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ORIGINAL RESEARCH

Hunting for Pearls: A Qualitative Analysis of the Reflections of Students Creating Psychiatric Podcasts

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Purpose: This paper aims to explore medical student experiences of creating a peer-to-peer psychiatry educational podcast.

Methods: During psychiatry placement, ten year-4 University of Bristol medical students created peer-educational multi-episode podcasts on psychiatric topics. Following completion, they submitted reflective essays on their experiences. Qualitative thematic analysis of these essays was completed by two independent authors. Following data familiarisation, authors independently generated codes that were collated into relevant themes. Upon reaching thematic saturation, findings were collated, and member checking was carried out to confirm the validity of findings.

Results: Themes included effective preparation, choosing content, podcast production, enhancing learning, the weight of responsibility and creating educational support networks. All students found podcast creation to be beneficial for personal learning.

Conclusion: Exploration of students' experiences creating podcasts can support clearer guidance for medical podcast production, providing opportunities for educators to optimise podcast creation efficiency and educational effectiveness.

Keywords: education, learning platform, podcasting

Introduction

Podcasting is a method of delivering audio information via a digital device, such as phone, laptop or tablet.[1] Origins of the podcast are attributed to a newspaper article entitled "Audible revolution" from 2004.[2] Podcast inception appears to have occurred as a circumscription of the radio, during the dawn of the internet and subsequent shifting media use.[3] Podcasts are largely accepted as simple to produce, with a potentially unlimited distribution capacity, and flexible and accessible listener control.[1] Until monetization of Apple subscriptions in 2021, podcasts were often free of charge.[3] These combined features allowed widespread podcast use to increase exponentially over the past two decades.[3] During this time, podcasts have been described as positive medical learning tools[1,4–7] and have gained popularity expeditiously within education, with their use growing in most clinical specialties.[1,8]

The General Medical Council quality assures all aspects of medical education in the UK. This includes undergraduate curriculums, and the educational resources being used to deliver teaching.[9] One criticism of podcasting within mainstream curricula is the lack of content appraisal. Attempts have been made to identify markers of quality in medical education podcasts. Quality evaluation tools for online educational resources within emergency medicine exist.[10] Furthermore, key factors found within effective podcasts have been summarized in the literature.[3] Six "tensions" have been proposed as immutable aspects of podcast creation since its inception.[3] Rime et al describe these paired dichotomies as the following:

1. Personalisation and Automation
2. Independent and Mainstream Production
3. Unique and Universal Content
4. Current Audience and Possible Demographic
5. Immersion and Interactivity
6. Art and Technology

The idea behind the "tensions" is that a balance must be maintained to produce an effective podcast. However, there is no gold standard for the creation and educational use of podcasting in psychiatry education.[11] Due to this perceived lack of quality assurance, podcasts are often sidelined as a "supplementary tool" for revision, rather than attaining their full potential as formal educational resources.[12–14] Conversely, students have highlighted podcasts as efficient tools for learning and increasing exposure to various medical specialties, factors especially pertinent for low-recruitment specialties.[15] Furthermore, the process of creating podcasts for other learners has been linked with improved student reading, writing and learning skills, as well as peer cohesiveness, engagement and humanity.[16–19]

Our paper aims to identify and share the learnings of medical students gained from their experience of creating peer-to-peer podcasts about psychiatry topics. By understanding the experiences of podcast creators, we offer unique insights into the world of podcasting. We will share our experiences and describe how these add to the discourse on podcast creation. In so doing, we hope to offer guidance for good-quality medical-student created podcast production.

Methods

As part of a student selected component (SSC), a group of 10 University of Bristol medical students produced a collection of podcasts. The SSC is a part of the undergraduate medical curriculum in the UK. In Bristol, this took the form of a placement where students could undertake a project, offered by a supervisor. The supervisor was usually a senior clinician or academic with a role in teaching in the medical school. Two students undertook the SSC at the end of year 4, and eight at the end of year 3. Six students opted to work in pairs, whereas four preferred to work individually. Students were tasked with choosing and researching a topic within psychiatry, to create a multi-episode educational podcast that could be used by their peers and future generations of students. For the students involved, this was their first experience of creating podcasts in medical education.

