

Behavioral Health is Essential To Health



Prevention Works



Treatment is Effective



People Recover



The Utilization of Technology in the Recovery Process by People Living with Schizophrenia





Schizophrenia & Technology Study

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Technology use among 457 persons self-identifying as living with schizophrenia: Results from an online survey



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JMIR.org

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With special thanks to Keris Myrick, former President, NAMI Board of Directors

Today

- *Objectives and Methodology*
- *Key Findings*
 - **The people**
 - **Experience with technology**
 - **Use of technology**
- *Demographics*
- *Conclusions and Considerations*


Objectives

Despite growing interest in the use of digital technology by people living with schizophrenia, little is actually known about how these individuals relate to, own and use technology in their daily life and with their symptoms.

- **What types of technology are people living with schizophrenia using?**
- **How are they using it?**
- **How does technology help someone cope?**

Methodology

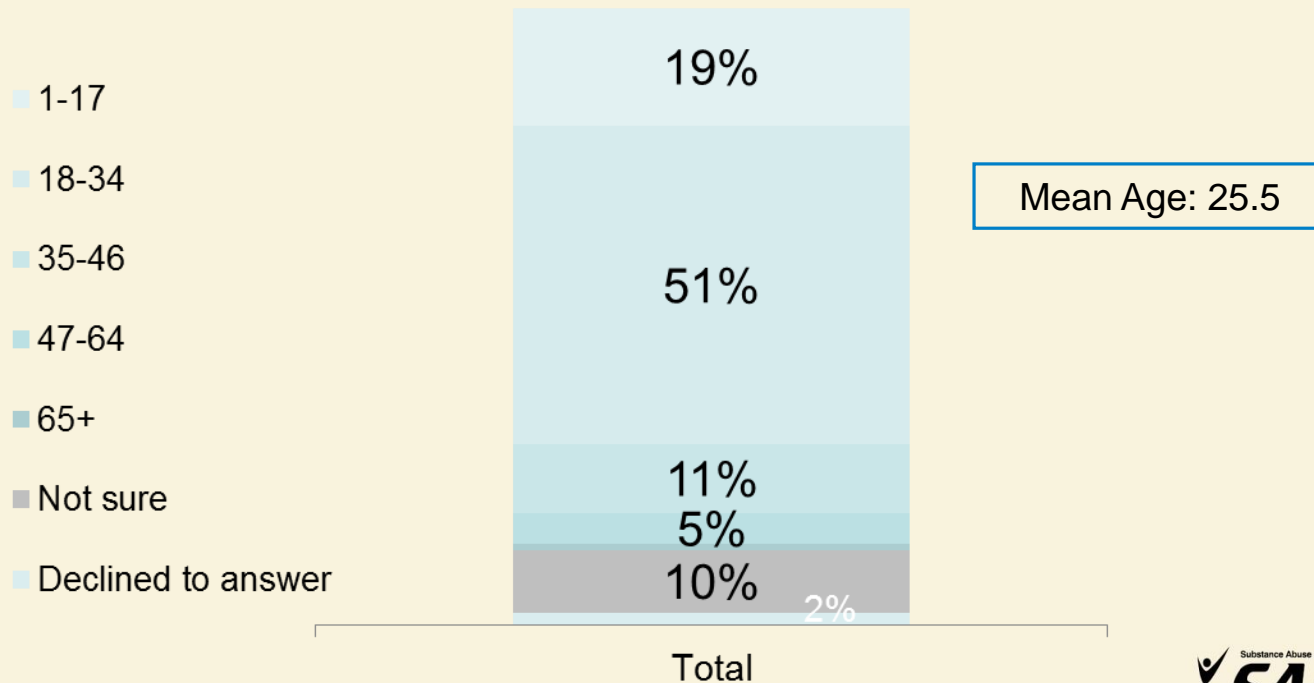
- **Commissioned Harris Poll via Nielson**
- **457 interviews via online survey, avg. 15 min**
- **Aug. 25 – Sept. 8, 2014**
- **298 completes came from sample obtained from Harris Poll and other approved partners**
- **68 completes came from NAMI's mailing list**
- **91 completes entered the survey via a link posted to NAMI's website**



