

# Assessing the Potential for Using Social Media to Increase Hepatitis B Awareness in Philadelphia

Julia Alber, PhD, MPH  
Postdoctoral Fellow  
Center for Health Behavior Research  
July 20th, 2017

The work was supported by funding received from the University of Pennsylvania's CTSA Community Engagement and Research Core (UL1TR000003), the University of Pennsylvania's Center for Public Health Initiatives, and the Perelman School of Medicine at the University of Pennsylvania.



## Outline

- ♦ Background
- ♦ Purpose
- ♦ Methods
  - Content Analysis
  - Interviews
  - Focus Groups
- ♦ Results
- ♦ Key take away points
- ♦ Limitations
- ♦ Next steps



2

## Background

- ♦ **Hepatitis B virus (HBV)**
  - Virus that affects the liver and can lead to chronic HBV<sup>1</sup>
  - Up to 2.2 million infected in U.S.<sup>2</sup>



1. de Villa V, Lo CM. Liver transplantation for hepatocellular carcinoma in Asia. *The Oncologist*. 2007 Nov;12(11):1321-31.

2. CDC. Viral Hepatitis & Liver Cancer. CDC Fact Sheet. 2016.

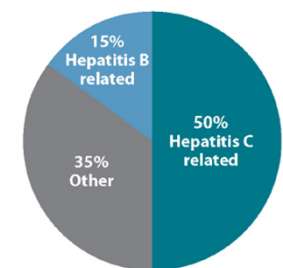


3

## Background

- ♦ **Individuals with chronic HBV:**
  - More likely of developing liver cancer<sup>1</sup>
  - 25% die prematurely from liver cancer or cirrhosis<sup>2</sup>
- ♦ **Liver cancer**
  - Increased 72% from 2003 to 2012<sup>3</sup>
  - 15% of liver cancer incidence cases associated with HBV<sup>3</sup>

Factors Contributing to Liver Cancer Incidence in the U.S.



1. World Health Organization. Hepatitis B [Internet]. 2008. Available from: [http://www.who.int/topics/hepatitis\\_b/en/](http://www.who.int/topics/hepatitis_b/en/)

2. Lisk AB, McMahon BJ. Practice Guidelines Committee, American Association for the Study of Liver Diseases (AASLD). Chronic Hepatitis B: Update of recommendations. *Hepatitis Bulletin*. 2004 Mar;3(2):87-91.

3. CDC. Viral Hepatitis & Liver Cancer. CDC Fact Sheet. 2016.



4

## Background

- ♦ Disproportionately affects Asian Americans<sup>1,2</sup>
  - ♦ Make up approximately 50%-60% of the U.S. infected population<sup>3,4</sup>
- ♦ Eleven states, including Pennsylvania, account for 75.5% of all chronic HBV<sup>4</sup>
- ♦ In some locations, including Philadelphia, young adults have high rates of hepatitis B<sup>6,7</sup>

**1 in 12**  
ASIAN AMERICANS  
is living with  
chronic Hepatitis B.



1. de Villa V, Lo CM. Liver transplantation for hepatocellular carcinoma in Asia. *The Oncologist*. 2007 Nov;12(11):1321-31.  
 2. Kowdley KV, Wang CC, Welch S, Roberts H, Braggart CL. Prevalence of chronic hepatitis B among foreign-born persons living in the United States by country of origin. *Hepatal Baltim Md*. 2012 Aug;56(2):422-33.  
 3. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2015. *CA Cancer J Clin*. 2015 Jan 1;65(1):5-26.  
 4. Asian Americans and Pacific Islanders and Chronic Hepatitis B | Populations and Settings | Division of Viral Hepatitis | CDC [Internet]. [cited 2017 Jun 15]. Available from: <https://www.cdc.gov/hepatitis/populations/asian.htm>.  
 5. Institute of Medicine (US) Committee on the Prevention and Control of Viral Hepatitis Infection: Hepatitis and liver cancer: A national strategy for prevention and control of hepatitis B and C [Internet]. Colvin MM, Mitchell AL, editors. Washington (DC): National Academies Press (US); 2010 [cited 2017 Feb 24]. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK220306/>.  
 6. Kowdley K V, Wang C, C, Welch S, Roberts H, & Braggart, C. L. Prevalence of chronic hepatitis B among foreign-born persons living in the United States by country of origin. *Hepatal Baltim Md* 56, 422-433 (2012).  
 7. Siegel, R. L, Miller, K. D, & Jemal, A. Cancer statistics, 2015. *CA Cancer J Clin*. 65, 5-29 (2015).

