



## Comics as an Educational Tool on a Clinical Clerkship

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### Abstract

**Objectives** The authors investigated student satisfaction with the use of comics as an educational tool in clinical medical education.

**Methods** Students on a Psychiatry clinical clerkship reviewed educational comics at the time of orientation. End of clerkship surveys were utilized to assess students' perceptions about the usefulness of comics for their learning during the clerkship. Students' responses were qualitatively and quantitatively analyzed.

**Results** Eighty-four percent of students indicated that comics helped improve their understanding of clinical concepts, while approximately 80% felt that reviewing comics prior to each clerkship rotation helped ease transition into their assigned clinical service. Almost three quarters of all responders (74%) indicated that they were more likely to review preparatory material in comic form, as compared to other formats. Students found the comics easy to read, fun, and appreciated the concise presentation of information within them. Students also highlighted the limited amount of information presented as a relative weakness of the program.

**Conclusions** Comics may be utilized as an acceptable educational tool in clinical medical education.

**Keywords** Comics · Medical education · Psychiatry clerkship

Comics can be used to present educational material to students in a visually enriched format. Through recruitment of both linguistic and imagery systems, they may facilitate improved comprehension of material [1]. They may also effectively convey important concepts related to medical sciences as well as medical humanities [2–7]. Additionally, they have also been used in clinical care to obtain informed consent [8] and may have utility in influencing behavior [9]. Pilot data point towards their acceptance as a pre-reading resource by students in a pre-clinical course [10]. Comics have also been used in non-medical settings to demonstrate improved reading comprehension in lower performing students [1], thus highlighting the potential for conveying complex concepts to medical students who might otherwise struggle to grasp them. Recent publications have highlighted the need to harness the potential of this instructional medium [11, 12].

The Psychiatry clerkship at our institution is a 4-week-long core clinical experience undertaken by all medical students. At the onset of the clerkship, students are divided into four groups, with each group rotating within a different clinical service (Child Psychiatry, Consultation-Liaison, Adult Inpatient service, Outpatient Psychiatry service) weekly during the 4-week-long experience. During their pre-clinical curriculum in the year prior to the clerkship, all students receive didactics about a limited number of Psychiatric topics.

We acknowledged the limited amount of time available to students on each clinical service and identified the need to familiarize students with key clinical concepts prior to their rotation on that service. At the same time, we were also cognizant of the widely acknowledged issue of students' reluctance to engage in pre-reading prior to educational activities [13, 14], and the need to design an intervention with this potential limiting factor in mind. We therefore designed a program to evaluate the utility of comics as an educational tool on our clinical clerkship.

For our study, we investigated the question as to whether (or not) and how medical students would perceive comics as useful and acceptable tools in their education. We anticipated that medical students would perceive comics as useful and acceptable tools in their education.

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## Methods

To help ease students' transition into the various clinical services within the clerkship, we created a series of comics as pre-reading resources. Faculty peers, within the department of Psychiatry, reviewed the educational material. Feedback was also sought from a pre-clinical medical student. In total, three comics were created addressing topics within Consultation-Liaison Psychiatry, Child Psychiatry, and Adult Psychiatry. Each comic addressed commonly encountered clinical presentations/concepts pertinent to that service.

At the time of clerkship orientation, students were presented with comics corresponding to their allotted clinical service. The three comics were distributed amongst four groups of students (one each for Consultation-Liaison and Child Psychiatry, with the adult inpatient and the outpatient clinic groups receiving the same comic). All comics were also made available to students via a mobile application used for the clerkship allowing students to access these materials following orientation. At the end of the clerkship, students' opinions on the use of this educational method were solicited via an end-of-clerkship questionnaire, sent out through the Office of Medical Education. The questionnaire included three items assessing student perceptions of the comics, responses to which were provided on a Likert scale. These three items were (1) *Presentation of educational material in the form of comics enhanced my overall understanding of common psychiatric diagnostic concepts.* (2) *Reviewing educational material in the form of comics, prior to the start of each rotation, eased my transition into each clinical service.* (3) *As compared to reviewing preparatory material presented in other formats (such as book chapters, journal articles, and power point presentations), how likely are you to review preparatory material presented in comic form?*

Two additional questions required free text responses describing what students liked most and least respectively about the use of comics (*What did you like most about using comics as an educational tool?* and *What did you like least about using comics as an educational tool?*). To analyze the responses to these two questions, two of the authors read the responses, noted initial impressions, and, in discussion with each other, developed a coding scheme to classify the comments. One author then applied this coding scheme to all of the comments. Individual comments could receive more than one code if they included more than one concept represented by the coding scheme. In consultation with other authors, the coded concepts were further consolidated into a limited set of themes, and representative quotes were selected to illustrate each theme.

