

Children's Perceptions on Cancer: Digital Storytelling as Means of Education

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Abstract

The model of Health-Promoting School has received increasing recognition in Portugal, and oncology prevention has been a recurring theme in several actions that involve the interaction between several actors that go beyond the school community. This study was developed in order to implement an awareness raising action, using programmatic contents of the school curriculum and adapting it to innovative multimedia resources. We achieved the profiling of 625 students between the ages of 9 and 13. The results show that the overwhelming majority of children (98.2%) have heard about cancer, but in one of the schools the percentage of students who consider cancer a contagious disease reaches 12.6%. Risk factors for the development of this type of disease are correctly identified by most of the students (72.9%). Still, nearly 40% of them have the perception that cancer can be originated from a flu. After a multimedia session, of the 625 students participating in this experiment, more than 80% were able to correctly identify risk factors associated with cancer, treatments and positive strategies for living with patients. Of the 21 teachers involved, 18 considered highly relevant the adequacy of new multimedia resources and digital storytelling for the dissemination of health education contents.

Keywords: Cancer; Education; Multimedia; Storytelling

1. Introduction

Pointed out as the second leading cause of death in developed countries, cancer incidence has been rising from year to year. [1] However, and according to the World Health Organization (WHO), “about 40% of all cancers can be prevented and others can be detected at an early stage of development, treated and cured.” [2] This perspective gives priority to the implementation of health education actions capable of working healthier lifestyles in the long term. School seems to be particularly important in it, given its unique characteristics to construct behavioural directions at crucial ages. [3] The concept of “Health-Promoting School” has been cited a good example of the shifting focus from the behaviour of individuals to the development of health “settings” [4], as promoted by the Ottawa Charter. [5] But School represents more than an intervention place regarding prevention [6].

Medical treatments has increased the number of children who survive cancer [7]

and they tend to spend less time outside of the hospital setting [8] Returning to school after hospitalization has been demonstrated as an important step to improve their diminished physical, psychosocial, and academic functioning. [9] On the other hand, there are some difficulties that arise when a child with cancer returns to school. [10]

The lack of knowledge from teachers about the disease [11] and the social rejection from the other students appear as significant determinants to the reintegration of surviving children. [12]

2. Methods

This study was developed based on the implementation of a cancer awareness activity in four different schools, from the same city in Portugal. Each 90 minutes session was organized by cancer and communication researchers to achieve three different goals: 1. To understand the perceptions about cancer of students from the 5th and the 6th grades; 2. To increase the knowledge about cancer with a multimedia tool; 3. To assess its pertinence for teachers and students.

2.1 Students' perceptions about cancer

A cancer knowledge assessment questionnaire was applied. The instrument was composed of four sets of questions: 1. Socio-demographic; 2. Parental qualifications; 3. Knowledge about cancer. 4. Contact with people with cancer. The questionnaires were completed in the presence of the researchers who conducted the awareness activities, and the confidentiality of the responses was guaranteed. Data was analyzed and statistical associations were calculated through Chi-Square and Cramer's V tests.

2.2 Multimedia tool

After the questionnaires been applied, an educational tool in Portuguese was presented and a 40 minutes discussion was encouraged.

A short animation movie called "My Brother is a Superhero" was developed based on three strategies: explanation of scientific concepts based on the implemented curricula; identification of the most common misconceptions about cancer; integration of the content in a creative story told by a cancer survivor.

The narrative of this story was developed in different steps: 1. John, a very curious kid discovers his brother has leukemia; 2. The main character reveals he wants to know more about this disease, and his parents helped him talking with his brother's doctor; 3. The doctor explains the biological origin of the disease, based on the knowledge children in 5th and 6th grades have about the cell, the unity of the human body; 4. Cellular proliferation, different types of treatment and side effects are explained; 5. After the treatments, the recovering brother reveals that he is afraid to go back to school because doesn't know how he will be received by his colleagues. 6. John help him by talking with his brother's classmates, and describes his brother as a superhero who killed malignant cells with powerful weapons (Image 1).

