



Using Tablet Devices for Management of Behavior Symptoms in Dementia

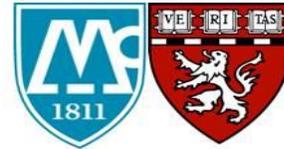


Ipsit V. Vahia, M.D.

*Medical Director, Institute for Technology in Psychiatry
Medical Director, Geriatric Psychiatry Outpatient Programs,
McLean Hospital*



*Assistant Professor of Psychiatry,
Harvard Medical School*



Late April 2013

- Dinner at Kensington Grill (fancy restaurant in San Diego) with friends and their hyperactive 4 year old
- iPhone used to keep him calm during dinner

Can an iPad be used to control the behavior of someone functioning at the level of a 4 year old i.e. severe dementia?

Tablets for Control of Behavioral Symptoms in Older Psychiatric Inpatients

- Conducted on UCSD Senior Behavioral Health Geriatric Psychiatry inpatient unit
- Patients with history of behavioral symptoms (agitation) that requires psychotropic medications (e.g. antipsychotics)
- All consented patients trained in iPad use by staff
- Menu of approximately 70 apps – all available commercially for free on App Store
- When patients become agitated, iPads given by research staff.
- Outcome Measure: Subjective reduction in behaviors

Vahia et al, Am J Geriatr Psych, 2016

Most Commonly Used Apps

- YouTube
- Safari/Chrome
- Pandora
- Amazing Dogs
- Google Maps/Google Earth

Rating App Complexity

Rating	Application
1 (least complex; requires passive attention)	Pandora
2	Doodle buddy
3	Amazing dogs
4	ESPN
5	Google search
6	Piano
7	Word search
8	Backgammon
9	Match puzzles
10 (most complex; involves higher order cognitive skills)	Sudoku

Tablet use among inpatients with dementia

TABLE 1. Demographic and Psychiatric/Medical Characteristics of the Three Impairment Groups Based on MoCA Scores

	Total (N = 36)	Mildly Impaired (N = 13)	Moderately Impaired (N = 7)	Severely Impaired (N = 16)	F(df) or χ^2 (df)	p
Demographic characteristics						
Mean age, y (SD)	79.9 (8.2)	75.3 (8.3)	85.0 (6.1)	81.4 (7.4)	F(2,33) = 4.4	0.02
Mean education, y (SD)	13.3 (4.2)	13.2 (4.5)	13.0 (5.0)	13.6 (3.8)	F(2,30) = 0.05	0.95
Gender (% female)	61.1	92.3	85.7	25.0	$\chi^2(2) = 15.9$	<0.001
Prior tablet use experience, N (%)	17 (47)	7 (54)	2 (29)	8 (50)	$\chi^2(2) = 1.3$	0.53
Prior computer experience, N (%)	13 (36)	8 (61)	0 (0)	5 (31)	$\chi^2(2) = 7.8$	0.02
Psychiatric characteristics						
Frequency of comorbid depression-spectrum diagnosis, N (%)	23 (64)	12 (92)	6 (86)	5 (31)	$\chi^2(2) = 13.8$	<0.01
Frequency of psychotic symptoms, N (%)	25 (69)	6 (46)	4 (57)	15 (94)	$\chi^2(2) = 8.3$	0.02
Number of psychotropic medications (SD)	1.8 (1.4)	1.7 (1.3)	1.3 (1.1)	2.1 (1.5)	F(2,33) = 0.9	0.39
Medical characteristics						
Mean number of medical comorbidities (SD)	4.91 (2.4)	5.3 (2.9)	4.85 (1.6)	4.6 (2.2)	F(2,33) = 0.3	0.75
Mean number of nonpsychotropic medications (SD)	4.9 (2.5)	4.8 (1.3)	3.7 (1.2)	5.3 (3.5)	F(2,33) = 0.8	0.45
Tablet use characteristics						
Median number of instances of tablet use per subject (IQR)	3 (2, 5)	3 (2, 6)	2 (1, 3)	4 (3, 5)	F(2,33) = 1.0	0.37
Median number of unique apps used per subject (IQR)	2 (1, 3)	3 (1, 4.5)	3 (1, 3)	2 (1, 3)	F(2,33) = 1.2	0.54
Median complexity of apps (IQR)	2.8 (2, 6)	5.3 (2, 8.4)	3.0 (2.0, 8)	2.14 (1.6, 3.5)	F(2,32) = 3.0	0.06
Mean total amount of time using tablet, min (SD)	101.8 (220.8)	183.8 (350.8)	53.3 (59.0)	53.3 (38.0)	F(2,32) = 1.5	0.24
Mean minutes per instance of tablet use (SD)	18.3 (13.4)	24.0 (19.0)	19.2 (6.1)	13.0 (7.3)	F(2,32) = 2.51	0.09
Mean rating of magnitude of reduction in agitation (average across subject; SD)	3.4	3.9	3.5	2.8	F(2,32) = 2.8	0.07