Upon completion of this project, students were asked to write a short essay reflecting on their experience. This was assessed as part of their SSC. The essays were stored on encrypted NHS computer hard drives. Only the authors of this paper and the individual essay authors had access to these. What was clear from the essays is that the students had learned a number of lessons from the experience of creating these podcasts and so were approached to have their work reviewed using a thematic analysis. This was a convenience sample. All those who were approached agreed to be involved in this study. To develop a greater understanding of creating podcasts for medical education, qualitative thematic analysis of these reflective essays was completed. Two researchers (EBG & RB) used an adaptation of the process outlined by Braun and Clarke,[20] as summarised in Figure 1. Prior to analysing the data, the authors first spent time engaging with the available literature on podcasting within medical education (a list of articles used for this purpose is outlined in Appendix: bibliography of grounding literature).

As per Braun and Clark, the authors started data analysis by immersing themselves in reflective essays, through repeated reading and note taking. They proceeded to independently generate codes from this data. Due to the relatively
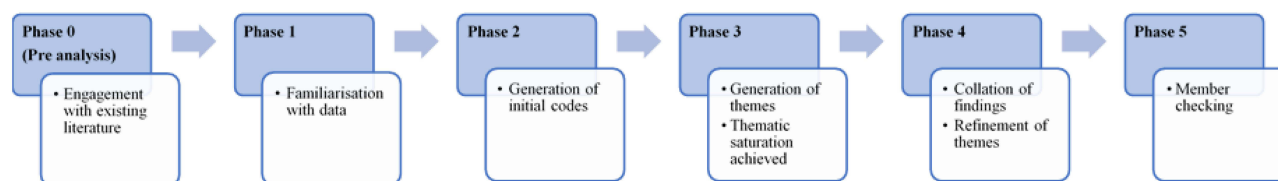
Figure 1 Process of thematic analysis, adapted from Braun and Clarke (2006).

small amount of data analysed, this was done manually, with no specific coding software required. These codes were then collated into potential themes, with ongoing review and refinement of the thematic map as analysis progressed. When both authors felt thematic saturation had been reached (when they were unable to generate any new code or theme from the entire data set), named themes were reviewed to ensure they accurately reflected the body of data.

At this point, the authors came together to discuss if commonalities were emerging. Findings were collated, with the aim of increasing the creditability and validity of the results by minimising any inherent bias from a single-researcher view point. Once a combined thematic map had been created, member checking was carried out to further validate the results. This involved going back to the authors of the reflective essays and presenting them with the proposed thematic map for their approval. All essay authors confirmed that themes proposed accurately reflected their experiences.

The themes produced are discussed, describing the experience of podcast production in the context of the wider medical education discourse. Using this approach, a set of "Pearls of Wisdom" was developed, in order to aid future novice student podcast creators.

This project received ethical approval through the University of Bristol's Faculty of Health Sciences Research Ethics Committee (OREMS Reference 8496).

Results

Analysis identified common themes as students expressed similar challenges in their reflective essays. These themes are individually discussed and explored below. From each theme, the authors have created "Pearls of Wisdom" and associated recommendations. These are summarised in Table 1 and aim to provide a useful guide for future student podcasters. The themes are set out diagrammatically in a thematic map in Figure 2. Themes sharing common characteristics are linked within the diagram.

Effective Time Management

There was an unanimous consensus that working hard from the beginning of the project helped to reduce the burden of work closer to the deadline. Students generally found the preliminary research and preparation phases very time-consuming; some recommended allowing weeks rather than days to collate the required information. The importance of sourcing interviewees early was stressed.

I massively underestimated the huge amount of preparation that is required in order to produce a podcast. [Essay 7]

The "labour intensive" [essay 4] production process, again, took longer than anticipated. In view of the lengthy preparation period, advice to "be prepared to record effectively" [essay 6] was shared. Those who were working as a pair found this could add an additional layer of logistical complexity to their project, by having to work within two schedules rather than one.

Thorough Preparation

When considering psychiatry, students employed a variety of techniques to aid their preparation. This included broad background reading using textbooks followed by more detailed literature searches for up-to-date research on their chosen topic. Some found this process straightforward, whereas others described getting "lost in a whirlpool of information" [essay 2] and struggled to differentiate fact vs an author's conjecture. When considering their podcasts, some students described feeling confused by the lack of consensus in the literature around how to produce these. Some students used this literature to aid understanding of how to produce a good-quality podcast. Others found listening to existing medical podcasts preferable, in order to consider what made them successful (or not).

