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User-centered design to develop clinical applications. Literature review

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Abstract

User-centered design is mentioned by Norman as "the need for a design that uses the natural properties of the individuals, exploiting the relationships and constraints and focusing on the needs and interests of the user, in order to make the final products usable and understandable". This is also important in health developments. The objective of this paper is to search and analyze articles in the healthcare field where user-centered design principles have been applied. We describe findings in this topic from articles published between January 1995 and September 2014.

Keywords:
User center design, electronic health record, Health information systems, Usability.

Introduction

The concept of user-centered design (UCD) has become popular in recent years due to the importance and impact that its application has had on creating more usable products.

UCD is about the need for a design that uses the natural properties of the individuals, exploiting the relationships and constraints, and focusing on the needs and interests of the user, in order to make the final products usable and understandable. The difficulty and complexity in the design of software tools for the health field has generated the need for specially trained teams to handle the particular domain. The objective of this paper is to search and analyze articles in the healthcare field where user-centered design principles have been applied.

Materials and Methods

Pubmed, Lilacs, and ACM Digital Library were used. **Inclusion criteria:** Publications that reviewed the domain related to health applications and that referred to pieces of software. Also, if human, social, and behavioral principles were taken into account in designing the user interface. **Exclusion criteria:** Domain not related to health care, development of hardware that does not include software development, and no description in the article of the process and the techniques used. **Search strategy:** We decided to use truncation strategies. The search – whenever possible – was performed using the term "user center* + design". In instances where it was not possible to use truncation strategies, we performed the search using key phrases ("User center design" / "user centered design"). Search was conducted for publications in PubMed, Lilacs, and ACM Digital Library. We established a time frame for articles published between January 1995 and September 2014.

Results

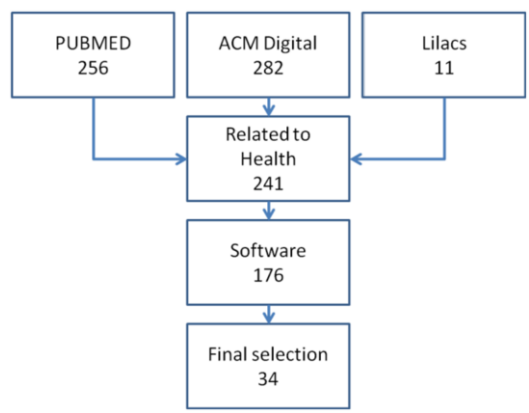

Figure 1: Flowchart with items founded.

For more detailed in the artiles analyzed see Annex 1.

Conclusion

UCD can increase the adoption and efficient use of IT tools in the field of health, reducing support, development, and maintenance cost, and ultimately increase user satisfaction and patient safety.