**Perelman School of Medicine**  
UNIVERSITY OF PENNSYLVANIA

5

## Background

- ♦ Primary - Vaccination
  - Recommendation started in 1991; many state laws (1997-2000)<sup>1,2</sup>
  - Prevailing thought is young adults should be protected but rates found to be high among certain communities<sup>3,4</sup>
- ♦ Secondary - Screening
  - Recommended by USPSTF and CDC for high-risk groups<sup>5,6</sup>
  - Can prevent transmission and lead to earlier treatment
    - Can reduce liver cancer risk by 50-80%<sup>6</sup>

1. Centers for Disease Control and Prevention. Update: recommendations to prevent Hepatitis B virus transmission—United States, *Morbidity Mortality Weekly Report* 1999, vol. 48 (pg. 33-5).  
 2. Middlemen AB. Race/ethnicity and gender disparities in the utilization of a school-based Hepatitis B immunization initiative. *J Address Health*. 2004, vol. 34 (pg. 414-9).  
 3. Cohen C. Chronic HBV infection and community-based services for high-risk Asian and Pacific Islanders [dissertation]. Philadelphia, PA: Drexel University; 2015.  
 4. Centers for Disease Control and Prevention. U.S. Department of Health and Human Services. CDC Fact Sheet: Viral Hepatitis and Liver Cancer.  
 5. Ioffe MS. U.S. Preventive Services Task Force. Screening for Hepatitis B virus infection in asymptomatic adults and adults 12-18. *Preventive Services Task Force recommendation statement*. *Ann Intern Med*. 2014 Jul 1;161(1):58-66.  
 6. Hyman AB, Eshman CR, Alakawa SF, Ward JG, Jemal A, Sherman RL, et al. Annual report to the nation on the status of cancer, 1975-2012, featuring the increasing incidence of liver cancer. *Cancer*. 2016 May 1;122(10):1312-37.

**Perelman School of Medicine**  
UNIVERSITY OF PENNSYLVANIA

6

## Background

- ♦ Public health messages
  - Others have used health communication strategies
  - Example: San Francisco Hep B Free (SFHBF) Campaign<sup>1</sup>
- ♦ Few existing campaigns aimed at reaching young adults



1. Yoo GJ, Fang T, Zola J, Daniels WM. Stigmatizing Hepatitis B in the Asian American Community: Lessons Learned from the San Francisco Hep B Free Campaign. *Journal of Cancer Education*. 2012;27(1):138-144.

**Perelman School of Medicine**  
UNIVERSITY OF PENNSYLVANIA

7

## Background

- ♦ Social media
  - 90% of US young adults (18-29 years old) are using social media
  - Could be used to promote awareness and engage in conversation around hepatitis B



1. Andrew Perrin. Social Media Usage: 2005-2015 [Internet]. Pew Research Center: Internet, Science & Tech. 2015 [cited 2017 Mar 17]. Available from: <http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/>.  
 Image sources: <https://twitter.com/instagram>; youtube.com; <https://en.facebookbrand.com/>.

