

# E-HEALTH Interventions Using Avatar Videos to Address Health Disparities: Results of Online Survey Evaluations Conducted by the Research Group on Disparities in Health

Presentation by

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A Presentation at the “Health Informatics & Technology Conference” (HITC-2014),  
October 20, 2014 - Conference theme “*Transforming the future of health care*”

Double Tree by Hilton Baltimore - BWI Airport

Benjamin Banneker Hall

Baltimore, MD, USA

(Hosted by OMICS Group Conferences)

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- ◆ Research Group on Disparities in Health (RGDH) was founded in 2003
- ◆ RGDH is part of the Center for Health Equity and Urban Science Education (CHEUSE)
- ◆ In 2006, the RGDH began to pioneer E-Health research using original protocols (e.g. online focus groups, interviews, surveys) and new culturally appropriate measures to evaluate healthcare websites, including Dr. Donna Bacon launching [www.DIVAhealth.org](http://www.DIVAhealth.org)
- ◆ [www.DIVAhealth.org](http://www.DIVAhealth.org) has hosted 20 research studies to date, including the use of videos, avatar videos/cartoons (i.e. via [www.GoAnimate.com](http://www.GoAnimate.com))
- ◆ The RGDH has also created other websites to host E-Health research studies, including brief online intervention studies – **“EDUTAINMENT”**

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- ◆ **2 to 5 minute avatar videos** have been developed as brief online e-health interventions designed to address health disparities
- ◆ The avatar videos have provided e-health on varied topics:
  - HIV risk reduction strategies for Men who have Sex with Men
  - Education on the HIV window period for diverse men
  - Education on nine methods of pregnancy prevention for African American women
  - Education on MyPlate (serving plate  $\frac{1}{2}$  fruits & Vegetables) and increasing physical activity designed for African American mothers and their children—as examples.

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- ◆ The RGDH process:
  - ◆ Latest research used to write scripts for avatar videos
  - ◆ Design avatar videos using characters chosen to match the diverse demographics of the target audience—tailoring characteristics for cultural appropriateness
  - ◆ Use [www.GoAnimate.com](http://www.GoAnimate.com) technology to create brief videos
  - ◆ Launch a social marketing campaign (i.e. twitter, text-messaging, e-mail, Facebook, Linked In) to disseminate a link to the videos and survey, and conduct online research to evaluate the impact of the videos

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- ◆ RGDH has pioneered embedding avatar videos within online surveys ([www.SurveyMonkey.com](http://www.SurveyMonkey.com)) and **BRIEF E-HEALTH INTERVENTIONS** via **pre-video viewing versus post-video viewing comparisons on scales measuring:**
  - ❑ **Stage of change for performing specific behaviors** [i.e. from the Transtheoretical model of Prochaska and DiClemente (1983) where one may be in the stages of precontemplation, or contemplation, or preparation, or action, or maintenance)
  - ❑ **Level of self-efficacy** [i.e. level of confidence to perform specific behavior from the work of Bandura (1986)]

**OTHER RELEVANT THEORY FOR INTEGRATED FRAMEWORK GUIDING RESEARCH**

- ❑ **Diffusion of Innovation Theory** [i.e. from the work of Rogers (1962, 1995)] to see if viewers recommend the videos as early adopters of the innovation of diffusing e-health
- ❑ **Culturally Appropriate – Tailored For Categories of Consumers** [i.e. Misra and Wallace (2012) have emphasized the importance of e-health being tailored for categories of consumers and in light of the consumers' characteristics, including being culturally appropriate]

Garcia, D.E. (2013). Diffusing the Innovation of E-HEALTH Featuring Avatar Videos Designed to Empower Men Who Have Sex With Men To Increase HIV Testing, Screening for Sexually Transmitted Infections, and Risk Reduction Behaviors.

