Supplement Table 1. Outcomes Measures and Effects of Social Media Interventions on Study Outcomes (Study N = 18).

| 1st Author/yr. | Data Analysis | Outcome Measures | Results |
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| Primary Aim: To Provide Cancer Related Knowledge | | | |
| Justice-Gardiner et al. (2012)28 | Descriptive analysis.  No statistical significance testing. | -Total pageviews.  -Average pageviews.  -Total unique visitors.  -Total repeat visitors of campaign website. | -In intervention group, a 238% increase in unique visitors, 459% increase in total pageviews, increase average pageview time +1.12sec, 251% increase in total repeat visitors. |
| Alexander et al. (2013)27 | Descriptive analysis.  No statistical significance testing. | -Population of receivers.  -A media placement as a measure of coverage, defined as a cancer story or segment in article, video, or audio format—which is posted in social media. | -The majorities of receivers were African-Americans (59%) and Hispanics (37%).  -Media placements increased from 282 placements from the inception of the social media intervention program in the fall of 2008 to 3,390 placements through the end of 2012.  -The majority of African Americans (71 %) and Hispanics (72 %) reported using social networking sites (especially, Twitter) than other minority groups. |
| Bottorff et al. (2014)18 | Descriptive analysis.  No statistical significance testing. | -Evaluation for the video contents with a 5-Likert scale (e.g., features of the video, lesson learned, attitudes towards sharing the video with friends and family, and knowledge for smoking and breast cancer risk).  -Youth responses to the social media video, with narrative comments and open-ended question. | -The overall positive responses by girls and boys to their respective videos.  -Youth reported interests in sharing these videos via social networking.  -Social media approach holds potential for other types of health promotion messaging targeting youth. |
| Attai et al. (2015)25 | McNemar test | -The levels of understanding for the contents of social media related to breast cancer, anxiety, Twitter engagement.  -Safety and comfort of participation and motivation toward future advocacy and volunteer activities with a 5-Likert scale. | -Increased knowledge about breast cancer in the following domains (% of participants): overall knowledge (80.9%), survivorship (85.7%), metastatic breast cancer (79.4%), cancer types and biology (70.9%), clinical trials and research (66.1%), treatment options (55.6%), breast imaging (56.6%), genetic testing and risk assessment (53.9%), and radiotherapy (43.4%).  -71.9% participants reported increased their outreach and advocacy efforts.  -67% participants with “high or extreme” anxiety reported “low or no” anxiety after participation (p <.001). |
| Cooper et al. (2016)21 | Descriptive analysis.  No statistical significance testing. | -Impression: # of times that pre-roll videos played & keyword-targeted listings appeared.  -Views: # of times that videos viewed < 5s, or the users initiated playing videos in keywords targeted playing list.  -Cost per view, Portion of video viewed. | -Impression: 9,216,056 (pre-roll videos), 15,322,437 (keyword-targeted listings).  -CDC videos in advertisements played completely in 17.0% of pre-roll video views and 44.4% of keyword-targeted listing views.  -Cost per view: $ 0.09 (pre-roll videos), $ 0.31 (keyword-targeted listings). |
| Gnagnarella et al. (2016)33 | Non-parametric Wilcoxon’s test or Kruskal–Wallis test | -Health lifestyle, eating, nutrition and cancer knowledge, food habits with a 20-item Nutrition Questionnaire, 4-Likert scale.  - QOL with 100 points QOL Questionnaire.  -Depression and Anxiety with 13-item Psychological Distress Inventory (PDI), 5-Likert scale. | -Comparisons from baseline to 6-month post intervention.  -Nutritional Questionnaire: ‘nutrition and cancer knowledge’ item showed large improvement after 6-month Intervention (+4.7 point), control (+6.5 point) (p = .51).  -Overall QOL scores increased in both groups: Intervention (+2.8 point), Control (+3.5 point) (p =.087).  -Improvement of psychological distress in both groups: Intervention (-0.2 point), Control (-1.7 point) (p = .42). |
| Heo et al. (2016)20 | Descriptive analysis.  No statistical significance testing. | -View count.  -Average viewing time (min).  -Running time (min).  -# of ‘likes’. | -Most viewed videos: Chemotherapy (36%) and balanced diet habits related video (23.5%).  -USA, Canada, and other Asian countries also viewed YouTube videos (12% of total 13,433 views). |
| Kang et al. (2016)30 | T-test, Chi-square, Fisher exact test, Cochran-Mantel-Haenszel χ2 test or Analysis of Variance (ANOVA). | -Rate of adequate bowel preparation defined as a total Ottawa score < 6.  -Adenoma detection rate.  -Cecal intubation rate and time.  -Rate of incomplete compliance with instructions.  -Willingness to repeat bowel preparation. | -Higher proportion of patients of adequate bowel preparation in intervention (82.2%) vs 69.5% in controls, (p < .001).  -Among patients with successful colonoscopies, better bowel preparation in the intervention (p < .05).  -Higher proportion of patients of successful cecal intubation in intervention (97.2% vs 93.2% in controls, p = .014) and of having adenoma detection (18.6% vs 12.0% in controls, p = .012).  -Instruction via WeChat, in conjunction with regular instructions, increased quality of colonoscopy. |