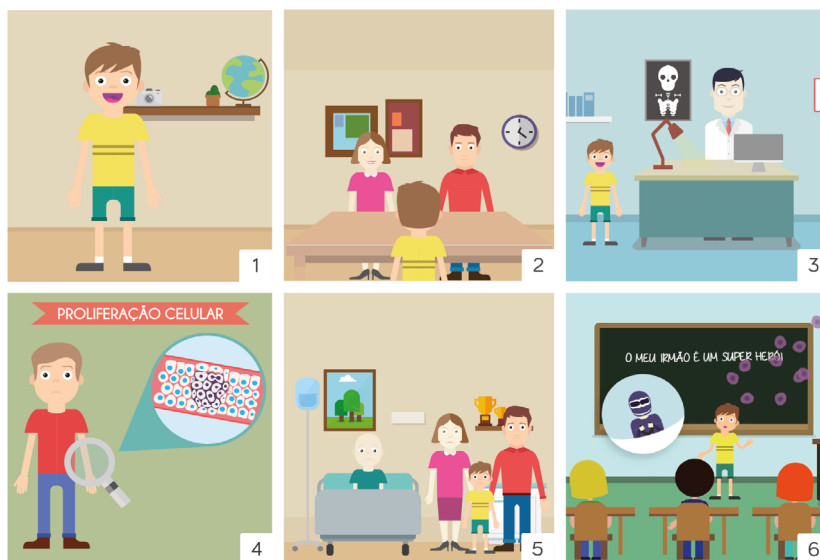


Image 1. Six frames of “My Brother is a Superhero”, the short animation movie developed for the awareness sessions

2.3 Evaluation of the awareness activity

After the discussion, the class was divided in groups, and a quiz game with 10 questions about the movie was promoted. The teachers who accompanied the classes were given a questionnaire with three groups of questions: 1. Socio-demographic data; 2. Previous contact with students with cancer; 3. Relevance of the current activity.

3. Results

3.1 Students’ perceptions about cancer

Students from the four schools, now identified as School 1, School 2, School 3 and School 4, answered the same questionnaire, with a total of 625 participants, being 49.8% female and 50.2% male. About 48.3% of the students invited to the awareness sessions were 11 years old, 37.3% were 10 years old and only 12.3% were 12 years old. The four schools have a distinct number of students: School 4 presents the largest amount ($n=315$), with the remaining three schools having similar smaller numbers, around 100 each. The age distribution of the sample is, however, quite homogeneous within the four schools.

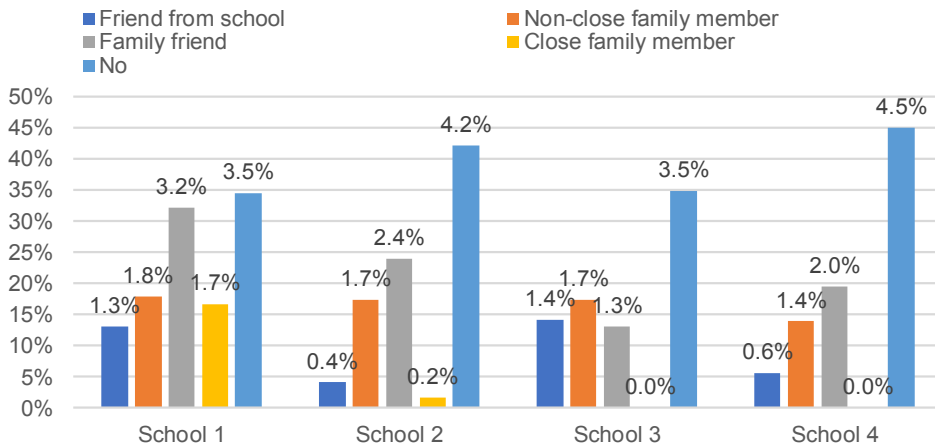
	School 1	School 2	School 3	School 4	Total per variable
Students	84	127	99	315	625
Gender					
Female	37 (44,6%)	52 (41,3%)	55 (55,6%)	165 (52,7%)	309 (49,8%)
Male	46 (55,4%)	74 (58,7%)	44 (44,4%)	148 (47,3%)	312 (50,2%)
Age					
10 y.o.	32 (38,1%)	42 (33,1%)	31 (31,3%)	128 (40,6%)	233 (37,3%)
11 y.o.	35 (41,7%)	61 (48,0%)	53 (53,5%)	153 (48,6%)	302 (48,3%)
12 y.o.	13 (15,5%)	23 (18,1%)	15 (15,2%)	26 (8,3%)	77 (12,3%)
Grade					
5th grade	42 (50,0%)	57 (44,9%)	47 (47,5%)	167 (53,0%)	313 (50,1%)
6th grade	42 (50,0%)	70 (55,1%)	52 (52,5%)	148 (47,0%)	312 (49,9%)

