The development of a software for musculoskeletal evaluation database

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INTRODUCTION

Musculoskeletal (MSK) complications are the major cause of deterioration the quality of life of hemophilia patients. In order to evaluate and detect MSK changes several groups developed different outcome measurements.
The objective of this project was to create a software for MSK evaluation database with the main standardized assessments with free access for those interested in the use of this tool.

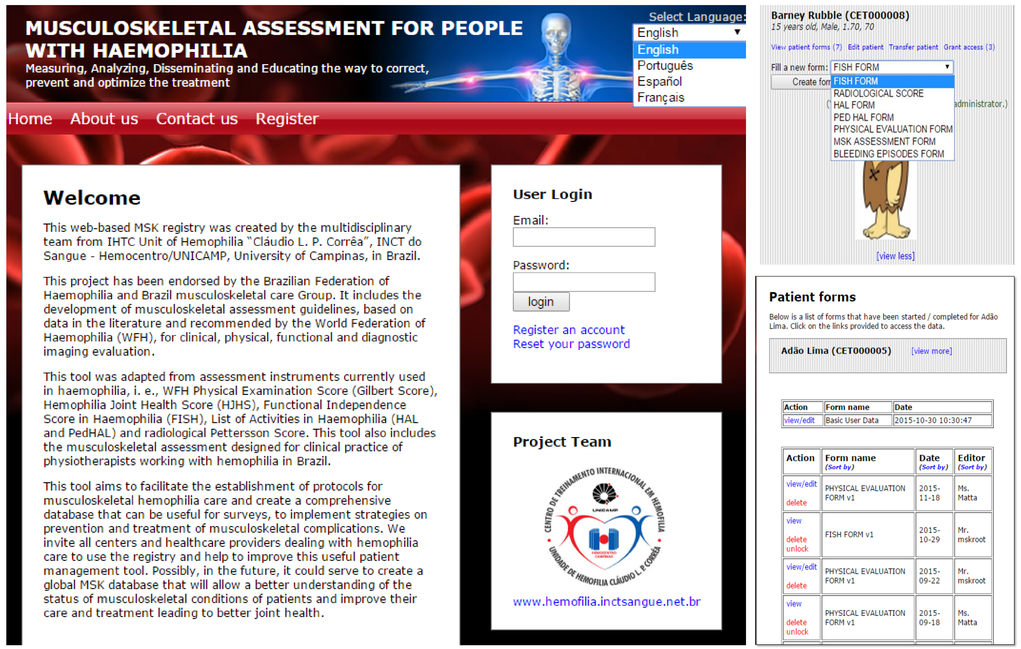

Figure 1. Overview of the website with examples of possible forms and reports.

METHODS

In 2010, we started the development of a software that included the main physical, functional and radiological MSK assessments used in hemophilia. This was part of the MSK M.A.D.E. in Brazil (Measuring, Analyzing, Disseminating and Educating) project, supported by Novo Nordisk Haemophilia Foundation.
The software was developed in web-based format and contains eight forms: personal data, WFH Physical Examination Score (Gilbert Score), Hemophilia Joint Health Score (HJHS), Functional Independence Score in Hemophilia (FISH), Hemophilia Activities List (HAL and PedHAL), radiological Pettersson Score, MSK assessment (with additional information) and a bleeding episodes form.
There are three types of users : standard user, limited user and center administrator user. Each center can specify the role of the professional involved.
Users can choose different forms, and a single patient can be evaluated several times in a specific score. All scores are automatically calculated.

RESULTS

The information can be evaluated in different reports for each patient overtime, or all patients from a single center, with the possibility of establishing up to three different simultaneous criteria. The report can be exported to excel. The website and all forms are available in four languages: English, Portuguese, Spanish and French and has two platforms available, one for real data (www.mskbrazil.net.br) (figure 1), and another for training (www.mskbrazil.net.br/training).
There are many possibilities during managing information, such as: create new assessments, visualize previous questionnaires, edit patient data, delete information, transfer patient to another site (when agreed between sites) allow access to data on this patient by another professional authorized by who is managing the data.
The software is now located in an independent server at University of Campinas, in Brazil, however all data are confidential and the access is realized through passwords to guarantee patient's and center's privacy. Each center has the access solely to the patients of that same center. Other centers, from different countries were invited to use the software, free of cost.

CONCLUSIONS

This software was created to provide continuously updated database to allow individual and collective evaluation of the MSK status of hemophilia patients. The main idea is to share, combine and compare information with the objective to have a most complete and comprehensive MSK status possible.

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