Young Melanoma: Facebook and Family
Analyzing Engagement with Content Related to Melanoma on Facebook

Sofia Sepulveda Pizarro, Class of 2026, Molecular Biology Department
Cancer Institute of New Jersey, Rutgers University, NJ
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Introduction

• Dr. Manne and her team work on different research projects with the aim to improve cancer survivorship and education.

• The Young Melanoma study is an online intervention for melanoma survivors and their first-degree relatives (FDRs) through Facebook.

Objective

• To investigate the efficacy of the Melanoma Family Project intervention versus the Healthy Lifestyle Project intervention on melanoma prevention behaviors such as total cutaneous exams, skin self-exam frequency and comprehensiveness, and sun protection practices of FDRs of young melanoma survivors, who have an elevated risk for melanoma.

Methods

• The study consisted of the completion of a baseline survey asking about melanoma prevention behaviors followed by participation in one of two randomly-assigned private Facebook groups.

• Two posts were posted per day for the 12 weeks of the study. Posts ranged from polls to photos with questions related to the intervention theme.

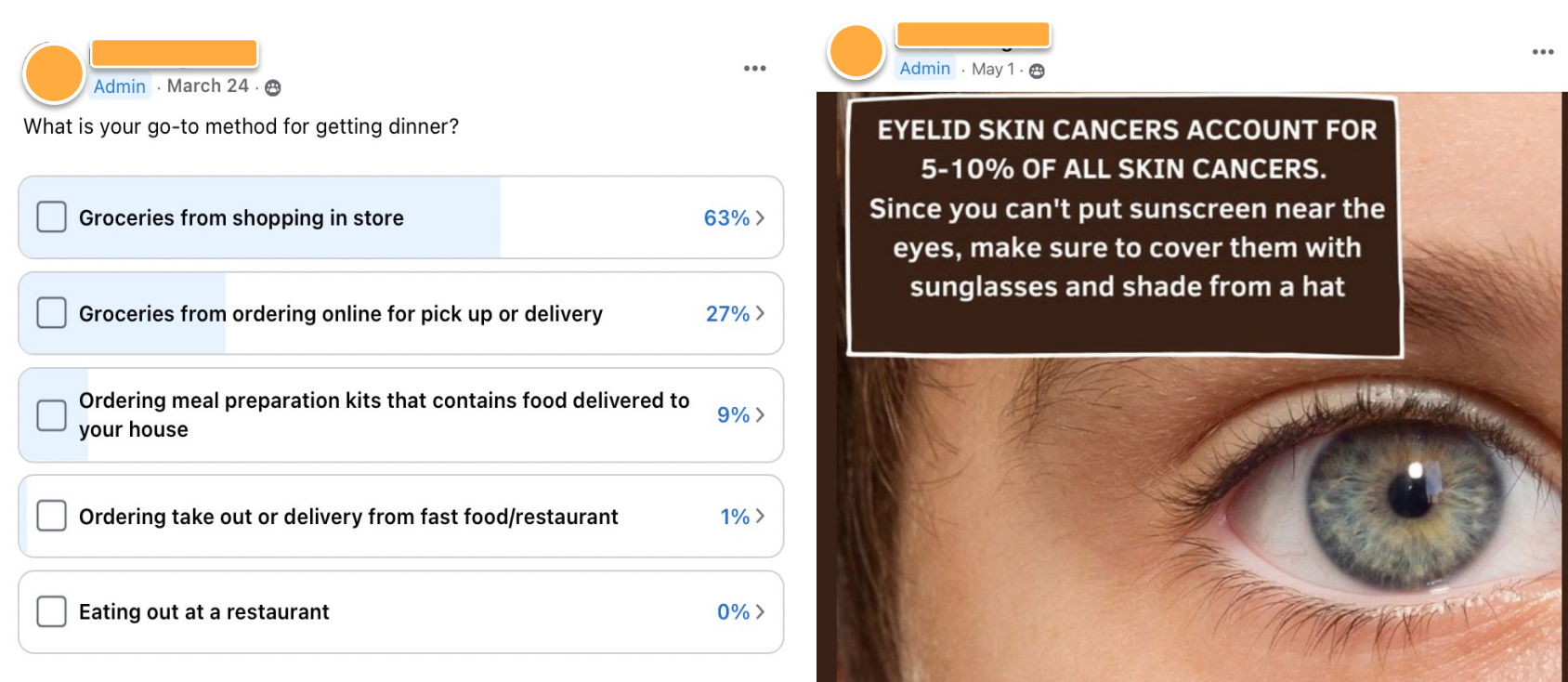• I verified engagement data acquired from Facebook, which included comments, reactions, and replies.

Figure 1: Sample posts from study. Status poll (left) and Photo (right).

