES which were affected by the condition REFORM contributed the innovative pressure. POSSIBILITIES existed for hospitals, e.g. in the construction or expansion of hospital buildings or in buying facilities downtown commercial areas. In the same direction POSSIBILITIES potentially exacerbated the VARIABILITY in this model.

The organization HOSPITAL had to make a respond on this innovative pressure. A HOSPITAL could focus on the nursing profession (i.e. mono-disciplinary focus) or it could focus the entire organization (i.e. multidisciplinary focus). The results of the literature review indicated that either little difference between the magnet- and non-hospitals exist (see [3], [10]) or accredited magnet hospitals had also internal organizational differences that affected the magnet status. It could therefore assume that there are existing different manifestations of the response to the innovative pressure with respect to the chosen focus. This fact was illustrated by the reciprocal overlap of the two foci. Reciprocally because structural changes in a department affected other organizational structures. A reciprocal interface in this case related to be a mixed response to the innovative pressure.

The reflection on the basis of the clustered categories and the comparison with the Magnet Recognition Program® Model illustrated the dependence on structural (legal, policy and intra-organizational) aspects. With this viewpoint a framework model was designed as an exploratory approach. It visualized on the one side extra-organizational conditions and on the other side the intra-organizational foci. The first one comprised the terms “Variability”, “Possibilities” and “Reform”; the last one was designed according the components of the Magnet Recognition Program® Model. This exploratory framework was used in further reflections as an interpretation basis on the Croatian and German framework conditions. The results of these interpretations were part of the matching of the country-specific frameworks.

d) Results of the Matching of the Conceptual Framework USA on European Examples

Matching of extra-organizational conditions (see table 2)

The frameworks in both European countries showed a distinctive consistency. This consistency was in straight opposition to the variability of the US-Health care system. Certainly the conditions in the European Union would also lead to the impression of a great range of variability concerning each health care system of the member states, because of country specific driving forces [44]. But all systems shared similarities like the universal or near-universal coverage of health care costs e.g. for hospital care [45]. For the European matching model we could assume that the term “Consistency” visualized a very important condition which influenced the nursing service in hospitals. Seen through the lens of this framework all hospitals including the nursing profession had to face the same innovative pressure. This pressure emerged from the “trinity” “Consistency, Reform and Possibilities”.

Consistency was the key element regarding the regulation of resources on the basis of the health care insurance system. It influenced the term “reform” which included the actions to accommodate the “consistency” to the respective circumstances.
"Reform" became a common condition as a result of the analysis of the circumstances of the three exemplary countries. In opposition to the US reform which focused on the elimination of the maladministration in form of an expansion of the population coverage [46], Europe’s direction focused on cost reduction, cost containment and improvement of quality and efficiency. Hospitals in Europe dealt with a need for investments in their provision of health care services (quality + efficiency) and paradoxically to cut their costs.

Concerning the condition “Possibilities” to match the innovative pressure and focusing on European conditions Hospitals had to invest in job opportunities due to the shortage of Health professionals (especially nurses) connected with the fulfillment of high professional standards and the enhancement of clinic facilities. These actions should be done instead of the above mentioned paradoxical direction of the innovative pressure.

The dominance of the medical profession in Germany was not part of the matched model because the independence of
the medical profession as a requirement for this dominance eroded gradually [36].

Matching of intra-organizational conditions (see table 3)

