Evaluation of pregnancy-related information-seeking behaviour & utilising YouTube to innovatively deliver maternity information

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Background

- YouTube.com is a free video-streaming platform that shares content covering a variety of topics, including health information.
- It is the second most popular website globally after Google.com[1].
- It is widely accepted that the delivery of healthcare continues to evolve alongside the digital revolution.
- The Office for National Statistics (ONS) states that 67% of women access the internet to obtain health-related information[2].
- A valid concern with YouTube is the spread of misinformation.
- Individuals who may benefit from online pregnancy-related videos include non-English speakers and those with poor health literacy.
- Given the non-communicable disease crisis, preconception health could be considered an appropriate focus for awareness.

Aim

To investigate pregnancy-related information-seeking behaviours (ISBs) and establish a source of readily accessible, quality-assured information for individuals planning a pregnancy.

Methods

1. A content analysis of 84 pregnancy-related YouTube videos was initially performed.
   - Variables assessed included video source, viewer engagement and credibility according to Health On the Net Code of Conduct compliance.
2. A convenience sample of 11 healthcare professionals and 26 antenatal clinic patients was surveyed to explore ISBs and identify appropriate topics.
3. Following video design and production, patient feedback was obtained via short, structured interviews and Likert scale questions assessing variables such as video length, relevance, educational efficacy, and clarity.
4. A quality-improvement (QI) methodology was applied in the production of three preconception health videos.
5. Three feedback cycles occurred in correspondence to each video (n1=20; n2=15; n3=16).
6. Finally, YouTube analytics data was evaluated to assess parameters such as traffic source, audience demographics and viewer engagement.

Results

1. Content Analysis

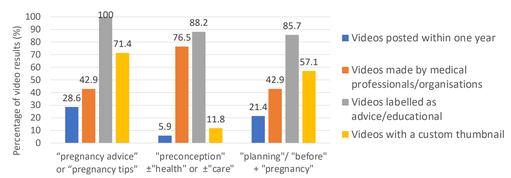


Fig.1: Percentage of video results per YouTube search entry categorized according to content source and type, upload date and the presence/absence of custom thumbnail

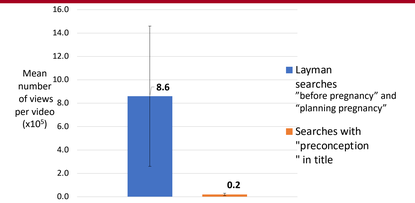


Fig.2: Mean number of views per video for layman search entries for preconception videos compared to the search entries containing "preconception" in the title. (Error bars represent SEM).

Videos with the term "preconception" in the title had a similar proportion of educational content/advice to the lay equivalents, however, this search group was the only category where most videos were sourced from medical professionals.

However, this category was also noted to have the lowest percentage of recent uploads and the lowest percentage of videos with custom thumbnails.

Fig. 2 also demonstrates that the layman searches elicited a higher mean number of views per video when compared to the "preconception" searches.

2. Preliminary Patient Survey

Fig. 3: Information-seeking attitudes towards YouTube (n=26)

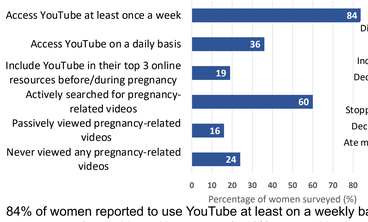
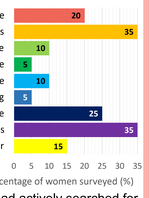


Fig.4: Preconception lifestyle changes reported in planned pregnancies (n=20)



84% of women reported to use YouTube at least on a weekly basis and 60% had actively searched for pregnancy-related videos. However, only 19% reported it as one of their top three online resources. Only 35% were taking folic acid/preconception supplements whilst trying to conceive, despite 80% stating that they made preconception lifestyle changes.

3. QI Methodology

The first video was primarily guided by staff input, the second video was primarily guided by patient input with particular emphasis on improving technical aspects (e.g. lighting and audio) and the final video incorporated a more balanced distribution between the two.

The second video incorporated popular trends noted from YouTube and received the most positive responses from patients with regards to attracting and maintaining interest.

The final video's topic was surrounding nutrition and supplements as decided by 73% of staff suggestions and the low level of awareness identified amongst survey participants (Fig.4). There was a marked improvement in the proportion of women who found the videos useful with each cycle.

	What is Pre-Conception Health – why is it important? |Pregnancy Planning|	6 Things You Should Know Before Planning a Pregnancy |Preconception Health|	Do I Need to Buy Expensive Multivitamin Supplements?! |Pregnancy Planning|
			
Length	04:56	5:59	04:50
Title	**58%** said it was interesting	**93%** said it was interesting	**63%** said it was interesting
Content	**73%** would have found it useful before pregnancy	**80%** would have found it useful before pregnancy	**87%** would have found it useful before pregnancy
	25% lost interest	**13%** lost interest	**19%** lost interest
	85% thought the length of the video was appropriate	**73%** thought the length of the video was appropriate	**68%** thought the length of the video was appropriate
	(n1=20)	**(n2=15)**	**(n3=16)**

4. YouTube Analytics

Fig.5: Traffic Source distribution for the most viewed video (n=106750)

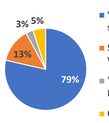


Fig.6: Number of views per Top 5 search entries associated with the most-viewed video



The most-viewed video was the second video (the final video was removed due to technical issues). 79% of the total views were from search entries by online users, with the most common search terms outlined in Fig.6.
84,332 views have been obtained by users selecting this video based on this information available: title, thumbnail, view count, video quality and description.

Conclusions

- YouTube is a valuable tool used to disseminate health information.
- Pregnancy-related videos from non-medical professionals dominate YouTube in both availability and viewer engagement but these videos are more likely to contain misinformation.
- Preconception health is an appropriate topic that can benefit from increased awareness.
- Although most women use YouTube on a regular basis and many have actively searched for pregnancy-related information on YouTube, only 19% considered it to be one of their top three online resources. This could suggest that this is a platform where the informational needs of these women are unmet.
- The title and thumbnail play an important role in attracting interest, but the video length along with the visual and technical aspects are important in maintaining interest.
- Healthcare professionals can utilise QI methodology and YouTube analytics to guide video production according to the video characteristics that perform most well amongst viewers.
- Medical professionals must effectively integrate with the platform and increase their presence online to avoid exposing patients to misinformation.

Future Work?

- We aim to continue video production by implementing a Plan-Do-Say-Act QI approach to more reliably associate each specific change with a subsequent effect.
- Following future video production, further YouTube metrics data can be generated to more accurately compare viewer engagement/retention.
- Audience demographics can be analysed with the possibility to investigate the effect of closed caption subtitles amongst non-native speakers.

1. Alexa Internet. YouTube.com Traffic Statistics [Internet]. 2022. Available from: https://alexa.com/siteinfo/youtube.com
2. Office for National Statistics. Internet Access – households and individuals. Great Britain: 2020. 2020.