Table 1 Pearls of Wisdom

"Pearls of Wisdom"	Summary	
Manage your time effectively	Each stage of podcast creation is time-consuming. Source interviewees early. Allow weeks rather than days for preparation.	
Prepare wisely	This can feel over-whelming but having a foundation of knowledge around the topic is essential. Preparation can be completed by reading textbooks, literature reviews and listening to existing medical podcasts. Less scripting creates a more natural result. A bullet point list or script outline is advised.	
What do you want to say?	Use of textbooks and the medical school curriculum can help determine content. Make content accessible. Allow more time for complex topics. Define and limit the topic.	
Enhancing Learning	How to get your content across	Develop format according to your individual style but remain consistent. Lecture style podcasts allow transfer of large amounts of information but are less engaging. Duration of 30 minutes is adequate.
	Not just what to say but how to say it	Listen to different styles to guide your own. Avoid influencing interviewee and aim to develop a rapport. Slow rate of speech and natural conservational tone is advised.
	Maximising listeners and learning	Well defined learning objectives can help create structure. Mock consultations or case studies improve realism. Repeating key messages and concluding at the end of the episode is advised. Visual supplementary materials can be considered.
	Connect with your listeners	Maintain a human connection with your audience. Consider use of personal anecdotes and humour. Find other creative ways to maintain a dialogue with learners eg question and answer sections or provision of contact details
How to manage the weight of responsibility	Use disclaimers for triggering content and state author affiliations. Provide references. Supervisor feedback and listening back aids quality assurance.	
Becoming a podcast producer	An independent lay editor is useful to provide alternative perspective. Edit recordings to target errors and improve listening. Audacity® is the recording and editing software of choice.	
You learn too!	Podcast creation is beneficial for learning too, both on the topic itself and for more general skills	
You are not alone	Make use of people around you. Supervisor input is vital to avoid errors. Expert and peer feedback is appreciated.	
Do not panic, you'll gain mastery by experience	With experience, the required skills are developed creating an enjoyable learning experience.	

It was noted that "the research and understanding required to freely discuss a topic is extensive" [essay 6]. However, the students agreed that "the host must have a sound knowledge of the subject" [essay 1]. Interviewees were chosen for their relevance to the podcast topic and students emphasised the importance of preparing the interviewee sufficiently.

There was a mix of opinions when it came to scripting. Most students found a lack of script helpful, however this led to more errors and thus a longer recording process. Producing an outline or bullet point list of areas to cover was suggested as a good compromise.
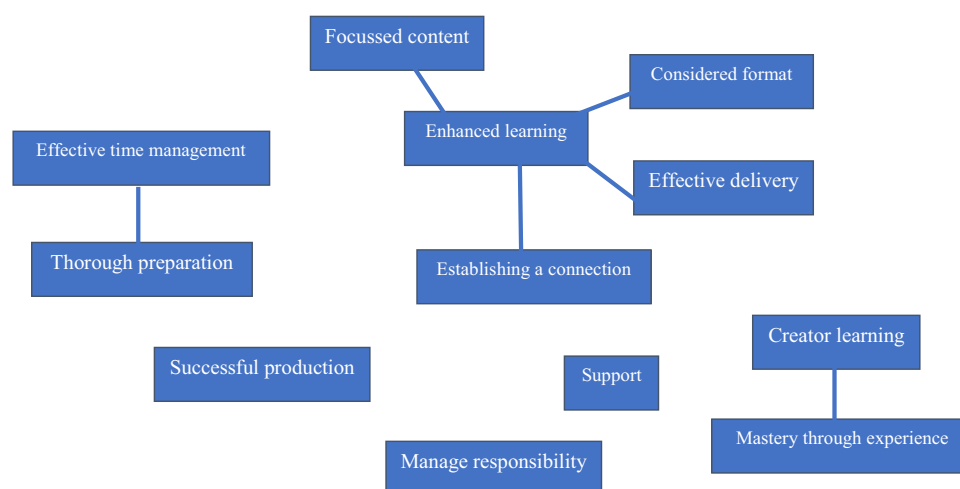
Figure 2 Thematic map.

Focussed Content

Students stressed the importance of choosing a topic that was interesting, relevant, and could "be understood and effectively conveyed without previous teaching" [essay 3].

Some used textbooks to explore different areas to consider, while others familiarised themselves with the medical school curriculum. It was felt important that the topic be "relevant for the target audience" [essay 1], and reflective of what medical students might be expected to know. It was important that the content was accessible and "neither too complex nor too basic" [essay 5].