Many sub segments of the intra-organizational conditions which effects nursing were related to the Magnet model concept. In the matched model “Mutual Respect” was a component of the magnetic force “Management Style” and the Model component “Transformational Leadership” which was represented by the term “Nursing centered Management”. This could be justified because mutual respect should be set as an organizational norm to provide structure and direction in patient care as also in organizational functions [47]. The Magnet model component “Structural Empowerment” was related via the magnetic force “Personnel policies and programs” with efforts for “Increasing the number of nurses”, the “Involvement in organizational changes” and the “Provision of work-home-balance”. These sub segments importance was justifiable because some studies (although some limited on the German context) gave hints: As an example the introduction of the DRG in Germany possible worsened adequate staffing and supportive management [48]. As well Management should address the work-home interface which influences leaving intentions [49]. Also the magnetic force “Professional Development” was similarly to the sub segment “Research and professional development”. In conclusion the best term to summarize this sub segments was “Nursing integrating structure” which included Personnel Policies and Programs with emphasis on increasing the Number of Nurses, competence development, research as also significant involvement in organizational changes and provision of Work-home Balance. Quality improvement as a magnetic force was interpreted as a result of the other sub segments which also characterized the European matched model. But to take emphasize into the nursing focus it should be noted as “Improvement of Quality in Nursing”. An approach could be the enhancement of working conditions which maintains the work force, able to ensure a high level of quality [49]. The Magnet model component “Exemplary Professional Practice” contained the magnetic force “Professional Models of Care” which was related to the (European) sub segment “Fulfillment of professional standards and Quality of Care”. This point had for example in Germany a great Importance corresponding to the increased valuation of the evidence based nursing principle through the jurisprudence [50]. Especially service provider should integrate professional standards in their processes to prevent liability cases [51]. Also the magnetic force “Interdisciplinary Relationships” was related to “Mutual respect”. Concerning “Mutual respect” a longstanding emotion work should be addressed to enable nurses for collaboration with other professionals [52], although of the existence of a fragmented and transient collaboration in practice [53]. In the matched model the term “Lived professional practice” denoted both sub segments in the best manner. The magnetic force “Quality of Care” respectively the Magnet model component “Empirical Quality Results” were also related with the “Fulfillment of professional standards”. This relationship was justified because “lived” professional standards ensured empirical quality results. In consequence this aspect was integrated into the segment “Lived Professional Standards”

| USA | Croatia | Germany | European Matching Model |
|-----|---------|---------|-------------------------|
| Transformational Leadership | Mutual Respect | Nursing Centered Management: Management Style with emphasis on mutual respect. |
| Structural Empowerment | Increase Number of Nurses | Increase Number of Nurses | Nursing Integrating Structure: Personnel Policies and Programs with emphasis on increasing Number of Nurses, competence development, research as also significant involvement in organizational changes and provision of Work-home Balance. |
| New Knowledge, Innovation and Improvements | Cross sectional character: Quality Improvement is part of each model component. With emphasis on Nursing it should be noted as Improvement of Quality in Nursing. | Fulfillment Professional Standards | Mutual Respect | Lived Professional Standards and Quality of Care: Professional Models of Care with emphasis on fulfillment of nursing’s own professional standards, interdisciplinary Relationships on the basis of mutual respect. |
| Exemplary Professional Practice | Fulfillment Professional Standards | | | |
| Empirical Quality Results | Fulfillment Professional Standards | | | |

Table 3. Matching of intra-organizational conditions
e) European Conceptual Framework Characteristics “Hospital of the Future”

At first this conceptional framework focused on intra-organizational aspects. This approach could be reasonable because extra-organizational conditions could not be influenced by a single hospital. Regarding this aspect the extra-organizational conditions were concluded into the keyword of “Innovative Pressure” which visualized the influence of these conditions without dominating the framework: consistency (= all hospitals have country-specific same starting positions), reform (= rationalization as target) and possibilities (= requirement for self-investment). These facts needed innovative measures to cope it and to gave the nursing profession a responsible role as a “Connecting Health Profession” including effective self-competences. That was the reason why this framework should be an integrative part of the Nursing management as also on the general hospital management level. It gave an impression concerning quality in nursing in the hospital of the future – derived from current understandings and requirements. Nursing should be part of a holistic strategy referring to the multi-professional character of hospitals. They should emphasize improved nursing quality in the context of a multi-professional institution. From our view this approach was justified referring to the “interface character” of nursing. Nursing should be considered as a “connecting health profession” because Nurses act on a field with many reciprocal interfaces (e.g. Nurses and Physicians or Nurses and Physiotherapists). The accentuation of Quality improvement in Nursing seemed to be a promising approach referring to the multi-professional character of hospitals. They should emphasize improved nursing quality in the context of a multi-professional institution. As a consequence investments in Nursing could support to meet other demands and pressures in the future.

This framework was constructed by these aspects: Nursing centered management, nursing integrating structure, lived professional standards and lived quality. Aspect 1 “Nursing Centered Management” meant a culture of mutual respect between the nursing management level and nurse professionals at the bedside. Also it meant a culture of mutual respect on the management level of the different professions which affected the cooperation between health professionals on the lower hierarchical levels [6], [7]. From our view this was a very essential issue, because it gave nurse managers a wide radius of action to establish and maintain the following aspects of the conceptual framework. Another essential reason was that institutional mutual respect support high quality patient care [54]. From our view mission statements indicated the scope and profundness of mutual respect.

