



# The Prevalence of Use of FOAMED Sources Among Saudi Emergency Medicine Residents: A Cross Sectional Study

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## Abstract

**Introduction:** New technologies in the field of learning and teaching the various scopes of medicine are being embraced now more than ever by learners and students, understanding the changes, the requirements, and the need for such tools is essential in the process of providing the proper materials most efficiently. Understanding the shift from traditional use of resources to the use of FOAMED among Saudi emergency medicine residents is important in the implementation and improvement of contemporary FOAMED tools in Saudi Arabia. In this study we aim to investigate the phenomenon called FOAMED to improve its implementation and widen its scope. Although this is becoming popular, published articles investigating its driving factors among learners have been limited. **Methodology:** A cross sectional study among emergency medicine residents in Riyadh, Saudi Arabia; targeting 322 EM (emergency medicine) residents with a sample size of 175. An online questionnaire, previously validated and used by Jeff Riddell et. al (7), was sent to all the residents in all levels through email and WhatsApp groups from January 2020 to September 2020. Data were analyzed using the latest version of SPSS. The Research Ethics Committee at King Saud University Hospital approved the study (IRB No. E-20-5596). **Results:** Of the 322 EM residents in Riyadh, Saudi Arabia, 201 residents responded and completed the questionnaire with a response rate of 62.4% (201 out of 322). The two most commonly used podcasts are EMCrack with 18.1% (94/201) and EM: RAP with 11.7% (61/201) respectively. Nearly a third 29.4% (59/201) of the total number of respondents said that they do not listen to podcasts followed by 23.9% (48/201) who listen to podcasts once a month. For the ideal length of time for an emergency medicine podcast, 30.8% (n=62/201) answered 11-20 minutes, followed by 28.9% (n=58/201) who answered 21-30 minutes. The top two reasons why residents stopped listening were "It was too long" (35.7%, n = 105/201) as well as "It was too boring;" (27.6%, n = 81/356). Highest number of residents reported that their motivation to listen to EM podcasts is "Board Review" with 21.5% (n=87/201). **Conclusion:** The results of our study suggested that most residents preferred to listen to podcasts of less than 30 minutes in length, which was consistent with previous studies. The main motivation for listening to podcasts among EM residents was for "Board Review", which emphasizes the need to keep up with the newer and contemporary ways of learning among FOAMED creators in Saudi Arabia.

**Keywords:** Free open access medical education, FOAMED, Medical Podcasts, Emergency Medicine.

## Introduction

Free open access medical education (FOAMED) is defined as a community of open and free resources of learning and education set up in an interactive way to share knowledge [1]. The growth of the use of FOAMED resources among residents and physicians have been noted in many countries, studies have been conducted to investigate the details behind such popularity, as of a study done in 2013 concluded that more than 141 blogs and more than 42 podcasts identified were related to Emergency Medicine or Critical Care [2].

A 2015 study done in Canada revealed that 90% of residents were using podcasts at least monthly, and podcasts were ranked to

be among the top 3 resources for learning [3]. Moreover, in 2014, Mallin M, et. al, found in their survey of asynchronous learning among United States (U.S.) EM residents, that they spend more time listening to podcasts compared to traditional learning like textbooks and journals. Also, they felt that they are getting greater benefit from podcasts [4].

The aim of this cross-sectional study was to assess the prevalence of use of free open access medical education resources among emergency medicine residents. FOAMED is a growing trend among residents and we lack full understanding of the details and motives. The questionnaire used questions the residents' preferences of use and time taking, and measures the amount invested on such

resources to study this growing shift and change of knowledge sharing among residents.

Although the changes are vast and fast-paced in the field of emergency medicine in the US and Canada specifically regarding the use of online educational resources, in Saudi Arabia, no previous studies have been conducted to assess how prevalent and common they are among Saudi residents [5].

The assessment of the use of FOAMED among Saudi residents can help emergency medicine academic programs and future educational projects change and adjust to implement the new trends of newer generation of educational resources.

## Methods

The study setting took place in Riyadh, Saudi Arabia. It was designed as a cross-sectional observational study, and the data were collected using an online questionnaire, created via Google forms, that was validated in a previous study by Jeff Riddell et al [6], and permission to use was taken from the author.

The link to the online questionnaire was sent to the participants through Email and Whatsapp platforms with an explanation of the study and what it intends to investigate. The consent is implied upon completion of the online questionnaire and the responses were all anonymous.

The Research Ethics Committee at King Saud University Hospital approved the study (IRB No. E-20-5596) prior to data collection.

Our population consisted of all EM residents of all levels within the nine emergency medicine residency programs in Riyadh (n=320) during the academic year 2020-2021. We estimated that we need 175 respondents to reach a 95% confidence interval.

Data were exported from Google sheets to the latest version of SPSS and descriptive analysis of the data was done.

## Results

Of the 322 emergency medicine residents in Riyadh, Saudi Arabia, 201 residents responded and completed the questionnaire. With a response rate of 62.4% (201 out of 322) (shown in Table 1).