Students found that some complex topics, and the amount of information to deliver, could feel overwhelming. Advisory starting points included "defining and limiting the topic" [essay 1] and identifying key areas to cover. Some wrote their own "need to know" lists. They advised allowing more time for complex topics to facilitate listener understanding.

Considered Format

The lack of agreement in existing literature meant that there was no "gold standard" format to follow. Students adopted various formats depending on their individual styles, but all reported the importance of consistency in format for each episode so that listeners "knew what to expect" [essay 1].

A dual hosting style created a "conversational podcast that flowed naturally" [essay 1]. Others decided to have "one section purely devoted to debate" [essay 5]. Existing research suggested an interview style was popular among medical students, therefore some students used this, which gave an expert perspective on a topic and stimulated discussion. Although the traditional lecture format was deemed less engaging by students, they felt it "set the scene" [essay 8] and allowed transfer of more information to introduce a topic.

Regarding duration, students aimed to create episodes lasting under 30 minutes to maintain listener focus. Some "began to think 30 minutes would not be long enough" [essay 2] but generally it was considered adequate "to impart a wealth of high-quality information but not excessively long" [essay 5].

Effective Delivery

The students considered delivery style pertinent. Some found listening to examples of different styles helpful to guide their own.

Those who used interviews within their podcasts thought about how best to frame their questions to avoid influencing the answers. They sought to "gain and demonstrate rapport with the interviewee" [essay 8].

Those who opted for a lecture style format felt "recording should not be too scripted" [essay 1], making an effort to make their voices sound "natural and engaging" [essay 3]. A more rigid script format felt "wooden" [essay 7]. Speaking slowly and allowing natural pauses during recording was considered important.

All students considered tone of voice. All valued a slow rate of speech and a natural, conversational tone. It was felt this helped "channel authenticity" [essay 2] and deliver information in a "more organic way" [essay 7].

Enhanced Learning

All students noted the importance of adapting the podcast to optimise learning. Methods used to achieve this varied.

"Well defined learning objectives" [essay 7] were laid out at the start of episodes to help provide a "clear, succinct outline" [essay 5] of podcast content. Some considered the use of alternative teaching styles, for example mock consultations or case studies, to make information more realistic and increase listener attention. Key messages were repeated throughout an episode to help with information retention, and an effort was made to "produce easily-digestible chunks of information" [essay 8]. The importance of providing easily accessible references was recognised.

Conclusions and key learning points were used at the end of episodes. Some episodes included details of further research or suggestions of further activities for the listener. Finally, some considered use of supplementary materials to connect with more visual learners, such as slides to accompany audio or an infographic summary.

Establishing a Connection

Some students were concerned that

> podcasts involve less interaction between teacher and student than a traditional lecture. As a result, students are unable to quickly and easily ask questions about the content, and lecturers cannot gauge understanding and engagement from both the non-verbal and verbal cues of their audience. [Essay 7]

Throughout the students' accounts, the importance of developing human connection with the audience was highlighted. Most students reflected on the need for a personal tone of voice. "I decided to channel authenticity and record natural conversations" [essay 2]. Others found the use of "personal anecdotes and humour" [essay 2] and the sharing of "personal experiences" [essay 5] useful. To continue the dialogue with learners, one student provided their email address; another included "question and answer sections" [essay 6] at the end of the podcasts.

Manage Responsibility

> Creating any educational tool comes with responsibility. [Essay 2]

This message was clearly felt by all 10 students. Students considered the safety of their listeners when discussing difficult topics such as suicide or self-harm. They recommended "explicitly acknowledging the potentially triggering nature of the episode on the listener" [essay 2]. Others provided a list of websites offering support and highlighted the importance of seeking help.

Students included a disclaimer at the start of their podcasts to make the aim and affiliation of the podcast material clear to the listener. They also wanted listeners to be aware which areas of their podcasts were fact, opinion, or debate. Providing references for shared information was considered useful.

The students were clear that supervisor feedback was invaluable in assuring quality and accuracy of their podcast material. Involving the supervisor early in the process, specifically prior to recording, was helpful to "refine certain details and remove areas of ambiguity" [essay 8].

Some students highlighted the importance of listening to their podcast in full, after recording, "to ensure information provided was clear and correct" [essay 9].

Successful Production

Students experienced the recording process differently: those with prior experience of recording found it quick and simple; others found it laborious.

