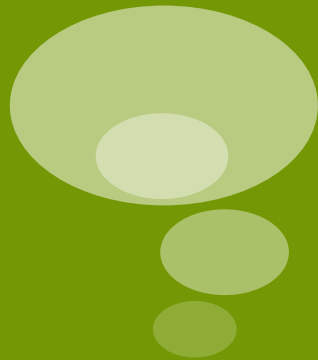


# Results of an Online Social Support and Text Reminder ART Intervention



**Keith J Horvath, B.R. Simon  
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Konstan, Gene P. Danilenko,  
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7<sup>th</sup> International Conference on HIV Treatment and Prevention Adherence  
June 5, 2012; Miami, FL

# Technology-assisted ART Adherence Interventions



Author(s) & Year	Target Population	Technology	N	Outcome
Puccio et al. (2006)	16-24 yo adolescents attending an HIV clinic in the US	Weekly mobile phone call	8	5 Ps completed through week 24; Ps found calls helpful and acceptable
Lester et al. (2010)	HIV-infected adults enrolled in care in Kenya (WeTel Kenya 1)	Weekly text-based messages with follow-up phone call	538	Significant effects of intervention on self-reported adherence and suppressed viral load
Fisher et al. (2011)	Adults attending HIV clinics in the US (LifeWindows)	Theory-based (IMB model) computer-administered program	594 (328 on protocol)	Compared to controls, on protocol intervention group had significantly higher 3-day adherence over time

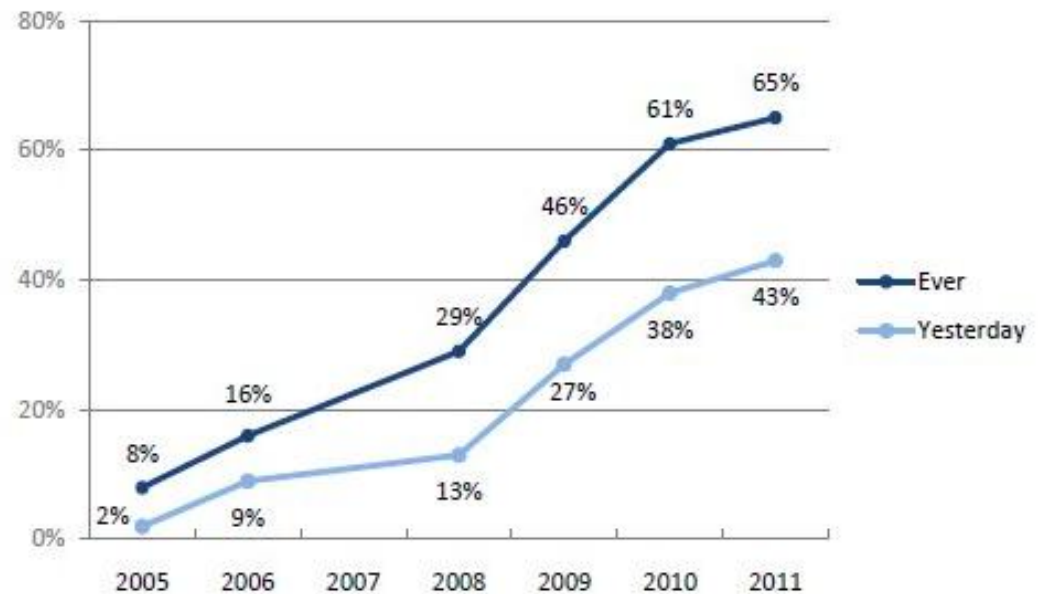
# Social Networking Site Use



- 65% of US adults who use the Internet use social networking sites (e.g., Facebook)
- 50% of US adults have used social networking sites

**Social networking site use by online adults, 2005-2011**

The percentage of all adult internet users who use social networking sites since 2005



Madden, M. & Zickurh, K. (2011). 65% of online adults use social networking sites.  
<http://pewinternet.org/Reports/2011/Social-Networking-Sites.aspx>

# Peer-to-peer Support for Health Concerns



- 18% of US Internet-using adults have gone online to find others with similar health concerns
- 23% of those living with a chronic health condition have done so (vs. 15% of those not living with a chronic health condition)
- Online peer support is most helpful to gain emotional support in dealing with a health issue and for quick remedies to everyday health issues

# Online Social Networking Website Use by ART Adherence Level



Horvath, K.J. Danilenko, G.P., Williams, M.L., Simoni, J., K. Rivet Amico, K. R. , Oakes, J.M., Rosser, B.R.S. (2012). Technology use and reasons to participate in online social networking websites for people living with HIV in the US. *AIDS & Behavior*, 16, 900-910