Doctoral Dissertation. Teachers College, Columbia University (N=188)

◆ SAMPLE SURVEY WITH EXCELLENT INTERNAL CONSISTENCY

# ITEMS      CRONBACH'S ALPHA

**HIV/STI Testing, Condom Use and Sexual Behavior Empowerment Scale**

**(HIV-STI-CUSBES-7)**                      14                      .894

*Empowerment Stage of Change Subscale (E-SOC-7)*

7                      .859

*Empowerment Self-Efficacy Subscale (E-SE-7)*

7                      .870

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◆ **SAMPLE SURVEYS WITH EXCELLENT INTERNAL CONSISTENCY**

**# ITEMS                      CRONBACH'S ALPHA**

**Stage of Change and Self-Efficacy of E-health Videos on Seven Behaviors (SOC-SE-EHV-7B)**

14                      .924

*Rating of Videos Subscale (RV-7)*

7                      .956

*Empowerment Stage of Change of (i.e. After Viewing) E-Health Videos Subscale (E-SOC-EHV-7)*

7                      .927

*Empowerment Self-Efficacy of (i.e. After Viewing) E-Health Videos Subscale (E-SE-EHV-7)*

7                      .931

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- + Those behaviors that did achieve significance—MOVEMENT ACROSS STAGES OF CHANGE were:
- + **# 3) screening for STIs** – The *before video viewing* mean was 1.42 or in precontemplation (n=64, SD = .495) compared to the *after video viewing* mean of 2.44 (n=64, SD = 1.344) or in a contemplation stage—achieving significance (t= -6.122, df = 63, p = .000).
- + **#4) screening for STIs after an unprotected anal sex encounter** – The *before video viewing* mean was 1.49 or in precontemplation (n=45, SD = .506) compared to the *after video viewing* mean of 2.60 (n=45, SD = 1.405) or between a contemplation and preparation stage—achieving significance (t= -5.512, df = 44, p = .000).
- + **# 5) asking a partner to use condoms** – The *before video viewing* mean was 1.34 or in precontemplation (n=41, SD = .480) compared to the *after video viewing* mean of 2.29 (n=41, SD = 1.419) or in a contemplation stage—achieving significance (t= -4.422, df = 40, p = .000).
- + **# 6) negotiating condom use** -- The *before video viewing* mean was 1.22 or in precontemplation (n=60, SD = .415) compared to the *after video viewing* mean of 2.73 (n=60, SD = 1.625) or in closest to a preparation stage—achieving significance (t= -6.901, df = 59, p = .000).
- + **# 7) refusing unprotected sex** -- The *before video viewing* mean was 1.42 or in precontemplation (n=53, SD = .497) compared to the *after video viewing* mean of 2.83 (n=53, SD = 1.490) or closest to a preparation stage—achieving significance (t= -6.596, df = 52, p = .000).



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- + Significant increases in Self-Efficacy
- + When examining the seven targeted behaviors of interest, separately, only the following paired t-test comparisons were significant ( $p < .006$ ) as follows:
  - + **# 3) screening for STIs** – The *before video viewing* mean was 4.92 or closest to 80% confident ( $n=188$ ,  $SD = 1.399$ ) versus the *after video viewing* mean of 5.23 or 80% confident ( $n=188$ ,  $SD = 1.290$ ), as a difference that was statistically significant ( $t = -3.899$ ,  $df = 187$ ,  $p = .000$ ).
  - + **# 7) refusing unprotected sex** -- The *before video viewing* mean was 4.96 or closest to 80% confident ( $n=188$ ,  $SD = 1.425$ ) versus the *after video viewing* mean of 5.25 or 80% confident ( $n=188$ ,  $SD = 1.200$ ), as a difference that was statistically significant ( $t = -2.848$ ,  $df = 187$ ,  $p = .005$ ).

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EARLY ADOPTERS OF INNOVATION OF E-HEALTH

+ Yes, I would recommend them.	N= 122	68.1%
+ No, I would NOT recommend them.	N=59	31.4 %
+ Missing Response	N=1	.5 %

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- ◆ Garcia (2013) is just illustrative of our numerous culturally appropriate research tools that have produced significant findings for **movement across stages of change, increases in self-efficacy, and for viewers being early adopters of the innovation of diffusing e-health**
- ◆ Collectively, the links to the avatar videos in the public domain and on special e-health websites, along with the research findings and original research measures suggest the potential for e-health—specifically designed to be culturally appropriate in light of consumer characteristics and needs—to have a significant impact on population and community health.
- ◆ FUTURE POTENTIAL – To provide E-HEALTH on virtually any topic in brief 2 minute to 5 minute avatar videos, while tailoring the avatars to match the characteristics of varied consumers, ensuring cultural appropriateness
- ◆ RGDH MODEL – May transport to varied applications to ensure ease of access of E-HEALTH to varied populations
- ◆ THANK YOU! bcw3@tc.columbia.edu