### Habit

The mean number of unique emergency medicine podcast programs subscribed or regularly listened by residents is 5.69 (SD=4.114). The two most commonly used podcasts are EMCrack with 18.1% (94/201) and EM: RAP with 11.7% (61/201) respectively (Appendix A). A greater number of respondents listen to the medical podcasts on their smartphone (shown in Fig. 1) with 59.8% (143/201) and almost half of the respondents listening to the podcast at 1x speed (49.3%, 99/201) (shown in Table 2). Respondents were asked, where do they find the emergency medicine podcast. 92 respondents (26.4%) find podcasts via word of mouth from other residents (shown in Fig. 2) followed by 84 (24.1%) who find them via recommendations from lecturers or faculty members. Almost a third of the total number of respondents 29.4% (59/201) said that they do not listen to podcasts followed by 23.9% (48/201) who listen to podcasts once a month.

### Attention

For the ideal length of time for an emergency medicine podcast, (shown in Fig. 3), 30.8% (n=62/201) answered 11-20 minutes, followed by 28.9% (n=58/201) who answered 21-30 minutes. When asked if they had ever stopped listening or turned off an EM podcast when they had more time to listen, the top three reasons why they stopped listening were "It was too long" (35.7%, n = 105/201); "It was too boring;" (27.6%, n = 81/356), and "It was not relevant" (11.9%, n = 35/201).

### Motivation

Of those residents who prefer podcasts over other available educational resources (textbooks, blogs, online video, peer-reviewed journals, etc.), they prefer them for ability to listen while doing something else (18.1%, n = 87/201), ease of use (15.6%, n = 75/201), and portability (13.9%, n = 67/201).

Only 6.2% (n=30/201) said they do not prefer podcasts over other educational resources, while 11.2% (n = 54/201) reported not listening to podcasts. Highest number of residents reported that their motivation to listen to EM podcasts is "Board Review" with 21.5% (n=87/201) followed by "keep up with current literature" and "learn emergency medicine content" with 20.0% each (n=81/201). When asked how much EM podcasts changed their clinical practice, 37.8% (n = 76/201) were neutral, 26.4% (n=53/201) said that their clinical practice has somewhat changed, 19.4% (39/201) said "not at all", 9.0% (n=18/201) said "not much" and 7.5% (15/201) said "very much" (shown in Table 3).

**Table 1: Demographics**

Participant demographics	Respondents (n=201)
Age (mean in year)	27.83
Gender	
Male	60.2% (n=121)
Female	39.8% (n=80)
Region of Saudi Arabia	
Central	94% (n=189)
Eastern	1% (n=2)
North	2% (n=4)
West	5% (n=5)
Hijaz	1% (n=1)
Year of training	
First year	34.8% (n=70)
Second year	19.4% (n=39)
Third year	26.9% (n=54)
Fourth year	18.9% (n=38)

**Table 2: Habits**

At what speed do you listen to your podcasts	Respondents (n=201)
1x	49.3% (n=99)
1.25x	12.4% (n=25)
1.5x	5% (n=10)
2x	1.5% (n=3)
>2x	1.5% (n=3)
Normal, don't speed them	0.5% (n=1)
N/A- I don't listen to podcast	29.4% (n=59)

**Table 3: Motivation**

How much do podcasts change your clinical practice	Respondents (n=201)
Not at all	19.4% (n=39)
Not Much	9.0% (n=18)
Neutral	37.8% (n=76)
Somewhat	26.4% (n=53)
Very Much	7.5% (n=15)

**Table 4: Motivation**

	Responses		Percent of Cases
	N	Percent	
Ease of use	75	15.6%	37.3%
Portability	67	13.9%	33.3%
Entertainment	47	9.8%	23.4%
Ability to listen while doing something else	87	18.1%	43.3%
Quality of educational content	40	8.3%	19.9%

Different perspectives on clinical topics in one resource	37	7.7%	18.4%
Current/relevant to your practice	44	9.1%	21.9%
N/A- I do not prefer podcasts over other educational resources	30	6.2%	14.9%
N/A – I don't listen to podcasts	54	11.2%	26.9%
Total	481	100.0%	239.3%

a. Dichotomy group tabulated at value 1.

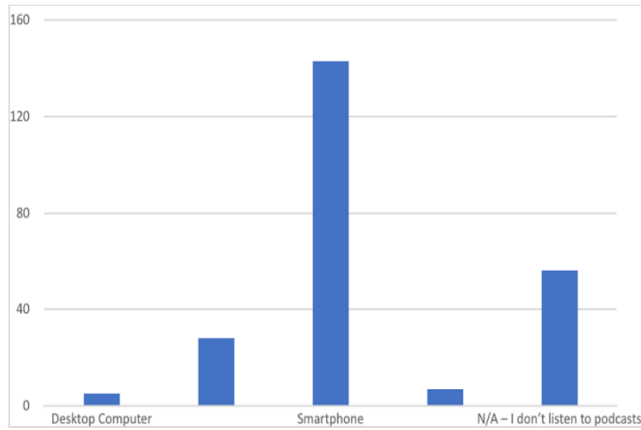


Figure 1: On what device do you listen to your podcasts?