		Total	95%+ Adherence (n=148)	< 95% Adherence (n=164)
		%	%	%
Social Networking Websites & Features Used at least Once per Week	Facebook	61.7	59.2	64.0
	Poz.com forums	28.0	28.6	27.4
	My Space	21.2	16.3	25.6*
	The Body forums	10.6	13.6	7.9
	LinkedIn <sup>±</sup>	9.3	7.5	11.0
	Bebo	1.3	1.2	1.2
	Xanga	0.6	0	1.2
	Other	10.9	8.2	13.4
	None	23.8	26.5	21.3

± Ps<\$60,000 per year were less likely to use than Ps>\$60,000 per year

## Internet Medication Adherence Study (IMAS)

- Long-term Objective:
  - Develop a theoretically-grounded (IMB model) online social support intervention to improve ART adherence
- Funding Type/Source:
  - National Institute of Mental Health
  - Pilot study to assess feasibility & acceptability of this approach (R34)



# IMAS Study Team



- Investigators:
  - Keith J. Horvath (PI), University of Minnesota
  - B.R. Simon Rosser (Co-I), University of Minnesota
  - J. Michael Oakes (Co-I), University of Minnesota
  - Joseph Konstan (Co-I), University of Minnesota
  - Heather Vezina (Co-I), University of Minnesota
- Consultants:
  - K. Rivet Amico, University of Connecticut
  - Jane Simoni, University of Washington
  - Mark L. Williams, Florida International University
- Research Team:
  - Gene Danilenko (Study Coordinator)
  - Jared Shenk (Study RA)
  - Maria Finke (Study RA)
  - Jessica Hermanson (Study RA)
- Technology partner:
  - Dan Melton (Non-Profit Technologies)

# “ThriveWithMe.net”: Home Page



The screenshot shows the home page of ThriveWithMe.net. At the top, there is a navigation bar with the logo and links for Home, Inbox (0), My Meds, My Profile, My Content, Settings, and Log out. The main content area is divided into two columns. The left column features a 'What's going on?' section with a text input field and a 'POST' button. Below this are four posts from users PozinSiPet, jared, and Dontcharj, each with a profile picture, a timestamp, a text description, and options to remove or flag the post. The right column features a profile for 'Admin Jared' with a profile picture, location (Minneapolis, MN), last login date (Apr 18), and an 'Edit My Profile' link. Below the profile is a 'Thrive Points' section showing a progress bar from 1 to 7. At the bottom of the right column is a 'thrive tips' section with a list of links to various FAQ and guideline pages.

withme.org

**thrivewithme** [Home](#) [Inbox \(0\)](#) [My Meds](#) [My Profile](#) [My Content](#) [Settings](#) [Log out](#)

### What's going on?

Share links, videos, thoughts & mood here... [POST](#)

**1 day ago** [Remove](#) [Flag Post](#)  
Come over and meet us all in the new yahoo twrn\_alumni group guys!  
Comments: (0) [\[Reply\]](#)

**3 days ago** [Remove](#) [Flag Post](#)  
Wow, I won the gift card, LOL, 38yrs old and I have never won any kind of raffle or contest, 1st I'd like to thank all my fans in the Balcony, and my producers, the music dept and gals down in wardrobe, you'r the best, I would be here without my parents who always told me I could be and do anything with hard work, the director, it was his vision that I THRIVED to persue, Thank you, Thank you all...  
Comments: (0) [\[Reply\]](#)

**3 days ago** [Remove](#) [Flag Post](#)  
GoodMorning folks  
Comments: (0) [\[Reply\]](#)

**3 days ago** [Remove](#) [Flag Post](#)  
Happy Friday! I hope everyone hasa great weekend! I wonder if the glitch in the points system has been worked out. I've sort of lost track of what mine should be at this point!  
Comments: (0) [\[Reply\]](#)

**3 days ago** [Remove](#) [Flag Post](#)

### Admin Jared

[Male](#)

From: **Minneapolis, MN**  
Last Login: **Apr 18**  
[Edit My Profile](#)

### Thrive Points

[How do I get points?](#)

**1** SO FAR **7** YOUR GOAL

### thrive tips

- [FAQ: About Confidentiality & This Site](#)
- [Online Hosted Chats Schedule \(updated 3/31\)](#)
- [FAQ: Changing meds in med tracker](#)
- [Community Guidelines](#)
- [FAQ: Content](#)
- [FAQ: Using ThriveWithMe On Your Smartphone](#)
- [Terms and Conditions](#)