**Perelman School of Medicine**  
UNIVERSITY OF PENNSYLVANIA

8

## Purpose

- ♦ Determine the potential of using social media to improve awareness and discussion around hepatitis B among Chinese and Vietnamese young adults in Philadelphia



9

## Methods

- ♦ **Content analysis**
  - Existing social media data
- ♦ **Interviews**
  - Young adults
  - Leaders from community organizations
  - Current use and perceptions towards social media
- ♦ **Focus groups**
  - Reactions to messages, delivery methods, and sources



10

## Content Analysis

- ♦ **Public messages**
  - Twitter, Instagram, and YouTube
  - Hepatitis Testing Day (May 16-22, 2015; May 16-22, 2016)
  - #HBV, #hepatitisb, #hepb, and #hepatitis
- ♦ **The image and text within 773 messages were coded**
- ♦ **Frequencies and regression analyses**



11

## Content Analysis

Characteristic	Total (N=773) n (%)	Individual Users (N=191) n (%)	Organizational Users (N=568) n (%)
<b>Platform</b>			
Instagram	90 (11.64)	31 (16.23)	57 (10.04)
Twitter	675 (87.32)	59 (83.25)	506 (89.08)
YouTube	8 (1.03)	1 (0.52)	5 (0.88)
<b>Hashtag</b>			
#hepb	69 (8.93)	11 (5.76)	56 (9.86)
#HBV	56 (7.24)	16 (8.38)	38 (6.69)
#hepatitisb	42 (5.43)	8 (4.19)	32 (5.63)
#hepatitis	673 (87.06)	163 (85.34)	499 (87.85)
<b>Location</b>			
USA	457 (59.12)	99 (51.83)	358 (63.03)
Outside of USA	123 (15.91)	38 (19.90)	82 (14.44)
Unknown	193 (24.97)	54 (28.27)	128 (22.54)
<b>Image or Video</b>			
Yes	360 (46.57)	02 (53.40)	247 (43.49)
No	413 (53.43)	89 (46.60)	321 (56.51)



12

## Content Analysis

Image	Total (N=773)	Individual Users (N=191)	Organizational Users (N=568)
	% (n)	% (n)	% (n)
Individual	11.77 (91)	15.71 (30)	10.39 (59)
Group	10.48 (81)	7.85 (15)	11.27 (64)
Medical Environment	0.13 (1)	1.57 (3)	1.23 (7)
Medical Equipment, Device, or Product	4.79 (37)	4.19 (8)	4.75 (27)
Logo	17.46 (135)	17.80 (34)	16.00 (91)
Illustration	27.55 (213)	32.46 (62)	25.00 (142)
Emotional appeal	8.28 (64)	9.42 (18)	7.75 (44)
Two or colors	30.14 (233)	33.51 (64)	28.70 (163)

## Content Analysis

Text Type	Total (N=773)	Individual Users (N=191)	Organizational Users (N=568)
	% (n)	% (n)	% (n)
Story/Narrative	4.40 (34)	6.81 (13)	3.70 (21)
Facts	37.26 (288)	35.08 (67)	36.97 (210)
Awareness Campaign	37.78 (292)	31.41 (60)	39.79 (226)
Headline/New Piece	13.58 (105)	14.14 (27)	13.38 (76)
Statistics	6.47 (50)	3.14 (6)	7.39 (42)
Website Link	74.90 (579)	68.06 (130)	77.29 (439)
Event Information/Announcement	5.95 (46)	5.24 (10)	6.34 (36)
Call to Action (General)	38.94 (301)	37.17 (71)	40.14 (228)
Health Belief Model Constructs			
Susceptibility	4.79 (37)	4.19 (8)	4.75 (27)
Severity	3.88 (30)	5.24 (10)	3.52 (20)
Benefits	5.69 (44)	3.66 (7)	6.16 (35)
Barriers	7.37 (57)	4.71 (9)	8.45 (48)
Cues to Action	25.10 (194)	23.04 (44)	26.23 (149)
Hepatitis B Screening	7.76 (60)	5.24 (10)	8.80 (50)

