

Health education models for paediatric inpatients: The roadmap for success

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Abstract Healthcare professionals should take advantage of any opportunity to provide inpatients or outpatients with an educational experience to encourage children and parents/caretakers to see education as a positive experience. A successful educational production should be able to: 1) educate patients with different levels of literacy, education, and language proficiency; 2) compete with entertaining material by capturing viewers' attention; and 3) be in a high-quality digital format that can be presented in any hospital information technology system. Strategies for successful educational productions must consider the unique aspects of health education. Health education differs from traditional education in that it requires behavioural modification and knowledge acquisition. Therefore, a theoretical foundation must be considered during the design and production of the material. These strategies were used in an educational production which showed they can successfully compete for viewers' attention in the digital world. The material shown in a popular social media outlet seemed to compete successfully with popular entertainment productions directed to children/parents/educators. It is worthwhile to consider that success in preventive care and health education may require theoretical-based models of production. The possibilities for these types of presentations to be integrated into patient care systems are unlimited and should not be missed.

KEYWORDS: social media, entertainment, inpatients, children

INTRODUCTION: BACKGROUND

A teachable moment (TM) is a situation, such as a medical incident in the emergency room, that provides an opportunity to motivate individuals to become more receptive to behavioural change interventions following a traumatic event.¹ TMs provide educational opportunities for providers, and using similar learning techniques with patients in a hospital setting, may allow providers to teach on a range of different topics, including strategies to reduce health behavioural problems.² Inpatients and their families can benefit from the multiple points of contact with different hospital services.

Studies have found opportunities to use TMs in the primary care setting, which depend on the ability of the physician to recognise opportunities and link them to unhealthy behaviours.³ Success in behavioural changes among adults, such as smoking cessation, has been explained by a conceptual model proposed by McBride et al.⁴ The model takes into account the

domains underlying a 'cueing event' that must be significant enough to motivate behavioural changes. These cueing events create a disposition for behavioural changes based on the patient's emotional response, and these types of events occur frequently in a hospital setting. For example, child's stay at the hospital can become an opportunity to engage the child and their family in educational discussion on strategies that promote positive health behavioural changes. Sophisticated information technology systems installed in hospitals allow interactive patient care systems, such as entertainment and patient education sections that can be accessed 24 hours a day during a patient's hospital stay. Educational material productions rarely compete effectively with entertainment material, however, resulting in patient preference for movies, videogames, television shows, etc to pass the time.

The entertainment media industry is a part of a powerful industry that rarely spends resources to produce entertaining

educational media. In fact, for young children, who are at an age when the ability to influence and model future behaviours is very prominent, the production of educational programs is very limited. Perhaps one of the reasons why the entertainment industry has not become involved in producing educational entertaining media is because of the complexity involved in the production of health education material. While it is easy to gain viewers' attention with material that often promotes unhealthy behaviours, educational material requires modelling positive behaviours while also being entertaining in order to reach and benefit viewers.

Strategies to succeed in educational entertainment must consider in-depth aspects related to the scope of health education and its unique attributes. Health education differs from traditional education because it requires behavioural modification in addition to knowledge acquisition. Given that the educational material needs to motivate viewers to adopt behavioural changes, a theoretical foundation needs to be considered during the design and production of the material.

Social learning theory provides a reference framework during the design process to attain behavioural changes.⁵ Social learning theory is based on the concept that modelling influences learning through informative functions.^{6,7} Observers acquire symbolic representations of modelled activities, which are governed by four interrelated subprocesses: attentional, cognitive representation, behavioural and motivational.⁸

The attentional process component suggests that learning occurs by the observation of essential features of the model's behaviour. Although not all models will be able to capture viewers' attention, undoubtedly the most relevant features of models are the ones that can capture more attention for extended periods. Media

models are very successful at capturing the viewers' attention in order to teach the depicted behaviour and do so without requiring any extra incentives.⁹ Cognitive representation process is maintained longer when the desired behaviour is retained in a memory of the symbolic representation of the behaviour. Model behaviours are transformed into images and verbal symbols, which serve as guides for reproducing the behaviour. This sophisticated system of coding activities into symbols, words, concise labels, or vivid imagery can help the viewer reproduce the model behaviour, even in different situations that are not related to the initial behaviour. In addition, repetition through mental rehearsal of the situation increases retention.¹⁰ At a young age, imitative responses are evoked directly and immediately after the action, but at older ages, the imitative responses occur long after the behaviour has been observed. Behavioural process is conditioned to the symbolic representation of modelled activities that do not necessarily guarantee the modelled behaviour. Usually, learning occurs through approximations of new patterns of behaviour. These patterns are refined through self-corrective adjustments based on informative feedback from others and through successful performance. Motivational process suggests all learned modelling is converted into action that is conditioned by negative sanctions or positive incentives. Although sanctions on a negative behaviour might serve to discourage behavioural changes, the reinforcement of repeated positive responses will eventually encourage the persistence of the positive behaviour.

