Web 2.0 based Educational Intervention for Adolescents with Type 1 Diabetes: Design of a randomized controlled Trial

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Abstract

Web 2.0 can be a very good technology to build a framework for diabetes education and consequent evaluation of this education. Objective - The objective of the study is to evaluate the effectiveness of a web 2.0-based educational intervention, on glycemic control in adolescents with type 1 diabetes. Methods - A randomized controlled trial design will be used. 300 adolescents diagnosed with type 1 diabetes will be randomized into 3 groups: Web 2.0-based Intervention; Web Intervention and Control group. The evaluation of the educational program will be given by the following variables and instruments: HbA1c (Test Lab); Social Support, Resilience, Quality of Life and Knowledge about diabetes (Questionnaires). Discussion - Web 2.0 applications are emerging with educational potential. Following this trend, the present study design provides an innovative contribution to integrate and evaluate the web 2.0 resources into an educational intervention for adolescents diagnosed with diabetes.

Keywords:

Internet, Web 2.0, Web-based intervention, Diabetes, Resilience, Distance education

Introduction

Chronic disease management is a global health concern. The role of educational interventions in facilitating adaptation to chronic disease is receiving growing recognition, and current care policies advocate greater involvement of patients in self-care. Web 2.0 is a term for new collaborative Internet services characterized by user participation in developing and managing content [1].

Objectives

The general objective of the study is to evaluate the effectiveness of a web 2.0-based educational intervention, on glycemic control in adolescents with type 1 diabetes. Specific objectives of the study are to evaluate the effect of intervention on the following variables: glycated hemoglobin (HbA1c); quality of life, resilience, social support and knowledge about diabetes.

The hypothesis to be tested in this study is that a diabetes and resilience web 2.0 based educational intervention can have a significant effect on glycemic control.

Methods

Will be recruited to the study 250 adolescents, diagnosed with type 1 diabetes, attended the Diabetes Center of the Hospital São Paulo, UNIFESP, Brazil. Inclusion criteria will be patients aged 11 and 21 years, without any psychiatric disorder and HbA1c greater than 8%.

Study conditions. Patients will be randomized into 3 groups: 1 – *Web 2.0-based Intervention***.** The intervention includes multimedia modules of diabetes education (endocrinology, nutrition, physical education) and resilience education . In this group the patients will have available all the tools that web2.0 offers. They also will have a collaborative participation. The architecture of the web 2.0 system will allow the use of methods of participatory design. In this virtual environment the patients will participate in the development and maintenance of content. 2 – *Web Intervention* - In this group the adolescents have access to modules with the content, but will not have any kind of collaborative participation. 3 - *Control*. Standard care of the Center for Diabetes.

Evaluation plan: The evaluation of the intervention will be given by the following variables and instruments: A – Laboratory examination. Glycated hemoglobin (HbA1C). B – Validated tests that will be applied in the virtual environment . - *Knowledge about diabetes.* - MOS social support survey. - Inventory of Quality of Life of Youth with Diabetes IQVJD. – Resilience Scale.
The assessment by the instruments will be held three times: initial assessment (1), after the intervention (2) and 6 months after the 2nd assessment (3). Initial assessment will be held after signing the informed consent.

Discussion

Recently, several studies have been published showing the increasing use of Web 2.0 resources, pointing to the importance of incorporating these resources into educational programs and interventions. In order to allow the user to have a collaborative participation in the construction and mainte-

nance of the virtual environment, and then develop a network of social relationships. Web 2.0 also supports constructivist approaches to learning and has great potential in socializing online learning to a greater extent than previously seen. Web 2.0 technologies should be implemented taking into account pedagogical perspective. Following this trend, the present study design provides an innovative contribution to integrate and evaluate the web 2.0 resources into an educational intervention for adolescents diagnosed with diabetes [2].

References

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