Tablet use among inpatients with dementia

	Mildly Impaired (N=13)	Moderately Impaired (N=7)	Severely Impaired (N=16)	P-value
Median Unique Apps/Subject (IQR)	3 (1, 5)	3 (1,3)	2 (1,3)	0.54
Median complexity of Apps (IQR)	5.3 (2,8.4)	3.0 (2,8)	2.14 (1.6, 3.5)	0.06
Mean total time using tablet (mins) (SD)	183.8 (350.8)	53.3 (59.0)	53.3 (38.0)	0.24
Mean minutes/instance of tablet use (SD)	24 (19.0)	19.2 (6.1)	13.0 (7.3)	0.09
Mean rating of magnitude of reduction in agitation (1(least) to 5(highest))	3.9	3.5	2.8	0.09

Division of Geriatric Psychiatry – McLean Hospital

Confidential – do not copy or distribute



In the Media



News / PTI feed /

Tablet devices may help dementia patients manage agitation



Zivot.sk > Lifestyle

Pacientov trpiacich demenciou skúšali liečiť pomocou tabletov, výsledok bol prekvapujúci!

01.02.2017 (5/2017) Výskumy ukázali, že používanie tabletov pomáha pacientom s demenciou.



ABOUT HMS | EDUCATION | RESEARCH

News

Home / News / An App a Day

An App a Day

Tablet devices can enhance therapies for agitation



TECHNOLOGY | BRAIN AND BODY | NATURE | HUMANITY

Brain and Body

Tablet Devices Show Promise in Managing Agitation Among Patients With Dementia

Mexico Star

More news more often

Mexico News - South America News - European Politics News - Mexico City News - World News - Health News - Breaking Entertainment News - Breaking Health News - Shipping News - General Education News - Mexico News - World News

Tablet devices can help dementia patients reduce agitation

Mexico Star (MMS) Sunday 5th January, 2017

Tired of Daily Birth Control?

Learn More About a

Division of Geriatric Psychiatry – McLean Hospital

Confidential – do not copy or distribute



Fake News!

The
TeCake

TECH GADGET SOFTWARE BUSINESS SCIENCE SPACE HEALTH

Home · Health · Study says tablet devices may cure Dementia

Health

Study says tablet devices may cure Dementia

By **Priyanka Singh** - January 9, 2017

Division of Geriatric Psychiatry – McLean Hospital

Confidential – do not copy or distribute



“No one wants a drill. They just want
the hole it makes”

- *Theodore Levitt (most probably)*

Division of Geriatric Psychiatry – McLean Hospital

Confidential – do not copy or distribute



Acknowledgements



- Colin A. Depp, Ph.D.
- Danielle Glorioso, L.C.S.W.
- Ramesh Rao, Ph.D.
- Joseph Wang, Ph.D.
- Daniel D. Sewell, M.D.
- Dilip V. Jeste, M.D.



- Brent Forester, M.D.
- John Torous M.D.
- Justin Baker, M.D. Ph.D.
- Kerry Ressler M.D. Ph.D.
- Scott Rauch, M.D.