# “ThriveWithMe.net”: My Meds Page

The screenshot displays the 'My Meds' page on ThriveWithMe.net. The navigation bar includes 'Home', 'Inbox (0)', 'My Meds' (active), 'My Profile', 'My Content', and 'Settings'. The 'Meds' section features a legend: 'Taken As Prescribed' (green), 'Taken Late' (yellow), 'Not Taken' (red), and 'No Response' (X). A bar chart shows adherence for the last seven days: Fri, Jan 14 (green); Sat, Jan 15 (yellow); Sun, Jan 16 (yellow); Mon, Jan 17 (green); Tue, Jan 18 (green); Wed, Jan 19 (yellow); Thu, Jan 20 (yellow). The 'mysettings' section includes a 'Your Cell Phone' field, a checkbox for 'Send Me Medication Reminders Via Text', and a 'Time Zone' dropdown set to '(GMT-06:00) Central Time (US & Canada)'. Buttons for 'NEW MEDICATION', 'UPDATE', and 'UPDATE' are visible.



# “ThriveWithMe.net”: My Content Page



The screenshot shows the 'My Content' page on the ThriveWithMe.net website. The page features a navigation bar with links for Home, Inbox (0), My Meds, My Profile, My Content (highlighted), Settings, and Log out. The main content area is titled 'Thrive Content' and includes links for Articles, Videos, and Links. A featured article titled 'NEW! HIV Treatment as Prevention' is displayed, with a summary and a 'Read More >>' link. Below the article are sections for 'Videos >>' and 'Links >>'. A sidebar on the right contains a search bar and a 'recent content' list with various articles like 'NEW! HIV Travel Bans', 'NEW! HIV Treatment as Prevention', 'NEW! Cancer', 'Managing Antiretroviral (ARV) Side Effects', 'Living Positively with HIV and Keeping Healthy', 'HIV Raises Society's Taboos (HIV Discrimination)', 'Smoking and HIV', 'Ten Things You Can Do to Adhere to Your Medication Schedule', and 'HIV Treatment 101'. The browser's address bar shows 'withme.org/my\_content' and the taskbar includes a document titled 'TWM My Profile.docx'.

Thanks to the “Positive Project”: <http://www.thepositiveproject.org/#>

# “ThriveWithMe.net”: Profile Page



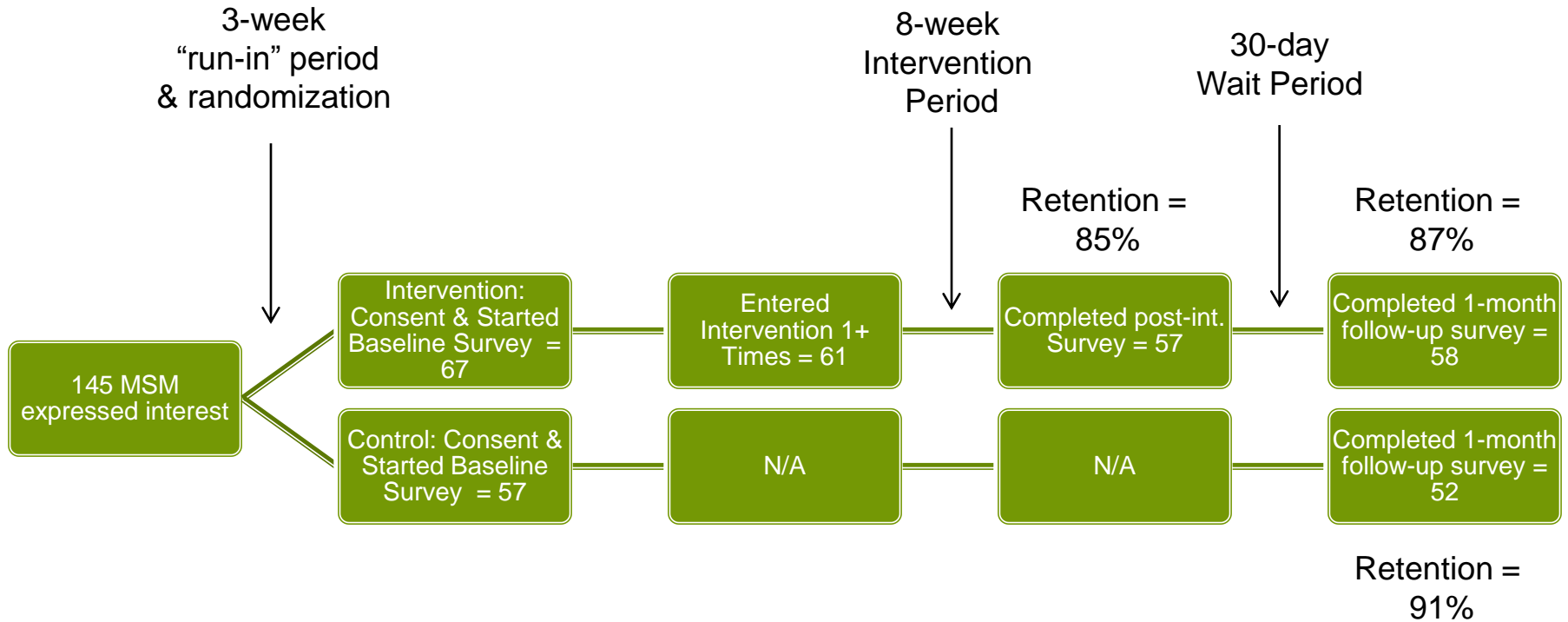
The screenshot shows a web browser window displaying the profile page for 'Admin Jared' on the website 'thrivewithme.org'. The browser's address bar shows the URL 'withme.org/4/Admin%20Jared'. The website's navigation bar includes links for Home, Inbox (0), My Meds, My Profile (highlighted), My Content, Settings, and Log out. The profile header features the user's name 'Admin Jared' with a 'Male' gender indicator, a profile picture, and location information: 'From: Minneapolis, MN' and 'Last Login: Apr 18'. Below the header is a section titled 'What's going on?' with a text input field and a 'POST' button. The main content area is titled 'Admin Jared Posts' and lists four recent posts, each with a thumbnail, a title, a timestamp, and keywords. The first post is 'New Article: NEW! HIV Treatment as Prevention' from 6 days ago, with keywords 'Living With HIV, Survive And Thrive, and hiv positive support'. The second is 'New Article: NEW ACTIVITY! QOW 4/8' from 10 days ago, with keyword 'Survive And Thrive'. The third is 'Smoking and HIV >> Hi chockotee, have you checked out the main portal on smoking and HIV at the body?' from 17 days ago, with keyword 'Help'. The fourth is 'New Article: NEW ACTIVITY! QOW 4/1' from 17 days ago, with keywords 'Physical Health And HIV and Living With HIV'. To the right of the posts is a sidebar with sections: 'aboutme' (Research Assistant at the University of Minnesota), 'thrive tips' (FAQ: About Confidentiality & This Site, Online Hosted Chats Schedule (updated 3/31), FAQ: Changing meds in med tracker, Community Guidelines, FAQ: Content, FAQ: Using ThriveWithMe On Your Smartphone, Terms and Conditions).