Aspect 2 “Nursing Integrating Structure” meant a strong institutional emphasis on efforts for increasing personnel resources. In this direction professional competences should be developed to gain benefits from a sound and empowered staff. The provision of competences with a sound staffing made it easier to conduct organizational changes in a multi-professional expert organization [55]. As a possible result e.g. business processes could be defined from a bedside perspective. Another issue of this structure was a main focus on staff retention – the provision of work-home-balance. It reflected the coming requirements concerning the demographic change which could affect the workforce structure [56], [57], [58].

Aspect 3 “Lived Professional Standards and Quality of Care” could be defined as a commitment for fulfillment of the own professional standards and quality of care. This meant e.g. a stronger appreciation of the specific role accountability as a nurse [59]. Also a professional model could affect the patient safety more favorable than a functional model [60]. The professional model was characterized by managers who recognized nursing as a profession exercised by skilled professionals [60]. A functional model which regarded nursing as a broad resp. unspecific set of tasks [60] should be removed by nurse managers. In case of this aspect respectful interdisciplinary relationships would be essential [44]. Also this aspect focused on the operational level regarding working groups, structures and proceedings.

Table 4. Efforts in direction of the Conceptional Framework Europe – Characteristics “Hospital of the Future”

| Medical School Hannover (MHH) | St Caterine Hospital |
|--------------------------------|----------------------|
| **Nursing Centered Management:** Mission Statements (= Mutual Respect) | **Nursing Centered Management:** Mission Statement (= Mutual Respect) |
| **Nursing Integrating Structure:** Re-entry and trainee programs (= Increasing Number of Nurses) | **Nursing Integrating Structure:** Coping of Nursing Shortage (= Increasing Number of Nurses) |
| Advanced Professional Training/ Future Oriented Development Program ZEP (= Development of Nursing Competencies) Research Office (= Investment in Nursing Research) Participation in Corporate Development Programs (= Significant Involvement in Organizational Changes) Service Agreements/ Reconciliation Family/Work (= Provision of Work-Home-Balance) | Education measures in a new established institution (= Development of Nursing Competencies) Publications on nursing management research (= Investment in Nursing Research) Planning and organization of equipment and services (= Significant Involvement in Organizational Changes) |
| **Lived Professional Standards and Quality of Care:** Commitment in Mission Statements/ Quality Management System/ Working Group on Nursing Standards | **Lived Professional Standards and Quality of Care:** Commitment in Mission Statements/ Certification ISO 9001:2008/ Working Group on Nursing Standards |
f) Application of the European Conceptional Framework
Hannover Medical School (GER) Sveta Katarina (HR)

In this chapter the European conceptional framework was applied in an exploratory manner. The objective was to prove the applicability of the framework aspects. Lead by this framework both organizations were reviewed and set in an interpretative relationship to the frameworks’ aspects.

Regarding the MHH the application of the matched model led to some suggestions about the congruence of institutional efforts with the matched model: Concerning the sub-segment “Mutual respect” this sub-segment was stated as a core value of all nursing relevant mission statements. The “Nursing Integrating Structure” comprised the sub-segment “Increasing number of Nurses” which was embodied by the re-entry and trainee programs. Especially the re-entry program was an effort to increase nursing staff with a strong reference to the gender topic, because it was targeted on the empowerment of women to enhance their career chances. Concerning the next sub-segment “Development of nursing competence” the MHH applied a micro- and macro-level approach. Possibilities for advanced professional training focused on the point of care on the micro-level; the future oriented development program (ZEP) faced the macro-level to enable coming nurse managers. The sub-segment “Investment in nursing research” was embodied by the institution of a research office of the nursing department. This indicated efforts to establish and maintain applied nursing research activities. “Significant involvement in organizational changes” was represented by the participation of the nursing department in corporate development projects. Referring the sub-segment “Provision of work-home balance” the context of the MHH as a governmental institution was evident, because efforts for reconciling family and work and the service agreement were fostered by this institutional status. The sub-segment “Fulfillment of professional standards” in the segment “Lived Professional Standards and Quality of Care” and “Mutual respect” were embodied by the mission statements. It was also (focused on quality of care) embodied by the certified quality management system and the working group on nursing standards wherein nurses combined evidence based knowledge with practice requirements. This indicated that the fulfillment of professional standards in the nursing department was a key objective which was pursued by the management. All these efforts indicated a growing consciousness about the importance and responsibility of nursing in a maximum care setting. This could reflect the future requirements concerning hospitals to integrate nursing into a general management strategy.

