

POLITECNICO DI MILANO
Scuola di Ingegneria Industriale e dell'Informazione
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GEA
Gioco Educazione Alimentare

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Sommario

In italiano, descrizione NDD, scopo tesi, descrizione tecnologia usata(in breve), nome sistema sviluppato e collaborazione. (circa 1 pagina)

Abstract

Traduzione del sommario.

Ringraziamenti

GENERICO FAMIGLIE PROFESSORESSA CORRELATORE PERSONE IN
PARTICOLARE (VITO E NICO) ASSOCIAZIONI AMICI E COLLEGHI

Federica e Giulia

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Introduction

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Chapter 1

State of the art

1.1 Food problems and their impact on childhood

One of the main problems of modern society is the one related to nutrition. Nutrition has changed a lot in history thanks to the industrial development that allowed the massive production of foods that in the past were produced only by hand (and with high costs) and thanks also to scientific progresses that allowed the discovery of food conservation and their elaboration to obtain new kinds of food that are more suitable to our need. Montignac [1] also identifies other causes that brings the concept of "nutrition" to assume the current meaning, for example the habits evolution and the female emancipation that has changed the ancient vision of women as "landladies" and that has promoted the progression of the "ready meals" industry and therefore of pre-cooked and packaged meals that today are consumed increasingly. However, the main phenomenon that has taken place in our era is the one related to the globalization and standardization of destabilized north american eating habits that has promoted the global growth of fast-food, indicated by WHO (World Health Organization) as a "pandemic" since 1997 given its extraordinary expansion that carried also a lot of other problems.

Childhood obesity is surely one of the clearest examples of these diet's changes of the new millennium. According to a seminar held by CB Ebbeling, DB Pawlak and DS Ludwig [2] childhood obesity is a phenomenon that has had a great increase in all the world in the last twenty years, as we can see from this diagram.

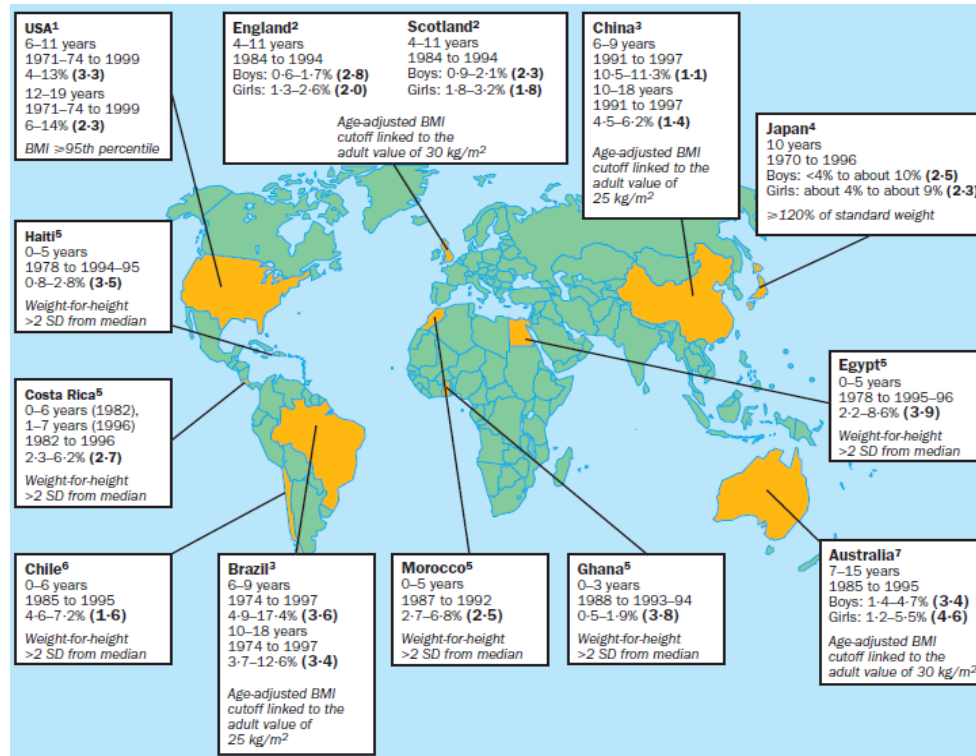


Figure 1.1: Childhood obesity diagram

Historically, a fat child was seen as healthy because he was likely to survive better to illnesses and infections; however, excessive fatness has become one of the most diffused health problem in children. The three experts have underlined how the problem is most common in developed and industrialized nations in which diet has changed radically favouring foods containing saturated and trans fat and with high glycaemic index, typical of fast-food in which also bigger portions are served. Moreover, this foods are also poor of fibre, micronutrients and antioxidants that the body needs for a correct functioning of metabolism. The excessive consuming of these foods brings the child to have health problems such as heart diseases, vascular disorders, hypertension, chronic inflammations and diabete of type 2, illness that in the past was not present in teenagers, but that now has had a rapid spread.