Analysis of these data was permitted as part of our institution's educational data registry (Institutional Review Board ID: 00000123).

## Results

A total of 120 students completed the clerkship during the academic year, of which 113 anonymous responses were received for the quantitative questions soliciting student perception of this program. A similar number of free text comments were received for the two questions enquiring about students' likes and dislikes pertaining to the use of comics. Eighty-four percent of responders ( $n = 95$ ) indicated that the comics helped improve their understanding of the concepts presented, while approximately 80% of responders ( $n = 90$ ) felt that reviewing comics prior to each rotation helped ease their transition into that particular service (these students expressed their preference by choosing the options *Agree* or *Strongly Agree* on the Likert scale, with the remaining students choosing between *Strongly Disagree*, *Disagree*, or *Neither Agree nor Disagree* as their preference, for both questions). Almost three quarters of all responders (74%,  $n = 84$ ) indicated that they were *Likely* or *Very Likely* to review preparatory material provided in this manner as compared to other formats (with others choosing either *Not at all likely*, *Moderately likely*, or *Slightly likely* as their response).

Qualitative analysis of free text comments yielded four themes. Two of these four themes (convenience of use, and manner of presentation of information) highlighted the positive aspects of comics, whereas the other two (adequacy and logistical issues) touched upon areas of student discontent with the program.

Students appreciated the convenience associated with the use of this medium, wherein they found material presented in this format succinct, fun, and easy to read and comprehend.

- “Learning was made more fun and enjoyable rather than giving us pages to read from a convoluted textbook.”
- “They were much more condensed than a book chapter or lecture, and highlighted the key points without distractions from less applicable information.”

Another theme that emerged was the manner in which information was presented. Learners highlighted the visual representation of material as a positive feature. Students also acknowledged this as a unique and creative way of presenting educational content.

- “There was less reading, and the images were easy to retain. A lot of studying I did for STEP1 involved Picmonic® or SketchyMicro®, which is along the same lines, and I feel I retained that STEP1 info the best. I would love more comic based resources in our education.”
- “They were creative! I'm not the type of person who likes to just sit and read a text book, so this was a nice alternative outlet for reviewing basic psychiatric principles.”

While describing shortcomings of the program, the most prominent theme pertinent to the use of comics was associated with the adequacy of this medium. Students frequently highlighted the perceived lack of depth and breadth of content conveyed through this medium, whereas a few also indicated preference for other types of review material.

- “The amount of material covered in the comics was basic and not entirely significant given the amount of material we needed to cover in the clerkship.”
- “Unfortunately, they weren’t as comprehensive as I would hope, albeit they did provide a creative overview of topics.”

The final theme highlighted logistical concerns about aspects of the program itself (although not directly pertinent to the use of comics themselves or their content). These included, having difficulty reading the comic on their smartphone screen and not being able to access the comic at certain sites (presumably after the orientation).

## Discussion

Our data indicate that students mostly considered comics favorably, with a majority indicating that comics were helpful in improving understanding of clinical concepts, and that they found comics relatively more helpful compared to traditional resources.

Comics may also be acceptable particularly when students perceive other forms of content delivery to be burdensome. Pre-class preparation is a critical component of the active learning paradigm. However, in spite its known benefits [13, 15], students seldom prepare in advance for a variety of reasons, including lack of time and the volume of material expected to be covered as part of pre-reading [13, 14]. Unprepared students may undermine efforts to effectively implement active learning strategies. The use of comics could encourage students to engage with pre-reading material, allowing meaningful participation in active learning environments. Our students noted a lack of depth as far as the content was concerned. This was deliberate on part of the authors who only sought to improve basic understanding of common diagnostic concepts. Comics have been used to convey more detailed information about a specific clinical topic, [10] suggesting that dissemination of more comprehensive information through their use is possible.

We also acknowledge certain limitations of our findings and advise that these be interpreted with caution. This program addressed a very specific educational need at one institution, and it cannot be assumed that these results would be readily applicable in other settings. Also, the comics were used in a limited fashion. It is not known if results would have

been similar with more widespread use of this method of instruction. While student perception of the program indicated an improvement in understanding of common diagnostic concepts presented in the comics, the study design did not allow a more robust and objective examination of the impact of comics on comprehension of presented material, particularly when compared to other more traditional forms of instruction.

In conclusion, our project demonstrates the feasibility of comics as an educational tool. Further studies are needed to explore this novel modality for exposing students to core educational content.

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## Ethical Considerations

Analysis of data presented in this article was permitted as part of our institution’s educational data registry (Institutional Review Board ID: 00000123).

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