## Content Analysis

- ♦ Related to more likes

YouTube



#hepatitisb

13,470 posts



## Interviews

- ♦ One-on-one interviews
  - Young adults
    - Aged 18-29
    - 20 - female, 22 - male
    - 24 - Chinese, 15 - Vietnamese, 3 – both
  - Community organizations
    - 7 individuals from local organizations
- Frequency statistics, chi-square tests, and thematic analysis



## Interviews – Young adults

- ♦ **Social media use**
  - 88.1% reported using social media multiple times a day (n=37)
  - 76.2% reported using English only on social media (n=32)
- ♦ **Popular sites/apps**
  - Facebook (n=40, 95.2%)
  - Instagram (n=32, 76.2%)
    - More popular among 2<sup>nd</sup> generation
  - SnapChat (n=30, 71.4%)
    - More popular among 2<sup>nd</sup> generation
    - More popular among men
  - YouTube (n=29, 66.7%)
  - WeChat (n=20, 47.6%)
    - More popular among 1<sup>st</sup> generation

## Interviews – Young adults

Themes			Codes	
Theme	Theme Definition	# of Participants (%)	Code	# of Participants (%)
<b>Social Media Usage</b>	The type of social media or type of communication used on social media, such as the social media platforms or tools used or how they interact with others on social media.	42 (100%)	Social media tools	42 (100%)
			Following posts of personal connections	40 (95.2%)
			Private correspondence	38 (90.5%)
			Interacting publicly with personal connections	37 (88.1%)
			Following posts of non-personal connections	31 (73.8%)
			Communicates differently with friends and family	23 (54.8%)
<b>Preferences</b>	Describes how they or others have different preferences in terms of sharing information on social media.	42 (100%)	Communicates similarly with friends and family	16 (38.1%)
			Comfortable sharing	39 (92.9%)
			Personal preferences	31 (73.8%)
			Not comfortable sharing	29 (69.0%)
			Open to sharing publicly	23 (54.5%)
<b>Content Shared</b>	Description of type of information or content shared on social media.	42 (100%)	Prefers privacy or anonymity	25 (59.5%)
			Health information or instructions	42 (100%)
			Food	22 (52.4%)
<b>Social Connections</b>	Details the type of people or organizations that participants communicate with or follow on social media.	40 (95.2%)	Celebrities or organizations	36 (85.7%)
			With whom they are sharing or would share	31 (73.8%)
			Local connection	25 (59.5%)
<b>Positive/Negatives of Social Media</b>	The benefits or challenges to using social media in general in terms of its effect on health and society.	38 (98.5%)	Motivates or influences behavior	32 (76.2%)
			Negatives of social media	24 (57.1%)
			Maintaining relationship online	24 (57.1%)
<b>Potential Participation</b>	Participants describe if and/or why they or their friends or family may participate in a potential social media campaign for improving health.	38 (98.5%)	Interviewee would participate	30 (71.4%)
			Will consider if improves community	28 (66.7%)
			Friend would participate	26 (61.9%)
			Family would participate	14 (33.3%)

## Interviews – Young adults

- ♦ **Social Media Usage**
  - “For WeChat, I use it to talk to my relatives and my sibling. I don't usually talk with my friends, because we text.”

## Interviews – Young adults

- ♦ **Positives and Negatives of Social Media**
  - “...it's really hard to tell if what they are telling me on social media is true or not.”

## Interviews – Young adults

### ♦ Potential Participation

- “If I thought it was for a good cause and well put together, then yes.”