# Participants & Recruitment

- Participants
  - HIV-positive Gay/Bisexual Men with <100% ART Adherence
  - US residency
  - Available over a 16 week period to participate in study
  - Somewhat or very interested in participating in a health and wellness website and interacting with other people living with HIV
- Recruitment
  - Study period: February – April 2011
  - Source
    - 42% – Earlier survey of technology use among HIV+ MSM
    - 21% – HIV Online sources (Poz.com, AIDSmeds.com)
    - 11% – Gay/Bi Online sources (Gay Ad Network, Black Gay Chat)
    - 1% – Facebook
    - 24% – Other/Referral



# Intervention Flow



Overall 1-month follow-up Retention = 89%

# Measures

- Demographic Characteristics
- Psychosocial and mental Health Items
- Intervention Process Measures (post-intervention)
  - Information Quality
  - System Quality
  - Perception of Usefulness for Living with HIV
  - Overall Satisfaction Ratings
- ART Adherence (0-100%)
  - Overall ART Adherence in past 30 days
  - Took ART Within 2 Hours of Scheduled Dose in past 30 days
  - Took Medications Correctly with Food in past 30 days



# Baseline Demographic Characteristics



		Total	Intervention	Control
Age	Mean Years	43	42	43
HIV+	Mean Years	13	12	14
Race (%)	White	64	67	61
	Black	33	32	35
	Other	2	2	4
Hispanic (%)	Yes	10	11	9
Education (%)	High school or less	8	9	8
	Technical or some college	49	52	49
	College degree	22	18	22
	Graduate degree	21	20	21
Internet Knowledge	Mean (range=0-70)	56.9	55.3	58.8*

# Baseline Mental Health Characteristics



		Total	Intervention	Control
Perceived Stress	(Mean; range=0-30)	19.4	18.3	20.7
HIV Stigma	(Mean; range=13-52)	27.4	28.0	26.8
Life Chaos	(Mean; range=5-30)	15.9	16.1	15.7
		Col %	Col %	Col %
Depression (CES-D)	Moderate/Severe Sxs	71.0	70.4	71.7
Audit	None	69.1	72.7	64.9
	Hazardous Drinking	21.1	19.7	22.8
	Dependency	9.8	7.6	12.3