Table 1. Distribution of the participating students of each school by gender, age and schooling

Parents from school 4 has the best average regarding their level of education, with the best percentages of mothers and fathers that went to College. In contrast, Schools 2 and 3 share the strongest percentage of parents with less than High School.

Of the 625 students, 98.2% had previously heard about cancer, and 48.6% reported knowing someone with the disease. Most of the students from School 3 who answered affirmatively stated they know a non-immediate family member with cancer.

In the other schools, most of the students have family friends who have or had the disease (Graph 1).

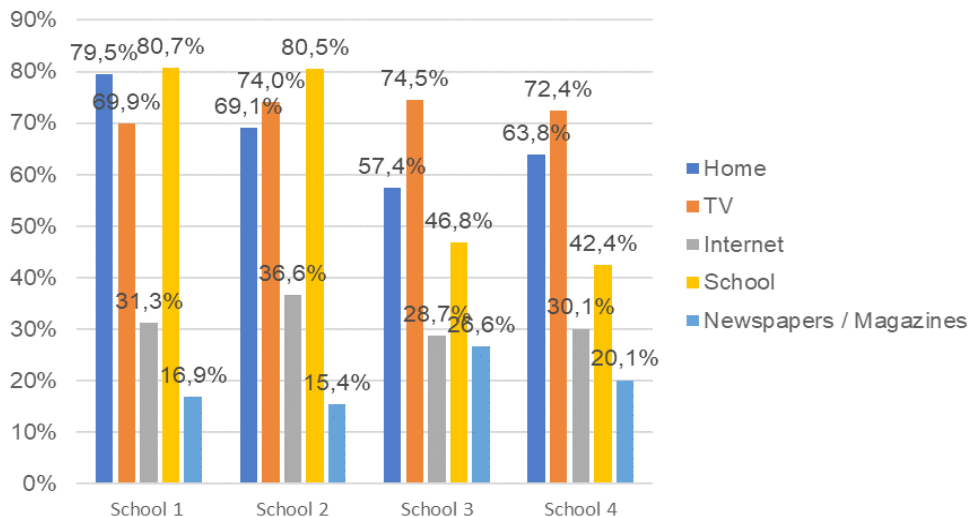


Graph 1. Previous contact of the students with people with cancer

Most of the students from School 1 and School 2 heard about cancer at school, 80.7% and 80.5%, respectively. On the other hand, School 3 and School 4 have more students hearing about this topic through TV (Graph 2).

Approximately 72.9% of the participants were also able to correctly select

behavioural risk situations. The values obtained by the four schools demonstrate small variations, with a stable number of correct answers.



Graph 2. Cancer information resources reported by the participants from each school

On average, more than 90% of students in all four schools identify cancer as non-contagious, but 218 students answered thinks cancer can be caused by a flu. School 3 and School 4 presented higher percentages of affirmative answers (42.2% and 38.5%). Of the 625 students, 68.3% indicated they did not know the name of any cancer treatment.