Key Findings – The People

Age Diagnosed

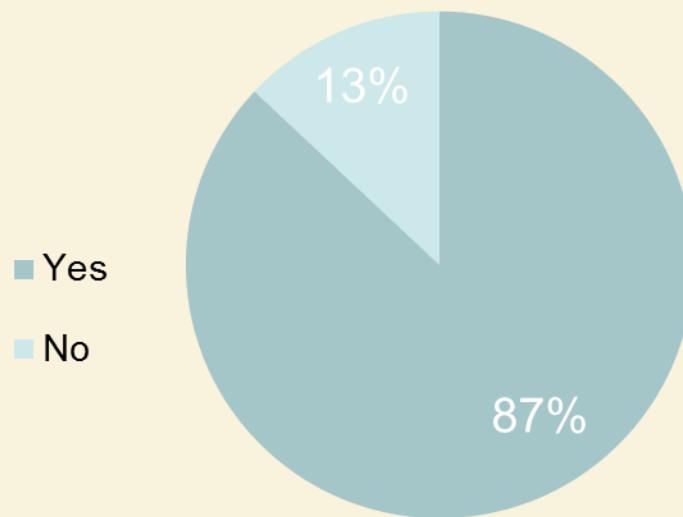
The majority (51%) of people living with schizophrenia were diagnosed with their disorder between the ages of 18-34 with a mean age of 26.



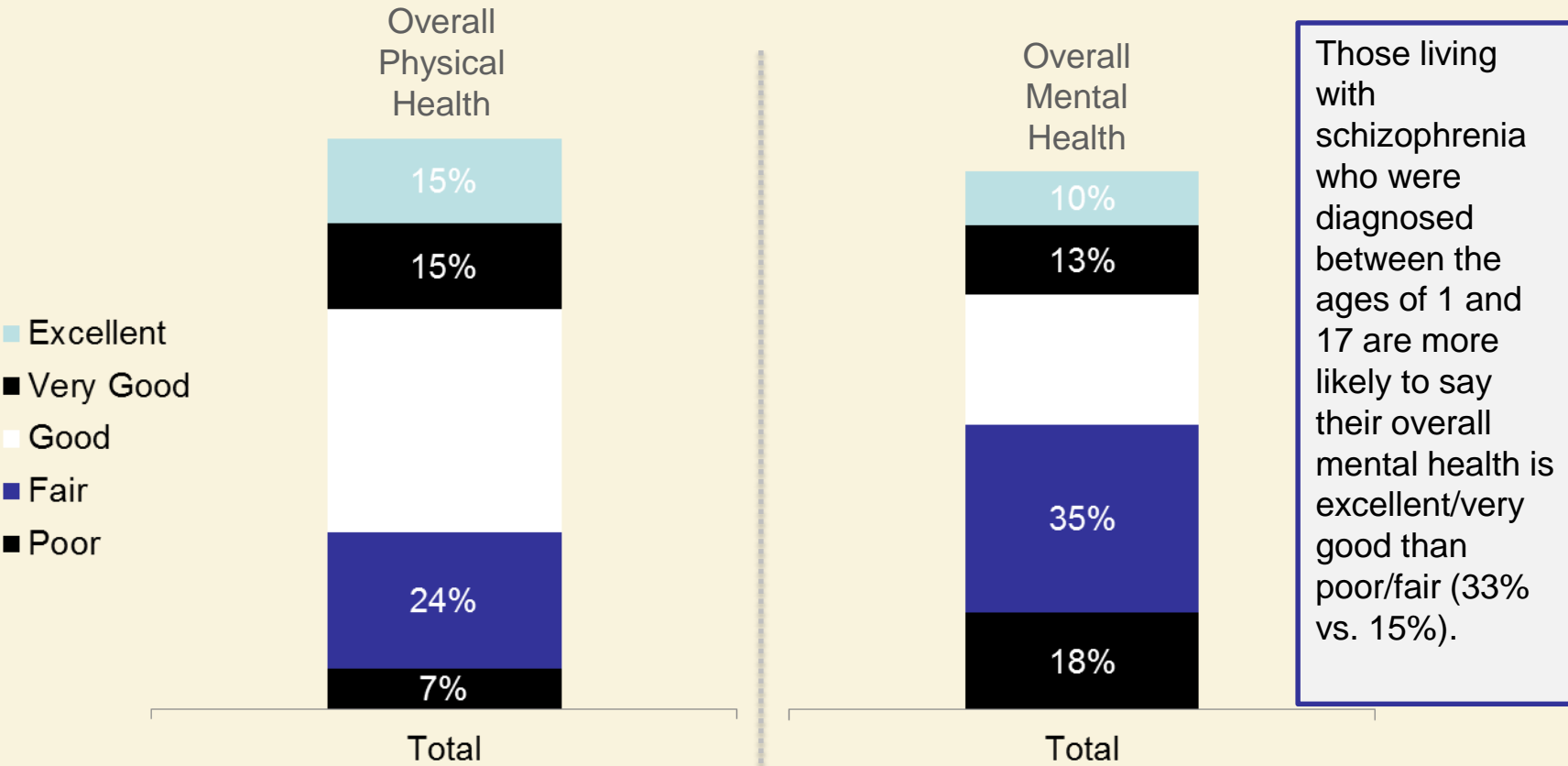
Currently Being Treated for Schizophrenia

