

Preface

The field of Nursing Informatics belongs to one of the fastest growing areas of medical informatics and there are several reasons for this:

1. Through increasing life expectancy and the stronger development of the social system, the area of nursing has been able to gain an overall higher status and therefore a higher degree of professionalism. This has the consequence that fast growing markets can be observed in this area.
2. A professionalization offensive in applied nursing runs parallel with this development, the offensive ultimately being thematically controlled by the nursing sciences. The described Theory-Practice-Gap is currently being attempted to be bridged, on the one hand using knowledge transfer, and standardization on the other.
3. From this there is an increased necessity for the application of Nursing Informatics whereby the operative noosing process has to be supported. On the other, both planning data and data that secure quality can be attained, which can be used for the further organizing of the nursing system in a political and structural respect.

The objective of this publication *Nursing and Clinical Informatics: Socio-Technical Approaches* consists of giving a general overview of the current state of Nursing Informatics, giving particular attention to social, socio-technical, and political basic conditions and additionally to sketch out the main focus of further research and development projects.

Here, it is especially important that the interdisciplinarity of the field of research can be clearly worked out. This means that the core areas of Nursing Informatics, technical feasibility, functionality, and recoverability, form a focal point of the work which will combine the technical components with nursing-relevant areas. On the one hand this affects the political and regulatory influences on the nursing system itself (i.e. the organization of the system and the given scope for structure), and on the other it affects the impact of nursing science, particularly there where nursing is carried out in standardised form.

An essential part of the objective is the internationality. This is because the nursing sciences do portray an internationally active scientific community through the political and legal organisation and social impacts, but the individual nursing systems feature severe deviations. This ultimately presents a particular challenge for Nursing Informatics, especially in the area of function and standardisation demands.

This book is aimed at the scientific community in the area of nursing sciences, system research, and nursing informatics as well as the practitioners and operating authorities of nursing infrastructures. It should reflect the current scientific stand in Nursing Informatics in a general context and therefore serve the scientific community with a basis for further research projects. In addition, this handbook should serve as a concrete foundation of how knowledge transfer can take place, particularly in knowledge transfer from science in practice.

The particular value of this book lies in the fact that it will be a unique international comparative work in the area of Nursing Informatics which covers not only the core areas of Nursing Informatics in a technical and functional respect, but also includes the adjacent governing scientific areas and portrays them in their proper context.

As reference will not only be made to the actual situation, or rather the current state of Nursing Informatics, but also to further research prospects and future trends, this handbook shall also concisely feature the fields of responsibility for future research and research needs in this area.

Accordingly, the represented goals the chapters of this book will be presented shortly.

The first chapter deals with how the range of information furthering the search and retrieval activities of informaticists may be broadened in a context where public health nursing and community health nursing's role underlie a new care delivery pattern.

The second chapter gives an overview of the various Nursing Assessment Instruments and describes the advantages of computer-based nursing process documentation. The evaluation of the documentation is based on quality criteria such as for example validity, practicability, and appropriateness.

Due to the new and extended roles of nurses clinical decision support systems (CDSS) gain importance. Therefore, it seems appropriate to give an overview of current research on nurses' use of CDSS and amongst others, its impact on nurse decision-making.

The book's international orientation also makes it possible (in Chapter IV) to look at the obstacles immigrants face when making use of the immigration country's healthcare as this influences the nursing information systems as well.

The fifth chapter gives a contextual overview of the diffusion, penetration, and uptake of health-related mobile technologies and how these may develop in the future.

As computerized patient care documentation is an integrative part of patient care information systems the sixth chapter describes in a case study problems and advantages associated with this kind of documentation.

Given the increasing importance of home telehealth, the seventh chapter explores the possibilities of use of home telehealth for nurses to face practical challenges.

Nursing informatics also encompasses the way nurses are taught. In this regard, the eighth chapter represents a way of how traditional classroom delivery can be transferred into Web-based instruction, using the example of a master's of science in nursing program.

Nursing resource allocation may be made by applying ratios or based on patient dependency. The ninth chapter explores which one is more accurate and facilitates the allocation of nursing resources.

To determine the impact of a new software and/or hardware upon aspects of nurses' work before its implementation may be tested with simulation methods. The tenth chapter promotes the use of simulation methods as an evaluative tool prior to full-scale implementation of health technology and information systems.

Hodge's model as a conceptual framework is applied to explore structures of relevance to nursing informatics theory and practice. The eleventh chapter reviews the socio-technical literature and venture definitions. It offers ways to reflect upon and construct socio-technical structures.

The second chapter (Chapter XII) that deals with teaching nurses, answers one main question, "how can educators effectively teach the very social discipline of nursing in virtual classrooms?" and presents research questions that arise from this exploration.

The thirteenth chapter presents a case study where the implementation of an information system on organizational communication processes in a residence of elderly is researched.

As telemedical consultations via telemedicine or distant medical consultations are increasing, as has already been mentioned, possible roles of nurses in different types of telemedical consultations are discussed in the fourteenth chapter.

The purpose of Chapter XV is to discuss in the context of rural Australia the need for enhanced evidence-based medicine (EBM) by nurses, and how nursing informatics could help.

When instructing nurses, handheld computers are most frequently used, as these devices provide students with information for point of care clinical references. Therefore, the sixteenth chapter gives an overview of the use of handheld computers in nursing and medical education and provides advantages and disadvantages then discusses future directions in this field.

The final chapter also deals with Information Technology in nursing education and discusses the development of use of IT in nursing education including mainstream and emerging technologies.

The diverse and comprehensive coverage of multiple disciplines in the field of nursing informatics in this authoritative handbook will contribute to a better understanding of the complexity of nursing informatics. Furthermore, the contributions included in this handbook will be instrumental in the expansion of the body of knowledge in this vast field.

It is our sincere hope that this publication and its great amount of information and research will assist our research colleagues, all faculty, their students, and our organizational decision makers in enhancing their understanding of this discipline. Perhaps this publication will even inspire its readers to contribute to the current discoveries in this immense field, tapping possibilities to assist humankind in making the world a better place to live for all inhabitants of this universe.

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