# Information Quality Ratings (n=57)



Strongly Disagree=1 to Strongly Agree=7

Mean

The information on Thrive With Me is easy to comprehend

6.09

The information on Thrive With Me is credible

6.18

The information on Thrive With Me is valuable to my living a healthy life

5.66

The information on Thrive With Me is clear in meaning

5.98

The information on Thrive With Me is accurate

5.95

The content on Thrive With Me is informative for living a healthy life

5.96

# System Quality Ratings (n=56)



Strongly Disagree=1 to Strongly Agree=7	Mean
Thrive With Me loads all the text and graphics quickly	6.13
Thrive With Me is easy to use	5.82
It is easy to go back and forth between pages on Thrive With Me	5.98
Thrive With Me responds quickly when I click on a link or button	5.98
Thrive With Me is user-friendly	5.61
Thrive with Me requires few clicks to locate information	5.64
The information I shared on Thrive With Me was secure	5.82

## Intervention Outcome Ratings (n=56)



Strongly Disagree=1 to Strongly Agree=7	Mean
Using Thrive With Me enables me to find information and support for healthy living more quickly.	5.30
Using Thrive With Me improves my ability to make healthier choices.	5.27
Using Thrive With Me increases my ability to live healthier.	5.16
Using Thrive With Me enhances my effectiveness in dealing with life's challenges to my health.	5.02
Using Thrive With Me makes it easier to live a healthier life.	5.09
I find Thrive With Me useful in my life.	5.04