## Interviews – Community Leaders

### ♦ Social media use

- 5 people reported using social media
- Facebook most popular (n=5, 71.4%)
- All using social media said they use English on social media

## Interviews – Community Leaders

Themes			Codes	
Theme Name	Theme Definition	# of Participants (%)	Code Name	# of Participants (%)
<b>Potential Challenges</b>	The potential challenges to creating an effective social media campaign to address low hepatitis B screening in Philadelphia.	7 (100%)	Older adult concerns	7 (100%)
			Cultural/linguistic competency	6 (85.7%)
			General concerns about populations	6 (85.7%)
			Reaching people or organizations	6 (85.7%)
			Differences in people	5 (71.4%)
			Younger generation concerns	4 (57.1%)
			Privacy/confidentiality	4 (57.1%)
			Cost of resources	3 (42.9%)
			Ideas for campaign	7 (100%)
			Health information and resource	7 (100%)
<b>Potential Opportunities</b>	Different opportunities or benefits related to creating an effective social media campaign to address low hepatitis B screening in Philadelphia.	7 (100%)	Social media tools	6 (85.7%)
			Impactful/useful	6 (85.7%)
			Beneficial uses	6 (85.7%)
			Younger generation benefits	5 (71.4%)
			People/organizations as resources	4 (57.1%)
			Future social media use	4 (57.1%)

## Interviews – Community Leaders

### ♦ Potential Opportunities

- “Maybe it is not necessarily about getting social media to inform the older generation, but to inform the younger generation.”

## Interviews – Community Leaders

### ♦ Potential Challenges

- “I don't think it's going to be very easy for social media to become a platform for especially the older generation to start talking about health issues in the community, only because they tend to be more private ...”

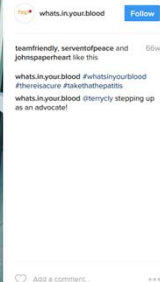
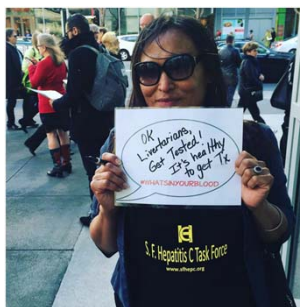
## Focus Groups – Young Adults

### ♦ Focus Groups

- 9 young adults
- Ages: 19-26
- 4-male, 5-female
- Social media use:
  - Facebook (n=8, 88.9%)
  - YouTube (n=8, 88.9%)
  - Instagram (n=7, 77.8%)
  - Snapchat (n=7, 77.8%)
  - WeChat (n=3, 33.3%).

## Focus Groups – Top Rated Message Ideas

### ♦ Screening as a part of a healthy lifestyle.



## Focus Groups – Top Rated Message Ideas

### ♦ Taking care of parent or grandparent.



## Focus Groups – Message Delivery Ideas

### ♦ Top Delivery Idea

- Promoting sharing through a group page or chat.



## Focus Groups – Trust in Sources

### ♦ Most trusted sources of information on social media

1. Medical professionals
2. Governmental agencies
3. Not-profit organizations
4. Hospitals

## Discussion – Key Take Away Points

### ♦ Content Analysis

- Both individual and organizational users posting about HBV
- Certain characteristics associated with more likes
- Limited use of theoretical constructs
- Need to understand short- and long-term impact of messages

### ♦ Interviews & Focus Groups

- Social media is commonly used among population of interest
- Primarily using English on social media
- Differences in communication preferences
- May want to focus on screening as part of healthy lifestyle and family for messages
- Groups or pages may be most appropriate for reaching young adults
- Need to use credible sources
- Need to understand short- and long-term impact of messages

## Limitations

### ♦ Content Analysis

- Limited parameters (e.g., dates included, number of social media platforms, hashtags)
- Did not control for all possible factors
- Does not provide data on affective or behavioral outcomes
- Does not provide information on who is engaging with the messages

### ♦ Interviews & Focus Groups

- Convenience samples
- A limited sample size for focus groups
- Inclusive of one city



## Next Steps

- ♦ **Applied for Prevent Cancer Foundation Grant to:**
  - 1) Test the effects of existing social media videos
  - 2) Apply different techniques to recruit local community groups

## Questions?