A model for achieving behavioural changes needs to consider all of these subprocesses, or any others in other theories, when designing educational material. The production of health education material needs to promote learning; as such, it is necessary to consider additional

theoretical-based models that can promote learning and that have a format well suited for an inpatient environment. A contemporary media production model, such as digital storytelling, includes a theoretical-based structure that can be easily used to promote learning in an inpatient setting.¹¹

Digital storytelling clips intended for educational purposes are stories that are presented by combining various types of multimedia (eg, computer-generated graphics and audio) and that can be presented on a website (eg, YouTube) or transferred to a DVD.¹² The model recommended by Lambert (2002)¹³ includes seven elements to achieve an effective production: 1) point of view, 2) a dramatic question, 3) emotional content, 4) economy, 5) pacing, 6) voice and 7) music. The first four elements are intended to help the design of the story, and the last three are used to improve the construction of the video.¹⁴ Point of view relates to a personal view of the story, as told by the narrator. The dramatic question represents a question that can hold the viewer's attention throughout the story and is resolved by the end of the story. Emotional content is based on the story's script and evokes emotion in the viewer. Economy refers to the length of the clip; ideally, the story and the solution should be resolved in a very short period (within a two- or three-minute clip). Good pacing should create a rhythm in the presentation of the story that holds the viewer's attention. Voice-over in these clips can help to produce meaning and intent with a very personal and emotional intensity contributing to make the story more interesting and involving. Music can add emphasis to the narrative, increasing the emotional intensity during different points of the story.

In addition to considering these models to achieve the learning component of health education, a media model of production should also facilitate the presentation of

the social learning model.¹⁵ Successful media models that achieve behavioural changes are those developed by advertising media experts who have strategies directed specifically to achieve behavioural changes (eg, to acquire a product or service). A model designed in 1898 for one of the most prominent advertising figures, Elias St. Elmo Lewis, includes a simple but effective structure to encompass the social learning model. The model proposed is known as the AIDA model (Attention, Interest, Desire, and Action model)^{16,17} and has proven to be the blueprint for effective transmission of messages, including cognitive (Attention and Interest), emotional (Desire), and conative stages (Action). These stages can be easily paired with social learning model subcomponents to produce health educational material that can effectively compete for viewer attention. Using these theoretical-based models can provide us with a framework for developing health educational material that can compete for the attention of the viewers and provides a stage to promote learning and behavioural changes.

VIGNETTE CONTENT AND CONSTRUCTION ACCORDING TO MODELS:

Vignettes were created as a two- to three-minute story narrated by a little girl; they begin using the social learning model by presenting a behaviour that even though is common among children is undesirable and can have social consequences. Modelling 'good behaviours' as opposed to 'bad behaviours' are presented. The construction of the script includes a *point of view*. It involves the perspective of a child that narrates the story acting with certain indifference while presenting the behaviour of 'other children'. A *dramatic question* occurs when the narration is interrupted by the same child now dressed as a super hero and asks, 'What is happening here?' *Emotional content* is

maintained throughout the story by focusing on situations that generate visual emotions. For example, a child who was hit is drawn 'feeling pain', being 'happy later on' when the bad behaviour presented is positively transformed. In addition, *emotional content* is presented when the hero protests with energy by shouting loudly, 'Wait a minute', 'What is happening here', 'I do not like this'. *Economy of the production* includes a limit on the time used to convey the desired message, considering a maximum of two to three minutes. *Pacing* includes keeping the story and production using a balance between all the elements used with an energetic rhythm that captures the audience at all times. Here, all the elements interact to produce a harmonious product. *Voice* used in productions needs to include a voice that matches the personality of the character presented. *Music and sound* as well as the voice need to complement each other to attain a complete balanced story. The four operations necessary for social learning to take place include attention, retention, motor reproduction and motivation,¹⁸
¹⁹ *Attention* means that *observers must pay attention to what is happening around them*. This process is influenced by characteristics of the model and includes how much one likes or identifies with the model. It is also influenced by characteristics of the observer, such as the observer's expectations or level of emotional arousal. According to Dr Bandura, attention occurs when the presentation is simple, distinctive, prevalent, useful and depicted positively. *Retention* refers to the idea that *one must be able to remember what one paid attention to*. Imagery and language are very important during this process because we store what we have seen from the model in the form of mental images or verbal descriptions. The observer can later bring up stored images or descriptions so that it can be reproduced in the observer's own behaviour. *Reproduction is a need to translate the images or descriptions into actual behaviour*. *Motivation*, as defined by Professor Bandura,

is a number of *factors that motivate imitation*, including past reinforcement, promised reinforcement and vicarious reinforcement. There are also negative motivations, which present reasons not to imitate someone. These reasons may include past punishment, promised punishment (threats), and vicarious punishment. These components match the AIDA model intrinsically to achieve the desired consideration of viewers to follow modelled behaviours. All these elements are included in the production during the development of the script and during the production.

Health education materials using these models have shown an effect on learning in both parents and medical residents.²⁰ Following this path in the digital world suggests possibilities to modify behaviours among small children with material uploaded to a social media outlet, specifically YouTube, in 2014. With over a billion users, YouTube is a global social network that was first launched in 2005 and receives millions of page views every day.²¹ In the last few years, the video production quality uploaded to YouTube has surpassed that of broadcast television.²² Statistics indicate that the health education material uploaded on YouTube in mid 2016, now receives around 55,446,025 views by today, with more than 36 million accumulated views and around 86,000 subscribers. Preliminary results indicate that these health education materials can compete with popular entertainment productions among children/parents/educators, with an empiric indication of possible behavioural changes through analysis of hundreds of comments on the media from the site.

CONCLUSION

Most of the benefits of health communication and prevention have been limited because of inequalities and disparities confronted by those most in need of effective educational and preventive

messages. Specifically, populations with reduced literacy, education, or language proficiency have reduced opportunities to benefit from traditional educational messages. This population includes minority groups as well as young parents with lower levels of education, literacy and language proficiency. In the hospital, parents may be more receptive to educational activities, which provides an invaluable opportunity to address different topics targeted specifically to this population. Health education material prepared without considering the competition and the target audience will invariably result in low interest and minimal views. Therefore, it is worthwhile to consider that perhaps the roadmap for success in the areas of preventive care and health education requires theoretical-based models of production to become successful. The possibilities for these types of presentations to be integrated into patient care systems are unlimited and should not be missed.

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