



## Original Research Article

# Educational comics: A beneficial tool for delivering oral health information to children

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## ABSTRACT

**Background:** Maintaining crucial behaviours, such as brushing teeth twice a day with fluoridated toothpaste and limiting intake of sugary foods and drinks, is crucial to the prevention of dental caries.

**Purpose:** This study aims to inform elementary school students about the value of good oral hygiene and the role that diet plays in preventing dental diseases. It also examines the differences in knowledge levels between students who receive information verbally and those who receive it in the form of comic material.

**Materials and Methods:** The study was carried out in Elementary Schools. 240 students in all responded to the test. Group A consisted of 120 students (60 students from Class IV Group A and 60 from Class V Group A), who completed the quiz after hearing the content aloud. After reading the comic material, 120 students from Group B (Class IV Group B: 60 students and Class V Group B: 60 students) responded to the quiz. All the students were given 5 minutes to complete the quiz. After that, the responses were collected and graded.

**Results:** Ten percent of class IV students and twenty percent of class V students had good knowledge level about the significance of oral health and hygiene after hearing the information verbally, whereas thirty percent of class IV students and fifty percent of class V students had good knowledge level after reading the comic material.

**Conclusion:** Compared to verbal delivery, the students understood the content more effectively when it was presented through comic material.

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## 1. Introduction

The prevention of childhood dental caries depends on maintaining important behaviours, such as brushing teeth twice daily with fluoride toothpaste and limiting intake of sugary foods and beverages.<sup>1</sup> Investigating new strategies for delivering information to various relevant audiences' benefits health communication practitioners and researchers (i.e., the public, health care professionals). Research has shown the value of utilising narratives to convey health information (see, for example, Green, 2006; Hinyard & Kreuter, 2007) and that visual messaging elements (such

as images, illustrations, and graphical displays) can be helpful in conveying complicated information (see, e.g., Houts, Doak, Doak, & Loscalzo, 2006). Comics in all their incarnations are the visual tales that are most important to the study of graphic medicine.<sup>2</sup> An educational comic is one that "transmits information or communicates concepts, rather than telling a story or entertaining the reader." In the area of health education, educational comics may serve a variety of purposes, such as promoting self-management of chronic conditions, promoting awareness of disease symptoms, educating patients about what to expect during medical procedures, assisting with decision-making, or simply fostering a greater understanding and acceptance of a condition.<sup>3,4</sup> This study aim to educate the students

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of elementary school about the importance of maintaining good oral hygiene and how important is diet in preventing the dental diseases , and to see the difference between the knowledge level of the students when the information is delivered to the students via comic material as compared to when given verbally.

**2. Materials and Methods**

The study was conducted in two Elementary schools. Total of 120 students of class IV and 120 students of Class V were included in the study. The students of each class were divided into two groups. ‘Group A’ included half of the students (60 students in total from Class IV and 60 students in total from Class V) and the information about the importance of oral health and dietary habits was given ‘verbally’. ‘Group B’ included the rest half of the students (Other 60 students in total of Class IV and other 60 students in total of Class V) the educational material was given in the form of ‘comic’ (Figure 1). The educational material was made from the Educational comic book “A TOOTH STORY ”.<sup>5</sup> The program was conducted in the class at the school only.

The Group A students were given educational session verbally for 10 minutes and were distributed questionnaire which consisted of six questions. After 5 minutes, the responses were collected from the students. The Group B students were given the educational material in the form of comics and were given 10 minutes to read it and understand it, and were then given the same questionnaire to be completed in 5 minutes. After that, the responses were collected from the students. The results were evaluated on the same day.



**Figure 1:** Sample page of comic material used in the study

**3. Results**

A total of 240 students answered the quiz, out of which 111 were females and 129 were males. 120 Students were included in GROUP A (Class IV Group A =60 students and Class V Group A = 60 students) and they answered the quiz after receiving the information verbally. 120 students which were included in Group B (Class IV Group B = 60 students and Class V Group B = 60 students) answered the quiz after reading the Comic Material. All the students took 5 minutes to answer the quiz. The correct answer was given a Score 1, whereas the wrong answer was given a Score 0. Students who Scored 0, 1, 2 were Graded ‘BAD’, who scored 3, 4 were Graded ‘MEDIUM’ and who scored 5, 6 were Graded ‘GOOD’.

Table 1 Shows the results of Class IV and Table 2 shows the result of Class V.