> Editing was described as time-consuming. Students found value in a second or lay editor, to avoid the
>
> dangers of being your own editor which involve already understanding the subject of speech and therefore failing to implement enough pauses for the naïve listener. [Essay 2]

Recordings were edited to correct errors and to provide "the easiest listening experience" [essay 8].

All students recommended the recording and editing software, "Audacity." It was free, accessible, user-friendly, and produced good sound quality.

Creator Learning

Creator learning was present through each stage of production, with students reflecting that "podcasts are not only educational for the listener, but very advantageous for the creator also" [essay 6].

Some students commented on developing skills in critical appraisal. Others found podcasting "allowed me the luxury to explore a topic of interest and deepen my understanding of the content" [essay 4], leading to increased knowledge and confidence.

Students honed their competencies in delivering medical education, specifically through production of educational resources. Their computing, editing and podcast production skills improved, and "will be used again – if only to record my own revision tools for long journeys!" [essay 2] Students also reflected on a refinement in more general skills such as teamwork, communication, public speaking, and organisation.

Support

Students felt that support from others was essential. By including experts and peers in preparation, production and review processes, students were able to add value to their podcasts.

Supervisor input was vital, for example one pair of students did not send their script for supervisor review, which resulted in factual errors and a lengthy re-recording process. They recognised that "to save time and avoid such errors the script could have been sent to the supervisor prior to recording" [essay 1]. Feedback from peers and experts was also appreciated, offering "some excellent feedback points and perspectives that we were able to edit and incorporate into our podcast" [essay 6].

Students who worked in pairs reflected that "working with a partner added a lot of value to the project and we created a conversational podcast that flowed naturally" [essay 1]. Other benefits such as creating a dual-host format and sharing the workload were also identified. Challenges to paired working included the need for additional communication and establishing compromise.

Mastery Through Experience

At the beginning, students felt that "teaching a topic related to psychiatry was rather daunting" [essay 10]. They described uncertainty about how to format podcasts, create content from a plethora of sources and overcome a lack of confidence in their knowledge and experience. Despite these concerns, all students successfully completed their podcasts, employing the techniques described above.

Consistently, podcast production was seen as an enjoyable learning experience.

The "Pearls of Wisdom" created summarise the experiences of the student podcasters who took part in the study and provide an outline for others to follow and structure their preparations. Table 1 provides a short summary of each "pearl".

Discussion

Our paper aimed to explore student perspectives of creating peer–peer psychiatric educational podcasts. Our analysis identified a number of themes, which exist within the discourse around the development of podcasts in medical education. By specifically analysing the peer-to-peer perspective, new themes around what it means to create a good-quality podcast have emerged.

Many papers discuss the important yet time-consuming phase of thorough planning and preparation of the podcast.[21,22] Our qualitative analysis supported this observation and highlighted the importance of making allowances for busy schedules. Examples included underestimating the time required for the preparation phase, the difficulties

navigating two schedules in paired working, and the troublesome nature of sourcing interviewees within a set time period.

Decisions around the most effective format and length varied between students, which was representative of differing opinions in the literature.[22–24] The discourse surrounding format could be indicative of the individual styles and preferences of both the podcast creator and their audience. Even within our relatively small sample group, students adopted a range of formats. With the rising popularity of podcasts, one of the many advantages is the abundance of choice. When considering this in practice, a range of formats could be created in an educational series to appeal to a wide range of listeners and their preferred learning styles. Another advantage of this approach is that it provides the podcast creator scope to choose their preferred format, which is likely to lead to a more natural and authentic delivery. These traits were identified as important by our creators.

The students considered the delivery and tone of the podcast very important for engaging listeners, which is reflected in current literature.[25,26] Students similarly used techniques to enhance learning such as summaries, key learning points and learning objectives,[23] which can be easily replicated in practice.

New insights were identified in medical education podcast creation.

Students consistently reflected on the need to have a thorough understanding of the topic being discussed. Careful preparation of both the podcast content and how to put this to listeners in the most effective way was required. There was no consensus on the method of preparation and a multitude of sources were utilised including textbooks, research papers, and listening to existing medical education podcasts to ascertain what worked well. External support was welcomed and recommended by creators. The need for quality assurance was highlighted, through supervisor or peer review, especially during the planning process. The use of a lay editor, to help ensure appropriate pace and tone to the recording, was also endorsed.