Nearly nine in ten of those living with schizophrenia say they are currently being treated for the disorder.

Currently Being Treated For Schizophrenia



Physical Health and Mental Health



Those living with schizophrenia who were diagnosed between the ages of 1 and 17 are more likely to say their overall mental health is excellent/very good than poor/fair (33% vs. 15%).

Compared to older adults (47-64) living with schizophrenia, those aged 18-34 living with schizophrenia are more likely to describe their mental health as excellent/very good (29% vs. 12%).

Importance of Relationships

Importance In Relationships In Helping Deal Successfully Living With Schizophrenia



Men are more likely than women to find the relationships with people at their place of worship (51% vs. 31%) or workplace (47% vs. 26%) important in helping them deal with their schizophrenia.

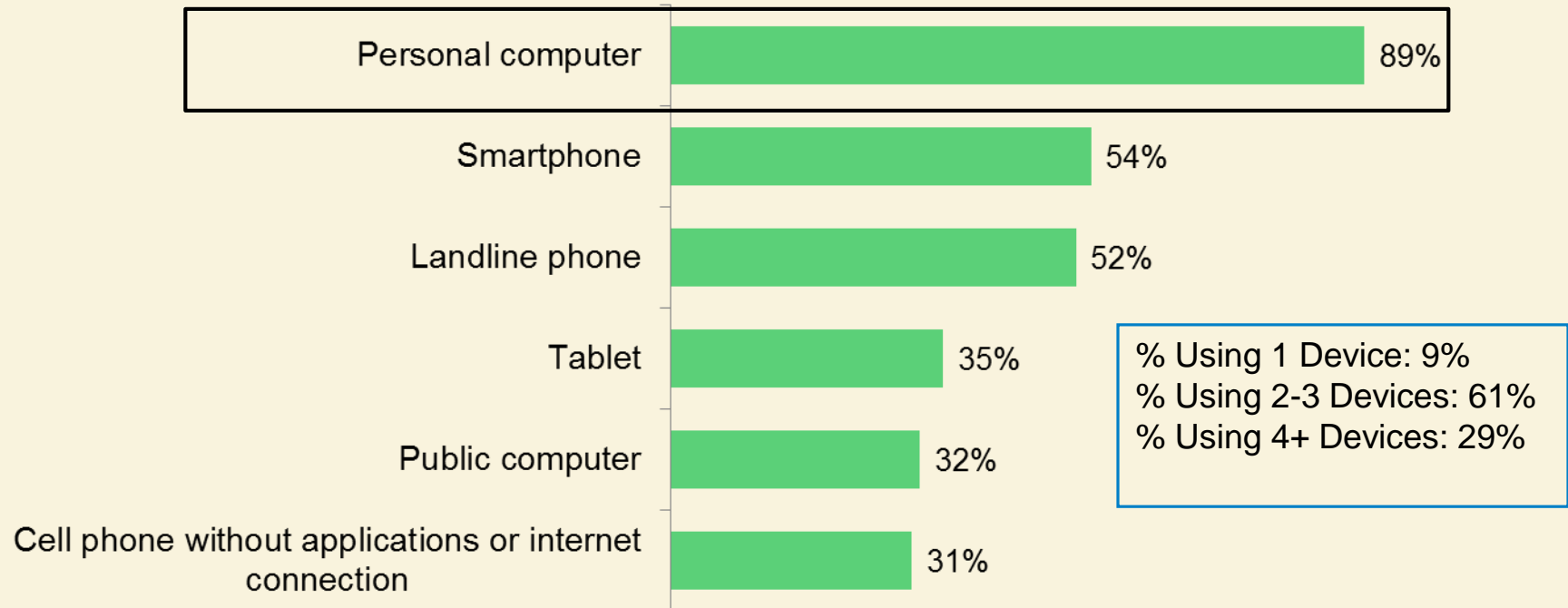
The people—some observations

- **The respondents are predominantly people engaged in treatment.**
- **There are age and gender differences in personal ratings of health (age) and important relationship categories (gender).**