**Table 1:** Results of Class IV after receiving the information ‘Verbally’ (Group A) and after reading the ‘Comic Material’ (Group B)

| Knowledge Level | Group A(n) | %   | Group B(n) | %   |
|-----------------|------------|-----|------------|-----|
| Good            | 6          | 10% | 18         | 30% |
| Medium          | 24         | 40% | 24         | 40% |
| Bad             | 30         | 50% | 18         | 30% |
| Total           | 60         |     | 60         |     |

**Table 2:** Results of Class V after receiving the information ‘Verbally’ (Group A) and after reading the ‘Comic Material’ (Group B)

| Knowledge Level | Group A (n) | %   | Group B(n) | %     |
|-----------------|-------------|-----|------------|-------|
| Good            | 12          | 20% | 30         | 50%   |
| Medium          | 30          | 50% | 17         | 28.3% |
| Bad             | 18          | 30% | 13         | 21.6% |
| Total           | 60          |     | 60         |       |

Based on Table 1, the data showed that in Class IV, only ten percent of the students had good knowledge after receiving the information about the importance of oral health and hygiene verbally, whereas thirty percent of students had good knowledge after reading the comic material.

Based on Table 2, the data showed that in Class V, only twenty percent of the students had good level knowledge after verbally receiving the information regarding the importance of oral health and hygiene. However, fifty percent of students had good knowledge after reading the Comic Material.

Therefore, the data shows the great difference between the level of knowledge after receiving the oral health information verbally and after reading it via Comic Material. It is seen that the students acquired the information better when given via Comic Material as compared to when

delivered verbally.

#### 4. Discussion

An epidemiological study<sup>6</sup> of Kalijudan 1 Elementary School students reported the comparison of pre- and post-test results and revealed that there was an increase of 1.3 after receiving and reading the comic book. The study conducted by Zuhriyyatul Haq<sup>7</sup> found that the fifth grade students at SDN Martopuro in Kecamatan Purwosari, Kabupaten Pasuruan, could improve their knowledge about oral health by reading a comic from the Health Campaign Central of the Indonesian Ministry of Health. The results of the study showed that the student's knowledge increased significantly after reading the comic. In our present study, it is found that the comics are beneficial tool in improving the knowledge about oral health, as compared to when given verbally.

A person's level of knowledge might vary depending on a number of things. Age-related characteristics of respondents can have an impact on respondents' knowledge, particularly regarding dental health. A person's sensing of an object through his or her senses results in knowledge. Knowledge will be at its highest when it is influenced by a person's level of focus and perception toward a specific object. The respondent has five sense sensations when reading the comic. Respondents will be more likely to read comics repeatedly and have a greater understanding of dental health as a result of the graphics and illustrations on the comics stimulating their ability to retain the messages contained therein.<sup>8,9</sup> According to the study<sup>8</sup> conducted by Muis, Ansyari & Gunawan, Erwin & Pharadiba, Pharadiba & Ashar, Febriansyah & Rieuwpassa, Irene, The Comic Eksis Cermin Si Imut is beneficial in enhancing students' knowledge of classes III, IV, and V SDN 12 Kapopposang Island. According to the present study's results, the students who read the comic book retained the information better as compared to the students who were given the information verbally.<sup>5</sup>

According to the findings, employing comic book presentations as a teaching approach can improve competence development, support the growth of invention and flexibility, and also help close the gap between theory and practise.<sup>10</sup> The prospective cohort study<sup>11</sup> looked at whether the comic book Neta and the Medikidz Explain JIA would increase disease-related information and treatment adherence among patients with juvenile idiopathic arthritis (JIA), and found that it is an effective educational tool for doing so. In the study conducted by Ariani Pongoh et al.<sup>12</sup> the mean score post-test the was much higher than it was before (pre-test 70,67; post-test 74,71; p-value 0,01). When categorical scores were compared between the pre-test and post-test, significant differences were found; in the post-test group, up to 46, 67% (21 children) scored well. It was concluded that comic books with cultural context are an

alternate kind of children's media for health promotion.<sup>12</sup> In our present study we also saw that the comic book was also an effective tool to educate the students about the oral health and good oral hygiene practises.

#### 5. Conclusion

The students who read the comic material were able to understand better the importance of maintaining proper oral hygiene as compared to the students who were given the information verbally. This study looked at how educational comics can improve learning outcomes and help kids better comprehend the value of good oral hygiene. The schools, parents, and dental care professionals have not fully understood the comic potential as educational aids in teaching the children about oral health, despite the need for new types of learning materials to more effectively engage and teach the children today. The parents, teachers and dentists can think of using comic books as an effective educational tool to inculcate the good oral hygiene and dietary habits better than communicating the same verbally.

#### 6. Source of Funding

None.

#### 7. Conflict of Interest

None.

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