The purpose of the project was for students to assume the role of educator and create podcasts for the benefit of their peers. However, in so doing, the students found the podcast production process itself a valuable medical education experience. It provided students with the opportunity to explore topics within the scope of their psychiatry curriculum in greater depth and honed more general skills including organisation and planning, time management and communication. The "Pearls of Wisdom" gleaned from our analysis are transferable to students seeking innovative ways to consolidate learning via podcasting, but also educators producing medical education podcasts. It is noted that students recommended a trigger warning for topics such as self-harm or suicide. By extension, it is worth noting that podcasts can provide opportunity for asynchronous learning,[27] allowing students to learn about more sensitive and possibly triggering topics in an individually paced time. The inclusion of a trigger warning might allow listeners to not only seek required support but given the podcast format, learn within a personally chosen safe environment.

All students described a daunting weight of responsibility that came with producing an educational resource. Students wanted to ensure they were producing something of quality, which was accurate and reliable, as well as entertaining. Current literature place importance on accurate and evidence-based content that is delivered in a concise fashion with avoidance of medical jargon.[28,29] In the students' reflections, the need for fact checking, and clear signposting to references was stressed, as well as the need to make it clear to listeners what was fact and what was opinion within a podcast episode. Although initially lacking confidence, all students mastered the processes involved in producing high-quality podcasts by the end of the project. This should provide reassurance to fellow novice podcasters who, with adequate time and preparation, will develop the skills required to produce their desired podcasts.

The importance of connecting with your listeners is a theme that also emerged during our analysis. There was consensus among students of the need to establish a human connection between the creator and their unseen audience. A number of creative solutions were adopted that emphasised the creator's individual personality through means such as personal anecdotes and humour. Lived experience and personal connection have been associated with a reduced stigma of addiction when used within podcasts.[27] Stigma-reduction is an important movement within psychiatry, suggesting podcasts may play a supportive role within this specialty.

Students additionally sought to facilitate ongoing communication with their audience, by providing email addresses or creating question and answer sections within their podcasts. Similarly, this connection appears to be of import to listeners also, where despite the passive listening experience podcasts offer listeners felt connected to a community, both locally amongst peers and seniors, and with the wider professional community. Podcasts drove connection within local faculties

through shared experience and recollection outside of the medium itself.[30] Benefits of human connection within podcasts are clearly acknowledged across the technological divide in both podcast creators and their audience. Creators should not only strive to connect directly with their listeners but also find innovative ways to indirectly foster connection on a more local level. Ways to achieve this might include encouraging sharing of the podcast amongst peers and offering unanswered questions and debate that continue discussion outside the podcasting medium.

For the production process, students unanimously endorsed the recording and editing software Audacity®, and recommended this to future producers as simple to use, of good quality, and freely available. Other software options were not explored or compared to Audacity® and this is a limitation of such endorsement.

Despite differences in technique utilised, the students' reflections had significant overlap and provided unique perspectives to consider for those researching future podcast production.

A significant limitation of the study was the small and homogeneous sample size. As a result, it may not be possible to extrapolate this data in order to apply its concepts more widely. Our study focussed solely on the insights of novice podcast producers with limited expertise in the specialty of psychiatry and therefore our recommendations are likely to be most applicable to podcasting beginners. It is likely that more nuanced insights may be gathered from the reflections of seasoned podcasters and those with greater knowledge of their subject matter.

Qualitative analysis of target audiences to understand what informs their choice of listening material and what the definition of a "good podcast" means to them would help to guide content and production. Gaining listener perspectives on how a connection can be established between the audience and the podcast content and its creators would add further value.

While our study provides recommendations and an outline for others to follow, it falls short of providing a "gold standard" guide to creating a top-quality podcast, meaning this gap in the literature still remains.

Conclusion

There is increasing evidence for the value of podcasts in medical education. Our study sought to offer advice and guidance to those who were planning to podcast in medical education. Its strengths lie in examining the peer-to-peer element of podcast production, with the use of robust and systematic qualitative analysis methodology including collation of findings by two independent researchers, and member checking. Using this approach, our study has identified several interesting themes around what was important to these students when producing their podcasts. There was evidence of agreement between students about the importance of some of these themes.

Of note, a number of the themes identified had already been identified in the literature. Our study adds some new themes into the discourse on podcasting for medical education. In addition, our paper offers a range of tips and ideas for would-be podcast producers, and we hope this will inspire a wider use of the technology. In our goal of exploring student experiences of creating educational podcasts, we have identified a number of potentially beneficial themes, however further research is needed to elucidate the importance of these.

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