Another important problem that affects the food safety of children is represented by allergies. According to the data collected by AM Branum and SL Lukacs [3] it is possible to observe an increasing in cases of all kinds of food allergies including milk, eggs, peanuts, tree nuts, fish, shellfish, soy and wheat of around the 18 per cent on individuals under the age of 18 from the 1997 onwards in US (but we have reasons to believe that this can also be found in all the industrialized world). Reactions to these foods may vary from small diseases to anaphylactic shock that, in severe cases, could lead to death. The researches have also underlined how, in the same period

analyzed previously, there was also an increasing of hospital discharges (clearly after an hospitalisation) due to allergic reactions as we can see from this barplot.

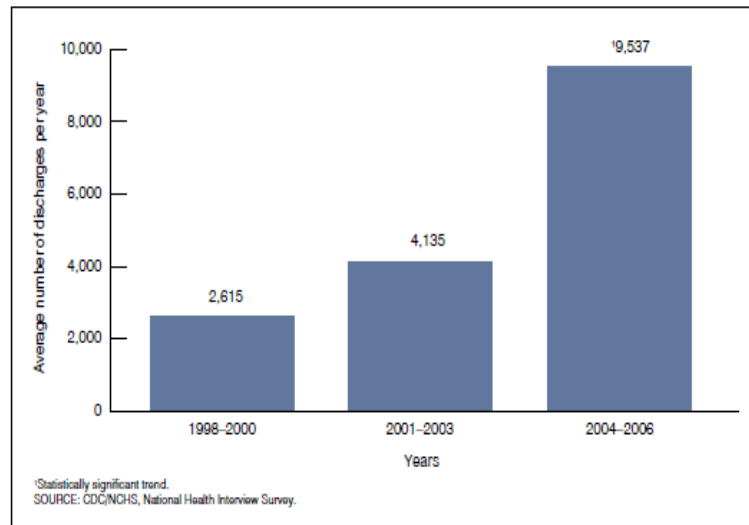


Figure 1.2: Allergy hospital discharges barplot

All these problems that have been reinforced in recent years, lead us to think that it is necessary to support nutrition education and to make it a fundamental thing during childhood and adolescence, in order to empower everyone to a correct care of their health.

1.2 Modern technologies for NDD people

1.3 VR for NDD

Chapter 2

Target groups, Needs and Requirements

2.1 Requirements elicitation

2.2 Onlus varie

2.3 Main target groups

2.4 Context and need addressed

2.5 Constraints

2.6 Goals

2.7 Requirements

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Chapter 3

Design

3.1 General approach

3.2 Descrizione singole parti

3.3 Scenarios

3.4 UX

3.4.1 Site maps

3.4.2 Pages

3.4.3 Use cases

activity diagram

Chapter 4

Implementation

4.1 Tools

4.2 Hardware Architecture

4.3 Software Architecture

Chapter 5

Content issues

Problems and solutions con tabella pro e contro.

Chapter 6

Evaluation

Fasi varie strutturate con: objectives, participants, test setup, introduction to the test, test procedure, feedback, test results and conclusions.

Chapter 7

Value proposition

Chapter 8

Future work

Bibliography

- [1] Michel Montignac. *La storia dell'alimentazione dell'uomo*.
- [2] DS Ludwig CB Ebbeling, DB Pawlak. *Childhood obesity: public-health crisis, common sense cure.*, volume 360, pages 473–482. The Lancet, August 2002.
- [3] SL Lukacs AM Branum. Food allergy among us children: trends in prevalence and hospitalizations. *NCHS Data Brief*, (10), 2008.

Appendix A

First appendix - User manual

Appendix B

Second appendix - Questionar

