Instagram use and mortality risk

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**Introduction**

The Instagram, a platform for people to share pictures and videos with others, was launched in October 2010. It has attracted 800 million daily active users and consists of 40 billion phots and videos have been shared on the Instagram platform since its conception (https://www.cnbc.com/2017/09/25/how-many-users-does-instagram-have-now-800-million.html).

Instagram as an image-based social media allows users to transform the appearance of the pictures and share instantly on multiple media channels (e.g., Facebook, Twitter, and Flickr) in addition to Instagram page. By self-presenting on Instagram, individuals could enhance their attractions so as to achieve their goal of being liked and “followed” by others. At the same time, self-presentation is a way to promote self, by displaying a perfect impression and underlining intelligence in front others. Therefore, positive images can gain more approvals from others, which in turn boosts subjective well-being.

Users could use the @symbol to mention other users in the picture before posting them. In this way, Instagram not only enables users to share content with networks they construct online, but also reflects how people interact with each other offline. Previous research suggests that online social media could be used as a way to help users engage in face-to-face social behaviors (Rainie & Wellman, 2012). Therefore, I expect there is a positive relationship between online social platform use and physically health.

Different from Facebook or Twitter, Instagram is mainly a photo-sharing application, which implicitly exerts an influence on our brain, that pictures we see are realistic and authentic over the impression of textual descriptions according to MAIN model (Wellman, 2012), simply because we as social animals get used to communicating with an actual person rather than objects or words. Just image a photo of your friend licking ice cream, lying on the beach. Then, you are more likely to feel your friend is really there. Therefore, this perceived authenticity may play an important role in providing social support and encouraging socially-motivated behaviors that may prevent illness.

**Purpose of the Present Study**

Physical health could be enhanced by two ways. One is by self-presentation, motivating us to become the best version of ourselves; the other one is by building relationships with other people, therefore gaining social support. Since Instagram satisfies this two sides, the purpose of this study is to determine the relationship between use of image-based platform (Instagram) and health problems, specifically for morality risk.

I will examine the following hypothesis:

* Research Question 1: Is Instagram overall use associated with health problems, specifically with morality risk?
* Hypothesis 1: Overall Instagram use is associated with lower risk of morality.
* Research Question 2: Is self-presentation on Instagram associated with health problems, specifically with morality risk?
* Hypothesis 2: The more self-presentation on Instagram, the lower risk of morality.
* Research Question 3: Are tags received associated with health problems, specifically with morality risk?
* Hypothesis: People who receive more tags experience lower mortality rates than those who receive less.

**Method**

To analyze the relationship between Instagram use and morality risk, I will conduct a six-wave survey on Qualtrics, which will be sent to each participant through email on the last day of six consecutive months (e.g. 1/31, 2/28, 3/31, 4/30, 5/31, 6/30). The survey contains two components: demographic information and assessment of Instagram activities, specifically for examining overall activities, self-presentation, and tags received. After six months, survey responses will be matched to the participants’ health status from Department of Public Health in order to evaluate whether those activities are related to decreased morality risk in the following two years. To be clear, there is a 6-month gap between these two measurement periods and we will keep tracking those participants’ health during two years after collecting six-month survey data.

**Participants**

Participants will be recruited through a combination of Instagram and Facebook ads (Instagram acquired by Facebook). They are required to be American citizen, who should have at least 90 days of experience with the Instagram before I start to measure Instagram use. Also, every participant is required to provide a first name, nickname, or date of birth not shared by others, so that those individuals could be linked to their health records uniquely.

**Measures**

**Assessment of biography**. I will collect demographic information at first. Personal information will include gender, age, religion, education, and socioeconomic information.

**Assessment of activities.** Then, I will analyze variation in use among Instagram users by asking questions like the duration of using Instagram and the average time spend on Instagram activities with “1=Never to 7=Everyday”. Questions such as “How often do you post pictures on Instagram?”, and “How often do you “Like” others’ posts on Instagram?”

Next, I will measure self-presentation on Instagram by asking questions, such as: “How often do you present yourself as gorgeous on Instagram?” and “How often do you show your talents on Instagram (e.g., make-up skills)?” Similarly, a 7-point scale will be used varying from “Never” to “Everyday” and higher scores imply a stronger tendency to present self.

Finally, I will consider whether Instagram interactions that are related to offline social activities drive the relationship between increased Instagram use and decreased morality. Specifically, I will focus on tags received rather than sent tags for every Instagram as an indicator of real world social interactions. “Tag” is a tool, which allows users to label friends in the photos. In other words, they must have already met with each other in real life, otherwise they can’t take a picture together. Thus, tags received could be a predictor that two people have a face-to-face relationship and this social interaction maintains once having met by posting a picture online. Questions will include: “How often do you receive tags from others” with “1=Never to 7=Everyday”.

**Assessment of morality risk.** I will turn to Department of Public Health for records of users’ mortality status and causes of mortality. In this study, causes of death include: infections, sexually transmitted diseases, colorectal cancer, pancreatic cancer, lung cancer, blood lymphatic cancers, all other cancers, diabetes, mental illness dementia, ischemic heart disease, stroke, all other cardiovascular diseases, liver disease, unintentional injury, drug overdose, suicide, and homicide (Hobbs et al., 2016). It is different from standard morality categorizations, because it involves more young age death causes and fewer old age morality causes.

**Study Considerations**

**What about the survey makes it digitally-enhanced?**

First,the survey will be online and computer-administered, rather than interviewer-administered (Salganik,2017). Since we will recruit a large sample, face-to-face survey will cost a lot. However, online survey provides more flexibility, allowing participants to take at an appropriate time and place, rather than in a long fixed interview week. Secondly, digital data is more convenient to match health records in the other dataset, because I can view results at any time, transfer them into specialized statistical software, and export data for matching or further analysis, particularly for a longitudinal study. Third, this is an ecological momentary assessment, examining participant’s recent states or behaviors over six months, so that I can get “fresh” and dynamic data on Instagram use of each participant.

**How would a survey be better than an observational study using found data?**

First of all, survey method solves the problem of incomplete information embedded in observational study. For this study, users’ demographics and socioeconomic status will be considered. Additionally, survey method could be used to learn about potentially confounding factors. I can’t rule out the possibility that people who have higher education level and socioeconomic status acquire more accesses to health care, not necessarily through posting pictures on Instagram. Secondly, I don’t need Instagram to grant my access to users’ data anymore, because I could just ask for those information in the survey. Third, survey method allows me to locate on the questions I concern about. For instance, with more advertisement showed up on Instagram, tags may not only be restricted for a relationship, which means that it could become a commercial way to “remind” you of new products. If I still rely on online big data, then the number of tags received from friends may not be accurate. By asking participants directly, data I collect will be cleaner.

**What are potential sources of error in your survey, and how will you minimize that error?**

The first error is non-response error. Participants need to take the survey for six months, during which they may refuse to participate or fabricate fake responses. However, the strength of using Qualtrics is that I can monitor each participant’s progress when taking the survey, like how long they spend on each question. Participants who completed six consecutive waves of survey will get extra gifts or rewards.

The second error is measurement error. The questions I ask may not be able to reflect what respondents think and do. Thus, I will turn to high-quality surveys and conduct a pilot study with some people from my frame population.

**Reference**

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social integration is associated with reduced mortality risk.