# Cooking in megabits per second: A content analysis of food safety on YouTube

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## Introduction

From 1965 to 2009, the amount of meals Americans eat away from home has increased while time spent cooking at home has decreased (Smith et al., 2013). In spite of these trends, the majority of food energy consumed by Americans continues to come from the home, suggesting an increase in the home preparation of calorie-dense, processed food and less cooking with raw meats, fruits, and vegetables (Smith et al., 2013). With this knowledge and increasing concerns over obesity rates, medical professionals are calling for a return to home cooking (Wolfson & Bleich, 2015). Yet, a shift toward home-prepared meals with non-processed meat, fresh fruit, and vegetables is not without its own peril. Each of these may bring microbial pathogens into the home kitchen (Abadias et al., 2008). At the same time, we have seen a continued decline in enrollment in secondary education Family and Consumer Science programs, likely due to competition with core academic requirements (Danovich, 2018). With this lack of formal education opportunities, many Americans are turning to YouTube for skills training (Pew, 2018). Such "how-to" videos, including cooking demonstration videos, may help fill the gaps in an individual's knowledge base (Petrilli, 2019). YouTube was found to be a preferred method of learning cooking skills for men, younger people, university graduates (Worsley et al., 2014), and even food service workers (Soon & Baines, 2012).

## Purpose(s)/Objective(s)

The purpose of this study was to examine the food safety practices demonstrated on popular YouTube cooking demonstration videos and to determine which selected YouTube cooking demonstration channels demonstrate best practices related to food safety.

## Methods/Procedures

Five YouTube channels were selected for study based on a criteria of cooking-demonstration content, original content, and total subscribers: Binging with Babish (6.6M subscribers), Maanchi (4.3M subscribers), Laura in the Kitchen (3.6M subscribers), Food Wishes (3.4M subscribers), and You Suck at Cooking (2.1M subscribers). A list was compiled with 10 of the most viewed videos for each selected channel. Each of the resulting 50 videos was then placed in a Qualtrics instrument with an established food-safety coding instrument (Irlbeck et al., 2009) which included five positive behaviors and five negative behaviors. Selected channel videos received a score of 1 for each positive behavior and a score of -1 for each negative behavior. With this coding system, a video demonstrating all identified positive behaviors and none of the identified negative behaviors would receive a mean score of 0.5. A video demonstrating all negative behaviors and none of the positive behaviors would receive a mean score of -0.5. The research team coded the initial five videos together to ensure consistent coding. The resulting data were processed with IBM's SPSS software. The Krippendorff's alpha test (Hayes & Krippendorff, 2007) was used to estimate inter-coder reliability. The results ($\alpha = 0.67$) indicate a low, but acceptable (Krippendorff, 2004), level of agreement between coders.

## Results/Findings

This study sought to determine which selected YouTube cooking demonstration channels demonstrate best practices related to food safety. The compiled score for each channel's combined observations is shown in Table 1. Maangchi was identified as the most food safe channel ($M$ = .08, $SD$ = .06) while Laura in the Kitchen also received a net positive score ($M$ = -.01, $SD$ = .04). Food Wishes ($M$ = -.03, $SD$ = .01), Binging with Babish ($M$ = -.04, $SD$ = .04), and You Suck at Cooking ($M$ = -.04, $SD$ = .02) each held a negative channel score.

Table 1

*Inter-coded mean scores of individual channels for food safety practices*

| YouTube Channel | *M* | *SD* |
|---|---|---|
| Maangchi | .08 | .06 |
| Laura in the Kitchen | -.01 | .04 |
| Food Wishes | -.03 | .01 |
| Binging with Babish | -.04 | .04 |
| You Suck at Cooking | -.04 | .02 |

## Conclusions / Implications / Recommendations

The results of this study show that food safety cues, both positive and negative, are largely absent in popular YouTube cooking demonstration videos. Relying on extensive knowledge of video production techniques and the assumption that all hands, utensils, cutting boards, and cookware were clean at the beginning of these videos, one may conclude that better food safety techniques are being employed in these kitchens than make the final edited video. The top-rated channel from this study was Maangchi, which stood out to coders for visibly washing equipment and vegetables on camera in multiple videos, yet even here these activities were not shown in every instance. Similarly, the most common negative behavior, sampling food/licking fingers, was not universally observed for any channel. These common inconsistencies point to video editing which may mask both good and bad behaviors. The narrow distribution of net scores (+.08 to -.04) around a neutral point (0) suggest not variety in the programming so much as a general disinterest in discussing food safety.

As these videos are independently produced, there are only limited ways in which those promoting food safety may influence their content. However, they do offer an immediate pathway for food safety education. The channels examined in this study are each monetized, which means ad buys are possible. Organizations with an interest in promoting food safety (including the USDA, FDA, CDC, state Extension and CareerTech programs, and non-profit agencies) could produce short videos directly offering food safety tips, online resources, and in-person classes, making targeted ad buys on these and similar channels.

## References


Abadias, M., Usall, J., Anguera, M., Solsona, C., & Viñas, I. (2008). Microbiological quality of fresh, minimally-processed fruit and vegetables, and sprouts from retail establishments. *International Journal of Food Microbiology, 123*(1-2), 121-129. https://doi.org/10.1016/j.ijfoodmicro.2007.12.013

Danovich, T. (2018, June 14). Despite a revamped focus on real-life skills, "home ec" classes fade away. NPR. https://www.npr.org/sections/thesalt/2018/06/14/618329461/despite-a-revamped-focus-on-real-life-skills-home-ec-classes-fade-away

Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures, 1*, 77-89. http://afhayes.com/public/kalpha.pdf

Irlbeck, E., Akers, C., & Brashears, M. (2009). A Content Analysis of Food Safety Measures on Television's Food Network. *Food Protection Trends, 29*(1), 16-20. https://search-proquest-com.lib-e2.lib.ttu.edu/docview/231013549

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. Thousand Oaks, California: Sage.

Petrilli, M. (2019). From Cat Videos and Cooking Tips to the History of the Punic Wars. *Education Next, 19*(1). https://search-proquest-com.lib-e2.lib.ttu.edu/docview/2161053826

Pew Research Center. (2018, November). Many turn to YouTube for children's content, news, how-to lessons. [Report]. https://www.pewresearch.org/internet/wp-content/uploads/sites/9/2018/11/PI_2018.11.07_youtube_FINAL.pdf

Smith, L., Ng, S., & Popkin, B. (2013). Trends in US home food preparation and consumption: Analysis of national nutrition surveys and time use studies from 1965-1966 to 2007-2008. *Nutrition Journal, 12*(1), 45. https://doi.org/10.1186/1475-2891-12-45

Soon, J., & Baines, R. (2012). Food safety training and evaluation of handwashing intention among fresh produce farm workers. *Food Control, 23*(2), 437-448. https://doi.org/10.1016/j.foodcont.2011.08.012

Wolfson, J. A., & Bleich, S. N. (2015). Is cooking at home associated with better diet quality or weight-loss intention? *Public Health Nutrition, 18*(8), 1397-1406. http://dx.doi.org.lib-e2.lib.ttu.edu/10.1017/S1368980014001943

Worsley, A., Wang, W., Ismail, S., & Ridley, S. (2014). Consumers' interest in learning about cooking: The influence of age, gender and education. *International Journal of Consumer Studies, 38*(3), 258-264. https://doi-org.lib-e2.lib.ttu.edu/10.1111/ijcs.12089