| Lauckner et al. (2016)22 | ANOVA,  Linear regression | -Types and Times of viewing social media.  -Cancer knowledge scores with a 5-Likert scale.  -Message recall survey with 8 multiple choices.  -Attitude for reducing cancer risk with a 7-Like scale. | -Facebook was the most popular and frequently used form of social media.  -YouTube led to significantly higher recall of cancer related knowledge (mean 3.67) compared to Twitter (mean 3.11) with p <.05.  -YouTube (mean 5.93) showed stronger attitude for reducing cancer risk than Twitter (no data reported) and Facebook (mean 5.65). (p <.05). |
| Pagoto et al. (2016)17 | Structured equation modeling | -Mothers' permissiveness regarding their teenage daughters' use of indoor tanning, Daughters' perception of their mothers' permissiveness, Indoor tanning by both mothers and daughters with 4 & 7 Likert-scales, open-ended item, and # of web server click to support bans on indoor tanning.  -General health behaviors with 19 questions about general health behavior (e.g., diet, exercise, alcohol, smoke, human papillomavirus vaccination).  -Mother’s engagement rate with # of posts, comments, likes, and views with the Health Chat program, discussion forms activities. (Study is not completed, still is conducted, thus no result is published). | |
| Theiss et al. (2016)13 | Linear regression | -Analyzed data: Women’s posts on the CDC breast cancer Facebook page: Total posts N = 574 (posts utilized campaign related contents N = 195, posts non-related campaign contents N = 379).  -Engagement rate (ER): Among the posts on the CBC breast cancer Facebook page, # of unique users that liked, clicked, shared, and commented, divided by the # of unique users reached (who received the campaigns via Facebook).  -# of posts utilized campaign contents and non-campaign related posts, Type of post (video, status/link, and photos), Time of day, Year posted. | -Higher ER was shown in the campaign-related posts (ER 6.4 vs. 5.5 in non-campaign related posts) (p = .095).  -Postings with photos (p < .0001) and early AM and 2-6PM (p = 0.87 to 0.080) were the most effective way of change in ER.  -Post shared in 2014 had the highest ER 6.9, whereas those posted in 2016 ER 3.8. (p < .0001).  -The branded, visual contents were more effective in facilitating engagement. |
| Primary Aim: To Recruit Preliminary Survey Participants for Future Cancer Interventions | | | |
| Zaid et al. (2014)26 | Descriptive analysis, Non-parametric test.  No statistical significance testing. | -Clinical presentation, treatment, recurrence with an 84-item survey.  -Anxiety with 5-Likert scale.  -QOL with Lerman Cancer Worry Scale (5-Likert scale), Functional Assessment of Cancer Therapy-Cervix –27-item (score 0-168). | -57 participants were recruited form 8 countries across 4 continents treated at 51 centers.  -Achieving details of presenting symptoms and human papillomavirus (HPV) status.  -High score of anxiety (mean 4.4 out of 5).  -Overall, QOL scores (mean 103.3 out of 168, the mean of cancer population = 148), were low indicating poor well-being status across all domains of physical, social, emotional, functional well-being. Emotional well-being score was the lowest. |
| Akard et al. (2015)23 | Descriptive analysis.  No statistical significance testing. | -Total cost of advertisement.  -# of recruited participants.  -Research preferences with online surveys.  -Phone/computer capabilities with online surveys. | -Total cost of Facebook ad: $1129.88; $1.08/click.  -67 participants were recruited to start an online-survey.  -Parents preferred technological capabilities for web-based and electronic research methods.  -Facebook recruitment captured a sample with similar demographic characteristics to previous samples but may be a more cost-effective approach, generating greater geographic diversity and improved generalizability of results compared to single-site or multi-site studies using traditional recruitment methods. |
| Carter-Harris et al. (2016)24 | Descriptive analysis.  No statistical significance testing. | -Average recruited participants/day  -Cost of recruitment per completed survey. | Facebook: $1.51/ completed survey, average 18 recruited eligible participants/day (total 331 participant recruitment). -Control group (Newspaper): $40.80/ completed survey, average 10 recruited eligible participants/day (total 30 participant recruitment).  -Recruitment by Facebook was more efficacious and cost-effective compared with newspaper advertisement. |
| Primary Aim: Social Support | | | |