Three pairs of variables presented significant levels of association: (1) more females heard about cancer at home than males ($p=0.001$); (2) older students tended to hear more about cancer in school ($p=0.002$); and (3) students whose father had a higher level of education heard more about cancer through television ($p=0.008$).

Having a friend from school ($p=0.014$), a relative ($p=0.001$), a friend of the family ($p=0.000$) or a direct family member ($p=0.017$) with cancer boosted the percentage of students that heard about cancer in their homes.

3.2 Evaluation of the awareness activity

A total of 124 groups debated 10 questions. From those, 101 groups, about 81.6% of the students, could answer correctly to all the questions. Twenty-one teachers, 15 female and 6 male, accompanied the students. Working in different areas, the majority (42.9%) were between the ages of 46 and 55 years old. Four teachers reported they have already dealt with an oncological disease situation with their students or with close relatives of students. Most of the teachers (around 85.7%) recognize the relevance of addressing this issue in the 5th and 6th grades with multimedia resources.

The remaining (14.3%), while recognizing the importance of the topic, justify it should be discussed only in situations where a child has cancer or lives with someone close to him who is sick.

4. Conclusions

The awareness action has been shown to be useful in increasing students' knowledge about cancer. Its effectiveness should be measured in the long term, studying the level of individual knowledge of teachers and students and the adoption of school strategies to host cancer surviving students.

REFERENCES

- [1] Bray, F; Ferlay, J; Soerjomataram, I; Siegel, R; Jemal, A. "Global Cancer Statistics 2018: GLOBOCAN Estimates of Incidence and Mortality Worldwide for Cancers in 185 Countries", *A Cancer Journal for Clinicians*, 2018, 68: pp. 394-424.
- [2] World Health Organization, "Cancer Control: Knowledge into Action", WHO Library Cataloguing-in-Publication Data-Prevention, 2007, pp. 17-34.
- [3] World Health Organization. "Report of the School Health Working Group and the WHO Expert Committee on Comprehensive School Health Education and Promotion". Geneva: WHO; 1996.
- [4] Langford, R; Bonell, CP; Jones, HE; Poulou, T; Murphy, SM; Waters, E; Komro, KA; Gibbs, LF; Magnus, D; Campbell, R. The WHO Health Promoting School framework for improving the health and well-being of students and their academic achievement. *The Cochrane database of systematic reviews*, 2014, 4 (4).
- [5] World Health Organization (WHO). "The Ottawa Charter for Health Promotion", WHO Regional Office, 1995.
- [6] Harris, S.M. "School reintegration for children for children and adolescents with cancer: The role of school psychologists", *Psychology in the Schools*, 2009, 46(7), pp. 579-592.
- [7] Steliarova-Foucher, E; Stiller, C; Kaatsch, P; Berrino, F; Coebergh, J; Laccour, B; Perkin, M. "Geographical patterns and time trends of cancer incidence and survival among children and adolescents in Europe since the 1970s: an epidemiological study", *The Lancet*, Volume 364, Issue 9451, pp. 11-17, 2004, 2074-2076.
- [8] Patenaude, A.F. & Kupst, M.J. "Psychosocial Functioning in Pediatric Cancer", *Journal of Pediatric Psychology*, 2005, 30 (1), pp. 9-27.
- [9] Larcombe, I. "Reintegration to School after Hospital Treatment", Aldershot: Avebury, 1995.
- [10] Closs, A. "Introduction to the children and their educational frameworks", *The Education of Children with Medical Conditions*, David Fulton Publishers, London, 2000, pp. 1-14.
- [11] Kourkoutas, E. "An ecosystemic psychodynamic intervention for children with mild psychosocial problems and academic difficulties: prospects and limits of the evaluation process". In Canali, C., Vecchiato, T. & Whittaker, J. K. (eds.), 2008, pp. 434-439.
- [12] Rabin, N.B. School Reentry and the child with a Chronic Illness: The Role of the Pediatric Nurse Practitioner, *Journal of Pediatric Health Care*, 1994, 8(5), pp. 227-232.