# Overall Satisfaction (n=56/57)

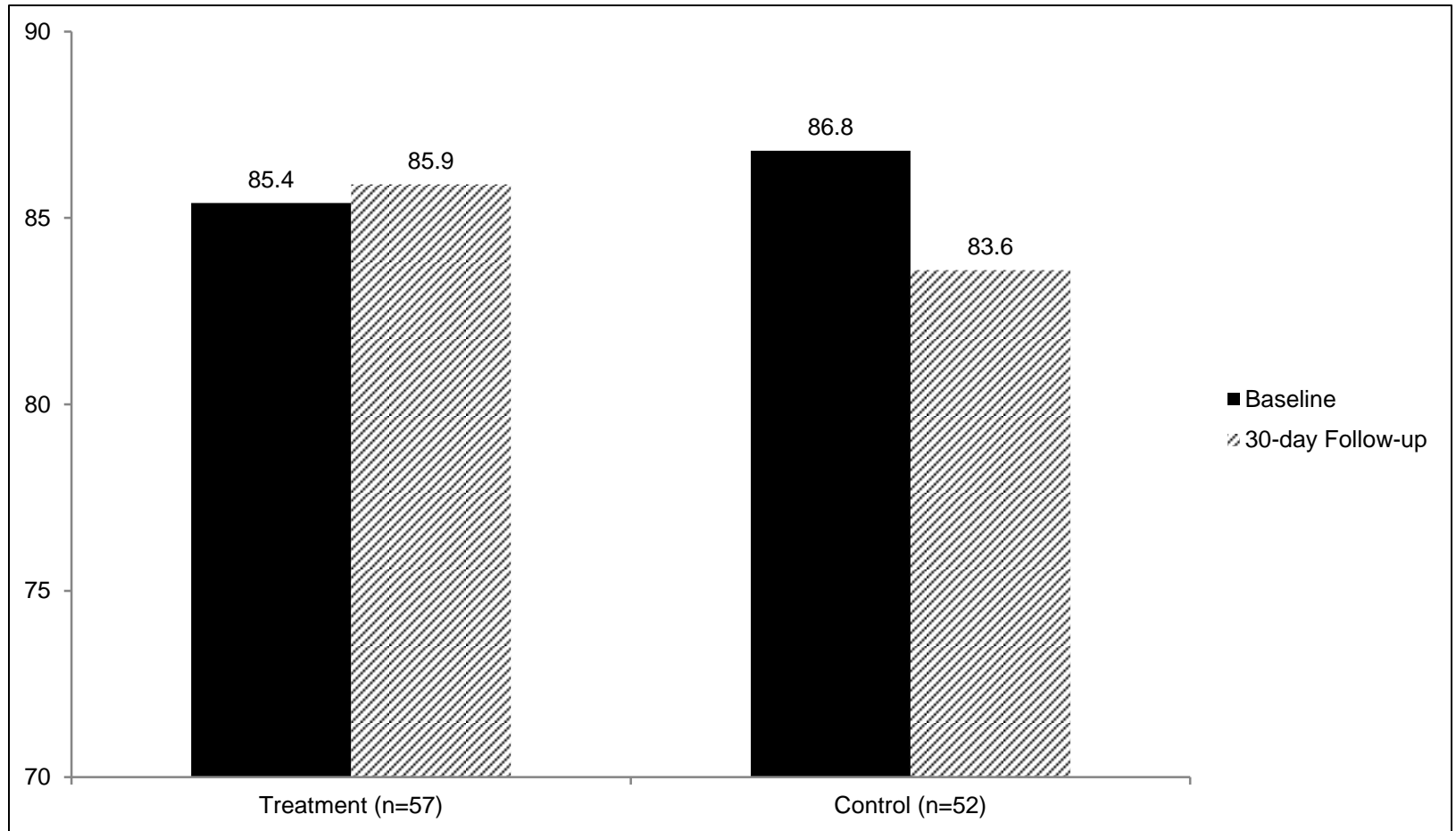


Strongly Disagree=1 to Strongly Agree=7	Mean
Overall, I am satisfied with Thrive With Me	5.72
Using Thrive With Me is frustrating	2.84
I would recommend Thrive With Me to my friends	5.64
If available, I would frequently participate in Thrive With Me	5.11

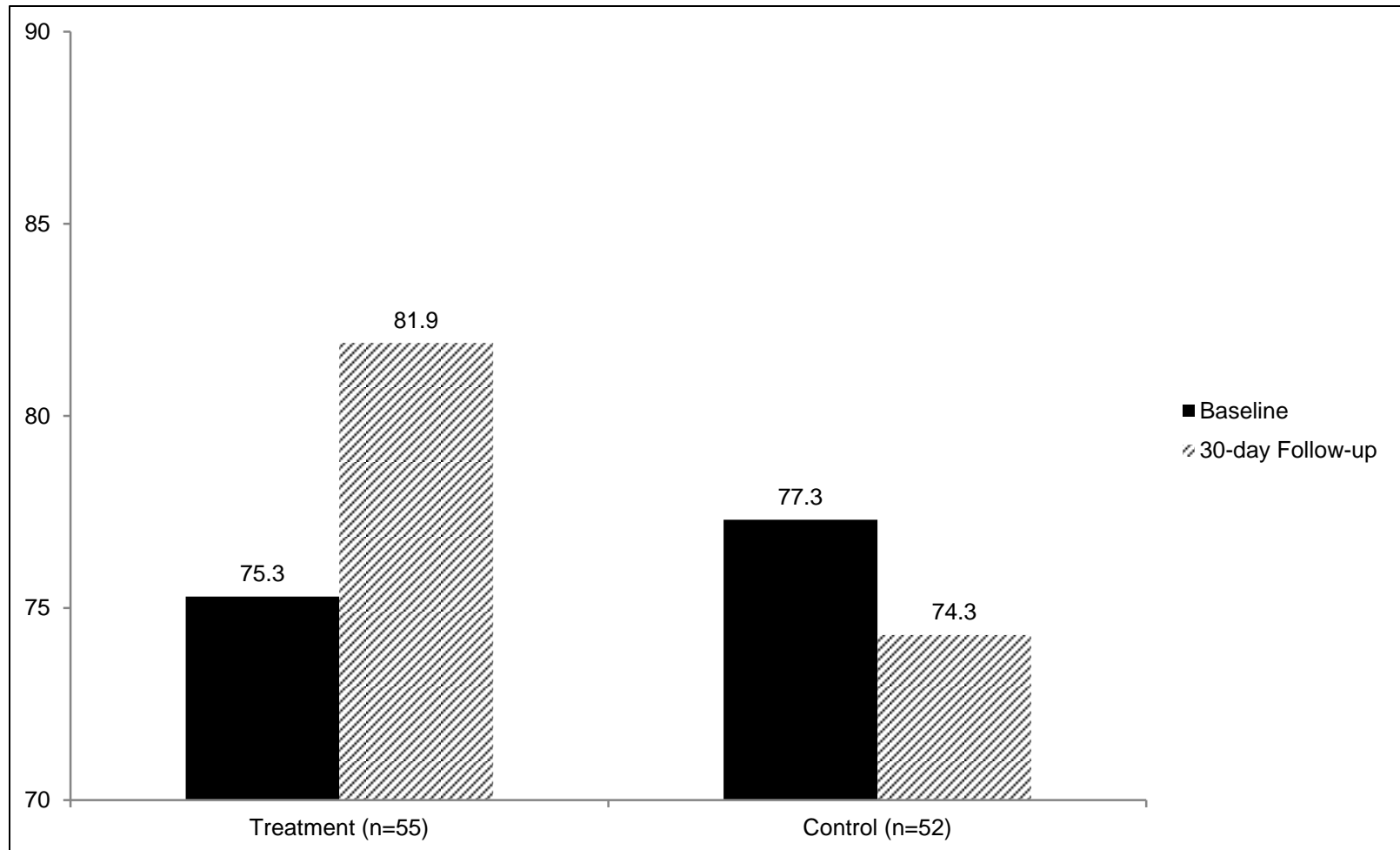
  

Very Unlikely=1 to Very Likely=7	Mean
How likely would you be to continue using Thrive With Me?	4.84