The Croatian example showed that the establishment of a new hospital enabled the nursing profession to make significant contributions in direction of institutional structuring and development. Compared with the MHH St Catherine Hospital was a small hospital in a specific therapeutic field. But it was interesting that this “small” institution reflected many aspects of the theoretical framework like the MHH as a “bigger” institution. In the first segment “Nursing Centered Management” Mutual Respect was also addressed in the mission statement. The “Nursing Integrating Structure” comprised the sub-segments “Increasing number of nurses” and the “Development of nursing competences” as imperative conditions of a new hospital within a countrywide shortage of skilled health professionals. Noticeable were the efforts in the sub-segment “Investment in nursing research”. Similar to the MHH the St...
Catherine Hospital invested in research activities which resulted in two papers. From our view the involvement in the institutional building as part of the establishment process was strong connected with the “Significant involvement in organizational changes”. The sub-segment “Provision of Work-home-Balance” was not addressed. We found possible reasons were in the situation of a newly established hospital and in the employment law, which did reflect the shortage of skilled health professionals. The segments “Lived Professional Standards and Quality of Care” were also addressed by the St Catherine Hospital in the same manner like the MHH.

Designation of nursing as connecting health profession:
Nurses and their profession should be designated as connectors in the multidisciplinary hospital setting. The term connecting health profession implied that the focus should be placed on the interfaces between other health professions. Nurse Managers should advocate and promote mission statements which take emphasis on mutual respect as a pre-requisite to act in interface areas. This could create a climate which attract and retain nurse employees. We think that a lot of innovation impeding gaps could be filled with the engagement by these interface professionals.

In-depth structural integration of nursing into the hospital organization:
From our view in-depth structural integration was an aspect which will gain more and more importance for the nursing profession. This finding meant that in term of a nursing integrating structure and with consideration of the site-specific situation nurse managers should amplify conditions for a sound staffing situation. This could include measures which deal with the staffing shortage in the best way. In either situation some points could be the development of nursing competences (e.g. strengthening the core and interface competences) and the investment in research actions on practical issues (e.g. quality research). Significant involvement in organizational changes should be advocated by nursing managers but needed a broad institutional commitment of each hospital’s executive committee. Measures to provide a work-home balance should be installed in accordance with the hospitals’ economic situation. As a possible consequence nurses could act as active colleagues with their counterpart from other professions.

Lived Professionalism and Quality:
To foster a nurse attracting and retaining hospital structure a culture of lived professionalism and quality should be promoted by nurse managers. The third segment of the European framework (“Lived Professional Standards and Quality of Care”) addressed this issue: Standards were an embodiment of professionalism. They based on developed competences and results of research projects from an integrated nursing profession. This also included the reference on mutual respect, because it was not sufficient that nurses believed in their own professionalism alone. Nurse professionalism needed to be acknowledged by other professions (e.g. physicians). Also the fulfillment of standards indicated Quality of Care.

This exceeded the level of professional standards in direction of a general thinking about quality in the hospital. A concrete measure to promote both aspects could be the generation of experience- and research-based nursing databases. Other measures could be sharing and spreading of professional knowledge (visualized by professional standards) with other institutions.

4. Limitations
This study did not claim completeness on the topics magnetism and future requirements for hospitals. As an exploratory study it aimed to sketch and visualize possible aspects with meaning for the future which should be considered by nursing managers. Also the framework was sketched in a comprised way. The application of the framework could include some bias because the authors explored their own institutions. As a consequence further empirical research could be needed to fill this framework with evidence for refinement of its’ theoretical approach. From the authors view this framework should be a basis for further discussions concerning the hospital of the future.

5. Discussion
Both examples show that nurse managers undertook activities according the European framework for hospitals of the future. In opposition to the Magnet Recognition Program® Model as a nursing centered staff attracting and retaining approach, this concept focused on the coping of the external innovative pressure which needed a more integrated nursing profession into the hospitals’ structures. As a possible by-product the implementation of this framework could attract and retain nurses because their meaning as interface-experts resp. connectors in high-complex settings.
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