| Song et al. (2012)29 | Descriptive and Contents-Thematic analysis,  Pearson correlations. | -Individual’s social capital, social support, family interaction with an in-person survey.  -Cancer survivorship efficacy with 4-Liket scale.  -Depression with Center for Epidemiological Studies-Depression (CES-D).  -Perceived cancer survivorship identify, including “Who Am I” test with Video narratives. | -In survivors who held negative identity about cancer survivorship, there was a positive relationship with depression (r = .63, p <.001).  -Findings indicate that although pediatric cancer survivors often do not publicly discuss a “cancer survivor identity,” they do internalize both positive (60% of total participants) and negative identity (40%) about cancer survivorship. |
| Lepore et al. (2014)32 | Descriptive analysis, T-test /Chi-square test, Regression analysis. | -Psychological distress with Hospital Anxiety and Depression Scale [HADS].  -Perceived usefulness of the interventions with 5-Likert scale.  -Social support behaviors with a narrative coding using chat and discussion board for social support behaviors.  -Total # of words expressed, negative and positive emotion words expressed with a Word Count Text Analysis. | -More # of cancer-related postings and social supportive postings in Prosocial Internet Support Group (PISG) vs. ISG (p = .004).  -Usefulness of website was not significantly different between the two groups (PISG mean = 4.0, ISG mean = 3.7).  -PISG exhibited more supportive behaviors, posted more messages that were other-focused than self-focused, and expressed less negative emotion vs. ISG (p < .05).  -Relative to the ISG, participants in the PISG condition had a higher level of depression and anxiety symptoms after the intervention (p < .05): Helping others may not be beneficial as a treatment for mentally distressed survivors of breast cancer. |
| Primary Aim: Lifestyle Modification | | | |
| Valle et al. (2015)31 | Mixed-model analysis | -Physical Activity with a Godin Leisure Time Exercise Questionnaire.  -Mediators of Facebook-based Physical Activity intervention (FITNET) intervention upon physical activity: Self-efficacy and Social support with a 5-Likert scale web-surveys (Social support consists of four measures: friend, family, Facebook friends, total).  -Self-monitoring with a 10-item Exercise Goal-Setting Scale, 2-item Self-Management Scale. | -Physical Activity: Increased mild exercise (min/week) in FITNET group over time, compared to control (p <.05), but no mediation mechanisms between intervention and physical activity.  -Self-efficacy decreased in FITNET group (mean change: -0.38) than control group over time (mean change: -0.01, p =.025), but it did not effect on the physical activity in both groups.  -Social support from Facebook friends increased in control (mean change: 1.46), but not in FITNET group over time (mean change: -0.47, p = .039).  -Change in social support from friends on Facebook mediated the intervention effects on moderate-to vigorous physical activity (β = 13.61, p = .0006).  -Self-monitoring increased in FINET group, and was positively associated with moderate-to-vigorous physical activity (β = 57.22, p = .004). |
| Primary Aim: To Create and Use Own Blogs | | | |
| Harris et al. (2015)19 | Chi-square tests, Independent-samples t-tests,  Multiple regressions | - # of posts, and word count of posts.  -Website contents: Linguistic Inquiry and Word Count (LIWC) program to analyze text files as similar contents categories within 6 months.  -Website use at 1 and 6 months: Total time of Blogs using, # of Blogs log-in, Usefulness with 5-Likert scale, Feedback with open-questionnaire of free-response format.  -Technical difficulties (yes/no format), rating of positive or negative experiences with 7-Likert scale.  -Other measures at 6 months: Depression (CES-D), positive affect (POMS), Posttraumatic Growth -Inventory (PTGI), Life appreciation since cancer diagnosis (Appreciation of Life subscale).  -Visitor measure (one time): Usefulness of the Blogs with 5-Likert scale, Feedback with open-questionnaire of free-response format. | - Blogs users had posted an average of 3.00 entries to their Blogs (range = 0-17 posts) at 1 month and an average of 5.28 entries (range = 0-28 posts) at 6 months.  -69% of women login to their Blogs once a week or less, and 91% of women login to their Blogs once a week at 6 months.  - Blogs usefulness: overall women reported the Blogs as very useful at 1 (mean 2.9) and 6 months (mean 2.5) (p <.05).  -# of posts and total word count were not associated with change in depression, positive affect, and life appreciation.  -At 6 months, increased positive affection was reported.  -Higher use of positive word category from Blogs contents were positively associated with positive affection (p =.036).  -Higher use of negative word category was associated with depressive symptoms (p = .048).  -Visitor: most of visitors reported that the Blogs is useful in one time measure (mean 3.86, no statistical testing). |

Abbreviations: CDC, centers for disease control and prevention; QOL, quality of life.