Results

Group	N	Mean	Standard Deviation
Control:	381	7.67	14.070
Intervention:	390	9.59	17.907

Cohen's d	-0.119
Independent t-test for equality of means p-value:	0.049

Figure 2: Statistics for the *total number of reactions* per participant (N) for the Healthy Lifestyle Project (Control) and the Melanoma Family Project (Intervention) groups in waves 1-8.
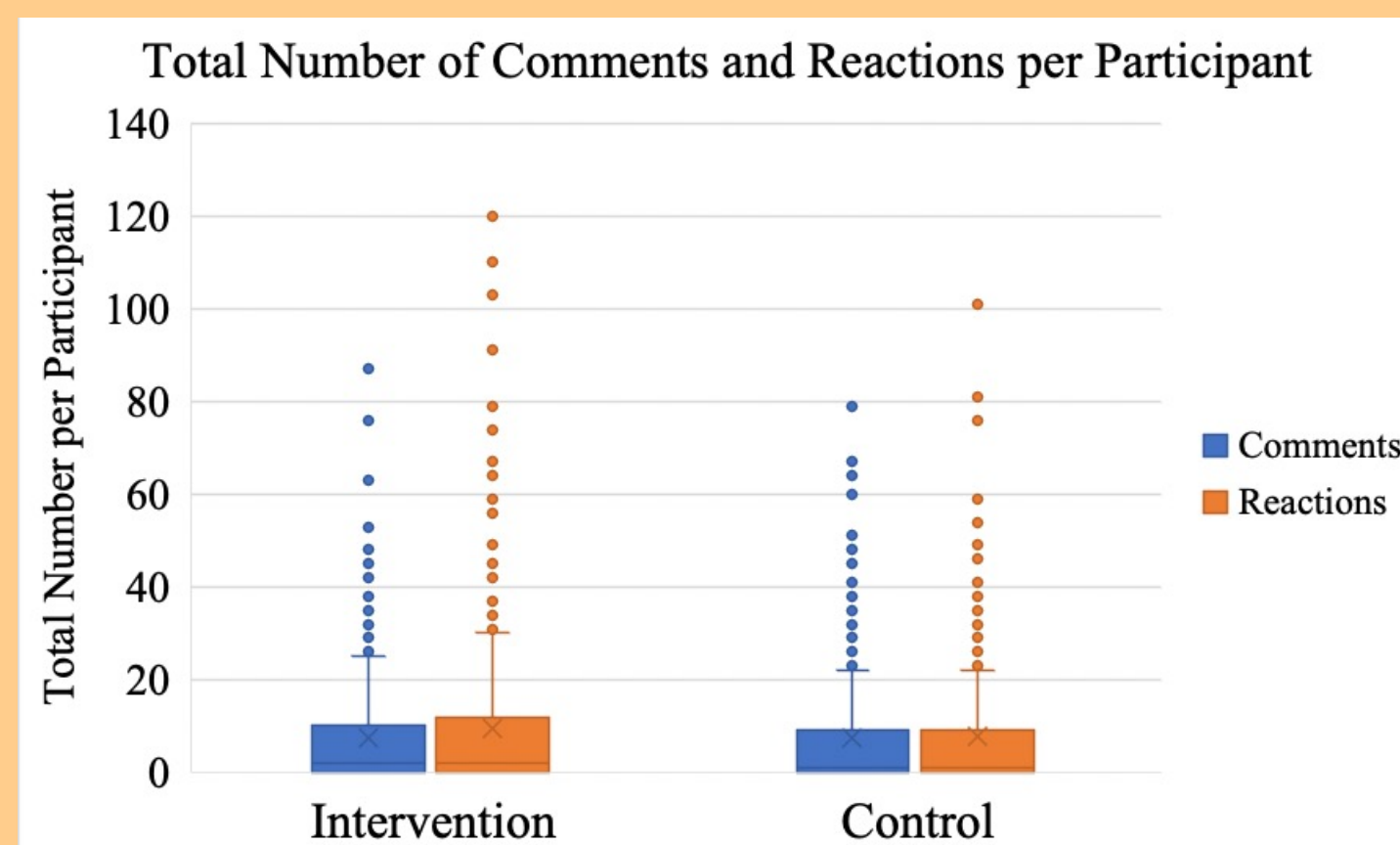

Figure 3: Boxplot of the total number of comments (blue) and reactions (orange) posted per each participant in the intervention and control groups in waves 1-8

• On average, the engagement score of photo posts in both groups in wave 9 was higher than that of the status posts. Photo and status post types were the two most common types for both groups.

• There is a less than 1% chance that the mean difference in the engagement score of the two different post types is due to random chance.

• The effect size is large according to Cohen's d, indicating that 69.5% of the engagement score for photo posts in both groups is above the mean engagement score of status posts.

• On average, the total number of reactions made by participants in the intervention group was higher than that of the participants in the control group in waves 1-8.

• There is a less than 5% chance that the mean difference in the total reactions per participants in the two groups is due to random chance.

