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Original article

Arthedata—An online database of scientific references on art therapy

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Abstract

Introduction: The scientific situation of art therapy is currently characterized by the fact that existing knowledge and research is only marginally collected and systematically appraised, and thus is troublesome and patchy to research. The aim of the arthedata project is to generate a comprehensive international web-based information and knowledge database for research on art therapy.
Material and Methods: Based on the semantic web standard XML (eXtended Markup Language) an online database was created, which can be accessed at www.arthedata.de.
Results: Arthedata currently consists of approximately 8000 bibliographical datasets of art therapeutical literature. Based on the descriptions of these datasets, we were able to develop keyword landscapes which sequentially guide the user through the mass of resulting datasets from random hits of potentially imprecise and incomplete search terms to a controlled area of established vocabulary with a follow-up search.
Discussion: There is an urgent need in art therapy to scientifically prove its therapeutic effectiveness, which for the time being is mostly documented in experience-based material. By using innovative technological concepts, arthedata.de assists in establishing an evidence base for art therapy.

Keywords: Art therapy; Evidence; Database; World Wide Web

Introduction

Although there is a long history of art and medicine, the use of art expression as therapeutic element is a recent innovation compared to other therapeutical approaches in integrative medicine. From its origins in the 1950s, the use of art therapy has traditionally focused on the field of psychiatric and psychosomatic diseases and disorders [1,2]. In this domain, the process of the disease and patients' expression of creativity often show a similar development and thus the patient's artistic expression is an important aspect for diagnosis and therapy [3].

Within the context of psychosomatic and psychiatric diseases, art therapy has been evaluated in a variety of indications and settings: Ruddy and Milnes [4] identified 61 reports on the use of art therapy in schizophrenia or schizophrenia-like illnesses. Due to their poor quality, all but two studies had to be eliminated. Nevertheless, they were able to show a significant difference in long-term mental state measure favouring patients receiving additional art therapy.

Crawford and Patterson [5] stated 2 years later that the "evidence base for the effectiveness of arts therapies in the treatment of people with schizophrenia is beginning to emerge". Also, in other forms of psychotherapy like systemic family therapy [6] and for diseases like dementia [7], art therapy offers a broad spectrum of therapeutic approaches aiming at activating the salutogenetic potential of the patient and helping them to cope with their illness.

However, medical art therapy has begun to grow rapidly nowadays and new areas of application have been

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discovered and developed within the last decades leading to a broader spectrum of indications. In 1991, Müller-Busch [8] developed a program to integrate creative arts, creative dance and movement-based creative therapy into the treatment of patients with chronic pain to enhance patients' activity level, to stimulate positive emotional and imaginative experience and awareness, and to facilitate projective coping. A similar approach was chosen by Deane et al. [9], who report on a new art therapy program to support cancer patients in their psychological strength and to offer new insights into their feelings and their experience of the disease. The latter was also the aim in the study by Niederreiter [10], which showed that art therapy was successfully used in patients with heart disease to access their feelings.

Despite these promising results, the scientific situation of art therapy is currently characterized by the fact that existing knowledge and research is only marginally collected and systematically appraised. Although several databases on complementary medicine like CAMbase [11] and AMED do exist, art therapy in these contexts still is troublesome and patchy to research. This is mainly due to the fact that publications on art therapy are often published in the so-called "grey literature" and only marginally appear in journals indexed by electronic databases. Even if listed in such databases, the search term "art therapy" also leads to articles including phrases like "state-of-the-art therapy".

Thus the arthedata project described here aims at generating a comprehensive international web-based information and knowledge database for research in art therapy.

Material and methods

The current database arthedata.de goes back to the database kunthera, a joint project of the University of Applied Sciences for Art Therapy, Nürtingen (German abbreviation: HKT) and the German Association for Art Therapy (German: Deutscher Fachverband für Kunst- und Gestaltungstherapie, DFKGT). In addition, the library catalogues of HKT and of the University of Applied Sciences, Ottersberg (FHO), also founded a second base of bibliographical material for arthedata.de.

With regard to problems of infrastructure in peer-to-peer networks experienced during the early days of CAMbase [12], we decided to import the three datasets into a central database with strategically separated subsets.

As bibliographical data in our case does contain several heterogeneous text fragments, we decided to use the semantic web standard XML (eXtended Markup Language). Using XML-based protocols, all datasets of the old kunthera database were imported. Additionally, existing data from the library subsets of FHO and HKT with direct relevance to art therapy (excluding, i.e. books from related scientific or medical disciplines like physiology or anatomy) were also imported and indexed in arthedata. All data are made available at www.arthedata.de. In parallel, both partners were also able to define their own local classification and presentation scheme, i.e. for their local libraries. Fig. 1 gives an overview of the complete architecture of the data model.

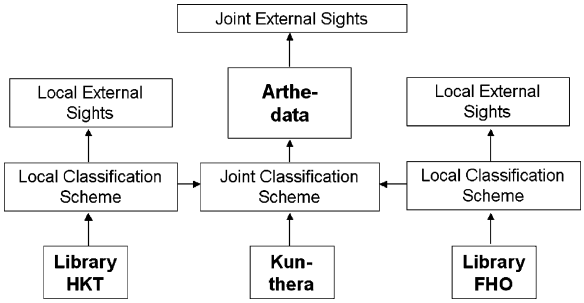

Fig. 1. Global conceptional schema of data flow in arthedata.

In addition to conventional search options (author, title, keywords, publication year,...) a natural language interface with linguistic algorithms was implemented in arthedata to simplify the search for users without a greater knowledge of research databases. These algorithms recognize especially the composition, modification or restriction of a subject, which is particularly important in the German language (i.e. the compound word "Plastiziertherapie" also finds records with "Therapie" and "Plastizieren"). Based on these algorithms we are able to provide keyword landscapes which sequentially guide the user through the mass of resulting datasets from random hits of a potentially imprecise or incomplete search into a controlled area of established vocabulary and search terms [13]. A screenshot of the keyword landscape for the search term "plastizieren" is provided in Fig. 2.

We also implemented a statistical routine for quality management, which allows us to evaluate the search queries over the course of time. A preliminary analysis of the use of arthedata.de in 2008 is presented in the next chapter.

Results

Before the data transfer into arthedata.de, kunthera was visited online by more than 1500 external visitors quarterly. At the end, it comprehended approximately 3100 records of specific art therapeutical literature as well as relevant titles of related scientific disciplines.

Today arthedata.de consists of more than 8000 records and was visited approximately 10,000 times with 4000 search queries performed including 38,000 sessions in 2008. In the mean, each search query leads to 9–10 sequential sessions. Fig. 3 provides an overview of the course of the year 2008. Note that from the "official launch" of the preliminary online version in August 2008, there has been a significant increase in the number of page hits and queries performed compared to November 2008. At present a volume exceeding 29,000 search terms is analysed and evaluated with respect to special clusters of interest.