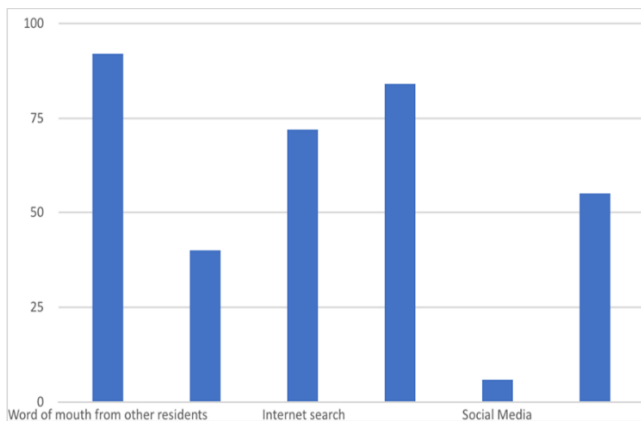


Figure 2: How do you find the emergency medicine?

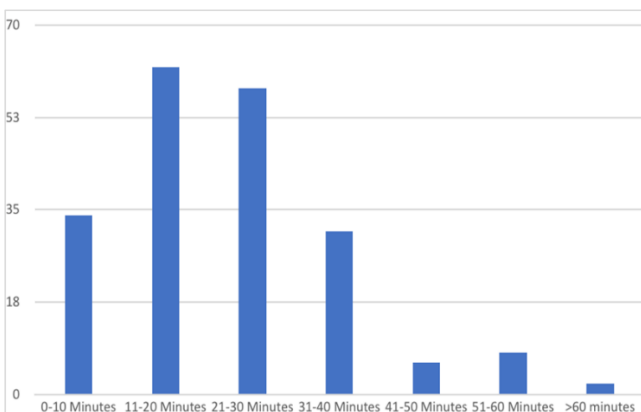


Figure 3: What is the ideal length of time for an emergency medicine podcast or podcast segment

## Discussion

Our data suggested that residents of emergency medicine in Riyadh, Saudi Arabia listen to emergency podcasts, and prefer podcasts shorter than 30 minutes long. Our data showed that residents had multiple motivational reasons for listening to podcasts.

Our results reported inconsistencies when compared to a previous Canadian study [6] in terms of prevalence of residents

listening to podcasts (88% vs 70%) in the Canadian study and our study, respectively. The two most commonly listened-to podcasts in our results were (EM: RAP) and (EMCrack) similar to previously done studies suggesting that the contents of these podcasts are more appealing to residents than other podcasts.

The results of our study suggested that the preferred length of podcasts (less than 30 minutes) is consistent with other international literature, and this should be taken into consideration by podcast creators given that one of the top reasons why residents stopped listening to podcasts was “It was too long” (35.7%).

“Board review” was the top agreed upon motivational reason to listen to podcasts among residents in Riyadh, Saudi Arabia. However, other international studies had different top motivational items compared to our study. This should be a driving factor for local podcast creators in Saudi Arabia to target creating contents that are important to residents in Saudi Arabia.

## Conclusion

FOAMED is an evolving educational source for learners in general as well as residents in emergency medicine specifically. Furthermore, FOAMED in Saudi Arabia could expand based on our findings of the characteristics that attract residents in listening to and following the podcasts. Research is required to investigate what further characteristics of FOAMED residents are interested in, and what challenges podcast creators are facing to deliver their content to their target audience.

## Limitations

The study had several limitations, one of which was the small sample size and the participants being from one city in Saudi Arabia. This limits our results to emergency residents only and not including other residency programs nor other levels of learners in Saudi Arabia.

## Declarations

## Statement of Ethics

This study protocol was reviewed and approved by the Research Ethics Committee at King Saud University Hospital approved the study (IRB No. E-20-5596) prior to data collection.

## Consent to Participate Statement

The consent in this study is implied upon completion of the online questionnaire and the responses were all anonymous and has been approved by the Research Ethics Committee at King Saud University Hospital.

## Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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## Author Contributions

Yasser Alaska, Ahmed Aloqayli, and Rakan Almogheer conceived of the presented idea, and collected data for analysis then assisted in interpretation of the results. Nawfal Algerian, Mohammed Arafat, Abdulrahman Aldhubib, Ibrahim Almohaimeed, Ali Alsultan, and Abdulaziz Alhosaini helped supervise the project. Bader AlRabiah, Sara AlBanyan, and Lyla Ashry helped to format, edit, and proofread. All authors discussed the results and commented on the manuscript.

## Data Availability Statement

All data generated or analyzed during this study are included in this article. Further inquiries can be directed to the corresponding author.

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