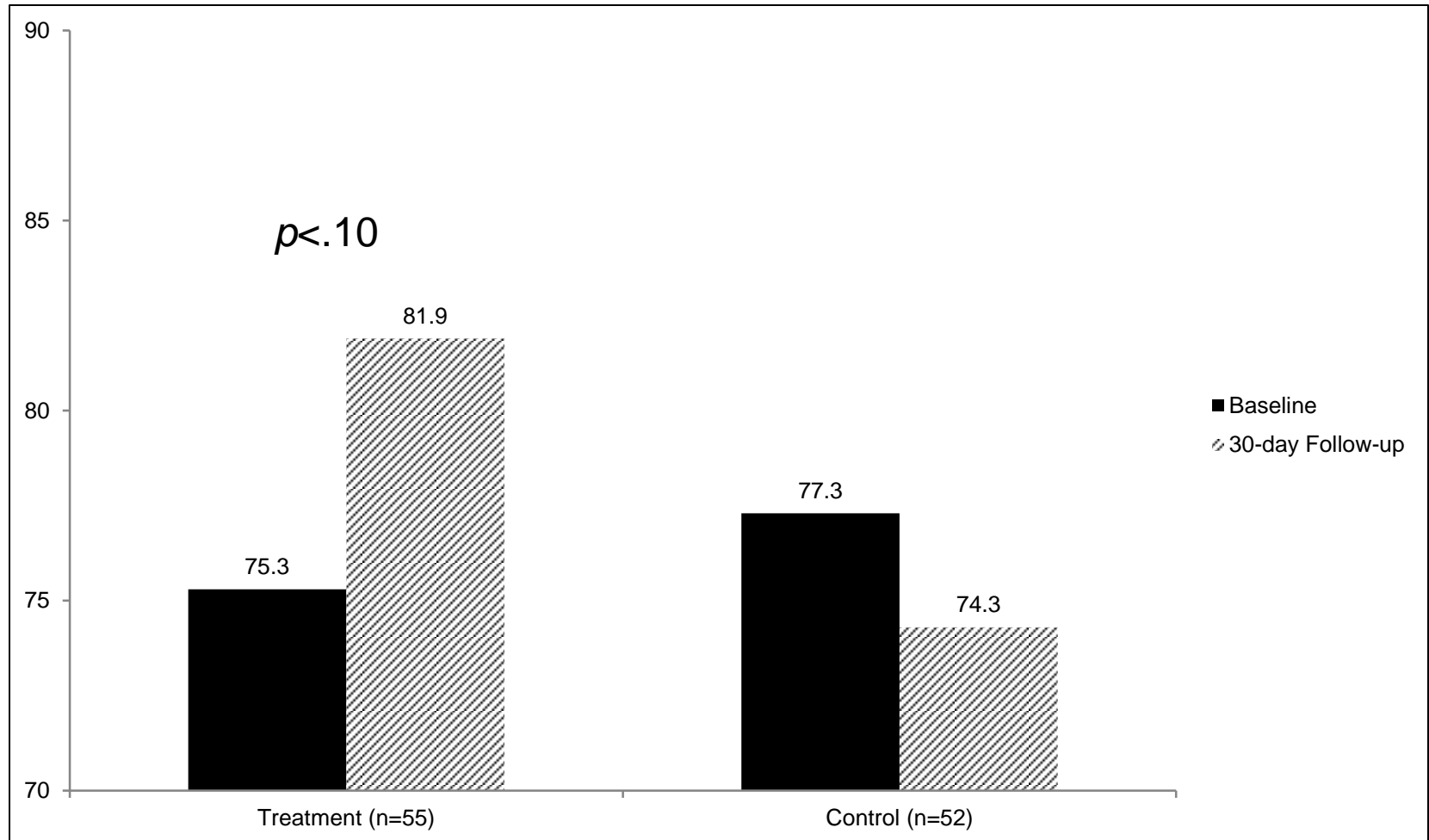
# Mean 30-day % Overall ART Adherence



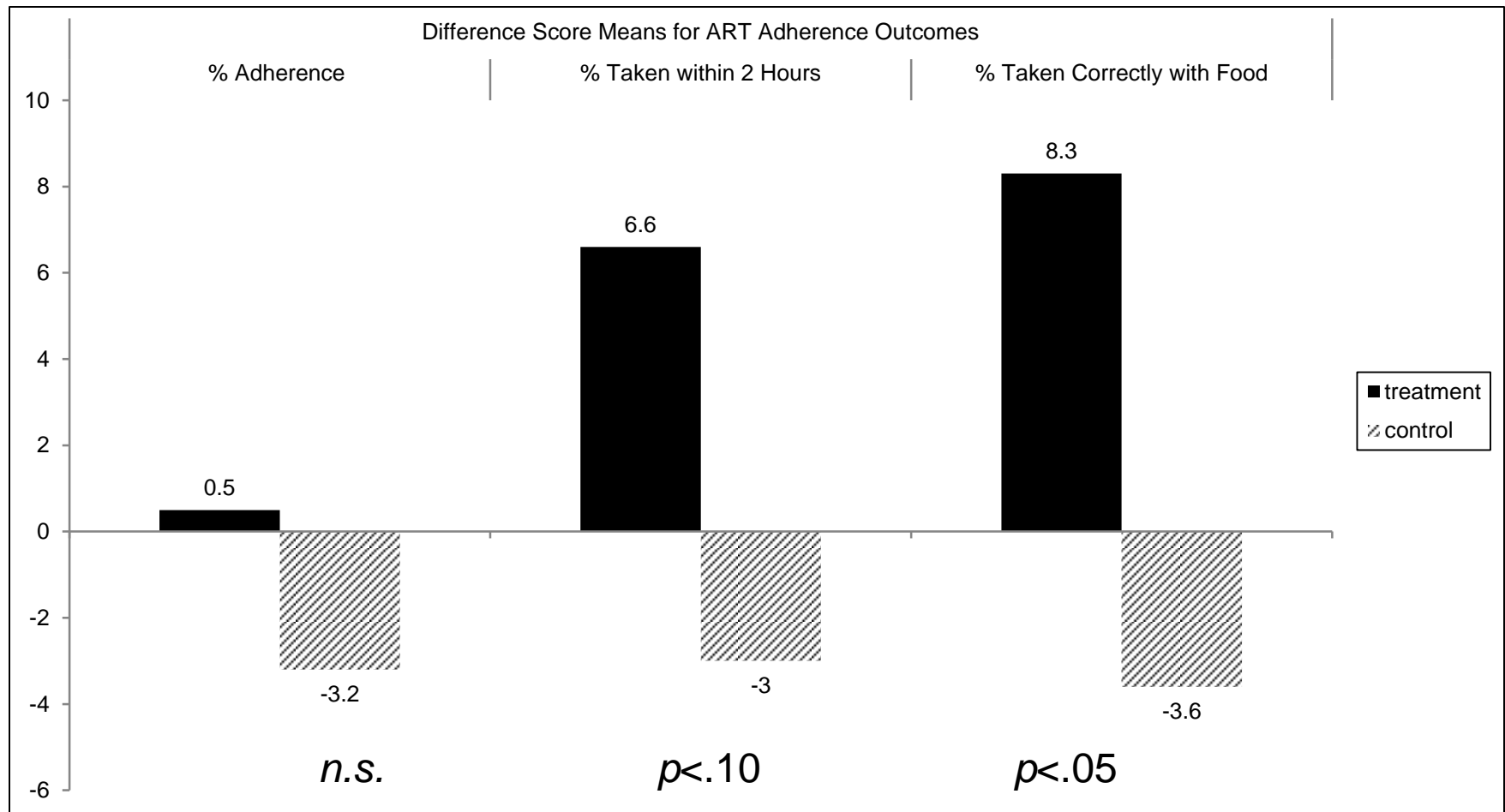
# Mean 30-day % Took ART within 2 Hours of Scheduled Dose



# Mean 30 Day % Took ART Correctly with Food



# Mean ART Outcome Difference Scores ([30-day Follow-up] – [Baseline])





# Conclusions

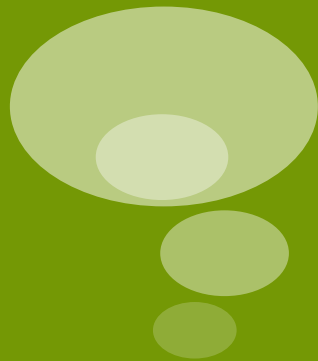
- Online social support and text messaging ART intervention was feasible and highly acceptable to users.
- The intervention did not significantly improve overall ART adherence.
- However, the intervention may have helped participants to refine their ART adherence behaviors, including taking their medications within 2 hours of the scheduled dose and correctly with food.



## Future directions

- Future studies are needed that:
  - Use larger sample sizes to examine efficacy
  - Are more intense and are longer in duration
  - Enroll samples of PLWH with worse baseline ART adherence





# Thank You!

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Institute of Mental Health  
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