• The effect size is notable according to Cohen's d, indicating that 54.7% of the intervention group's reactions per participant data is above the mean number of reactions per participant of the control group.
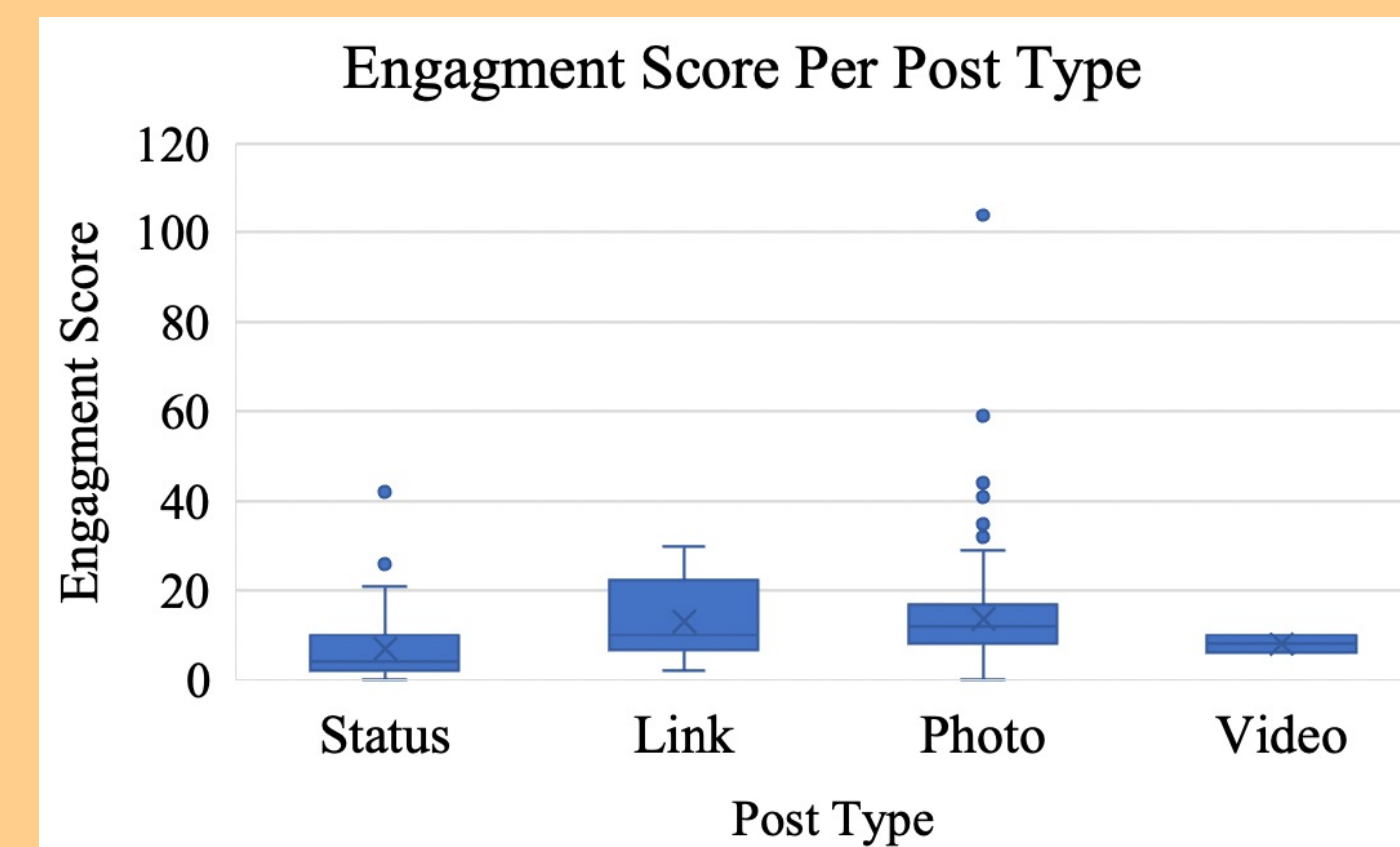

Figure 4: Boxplot of the engagement score for each of the posts on both groups in wave 9 of the study. *Engagement score = (2*comments + reactions/posts)*

Post Type	N	Mean	Standard Deviation
Photo:	166	13.49	11.380
Status:	34	7.26	9.404

Cohen's d	0.562
Independent t-test for equality of means p-value:	0.002

Figure 5: Statistics for the *engagement score* per post (N) for Photo and Status post types in both the intervention and control group during wave 9. *Engagement score = (2*comments + reactions/posts)*

Discussion

• Participants in the Melanoma Family Project group might feel the content is relevant, as they have a high risk for melanoma, whereas those in the Healthy Lifestyle Project group might have less of an interest for the more general topics of that group, such as sleep and diets.

• Posts were likelier to be on feeds of those who previously engaged with similar posts due to the algorithm, potentially affecting engagement results.

• Higher engagement with photo posts suggests that posting photos with questions in future Facebook interventions could receive more engagement.

Questions

• How could the effects of the Facebook algorithm on engagement be minimized when designing a study?

• How would overall engagement results change if only photo posts were used for both groups?

Conclusion

• The study is limited by the group moderators in the engagement data, Facebook's tagging of polls and text-only posts as status, and pre-existing family relations between group participants. On average, the Melanoma Family Project Facebook intervention engaged FDRs of young melanoma survivors with content more than the Healthy Lifestyle Project control intervention. Photo posts generally received a higher engagement score from the participants than other post types did.

Acknowledgments