Key Findings – Experience with Technology

Access to Technological Devices

Technological Devices Have Access To

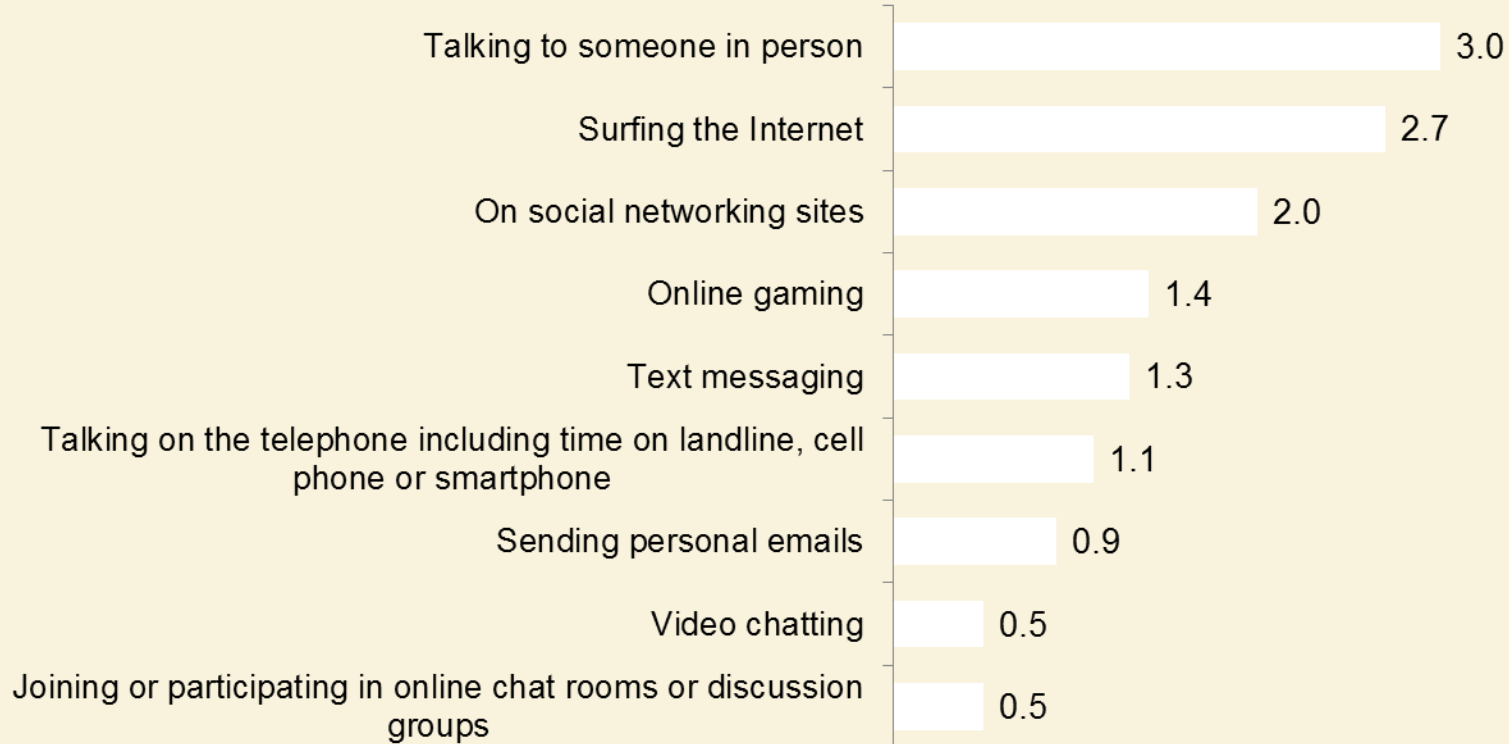


Over two thirds (68%) of those aged 18-34 living with schizophrenia have access to a Smartphone compared to 48% of 35-46 year olds and 44% of 47-64 year olds living with schizophrenia.

Time Spent

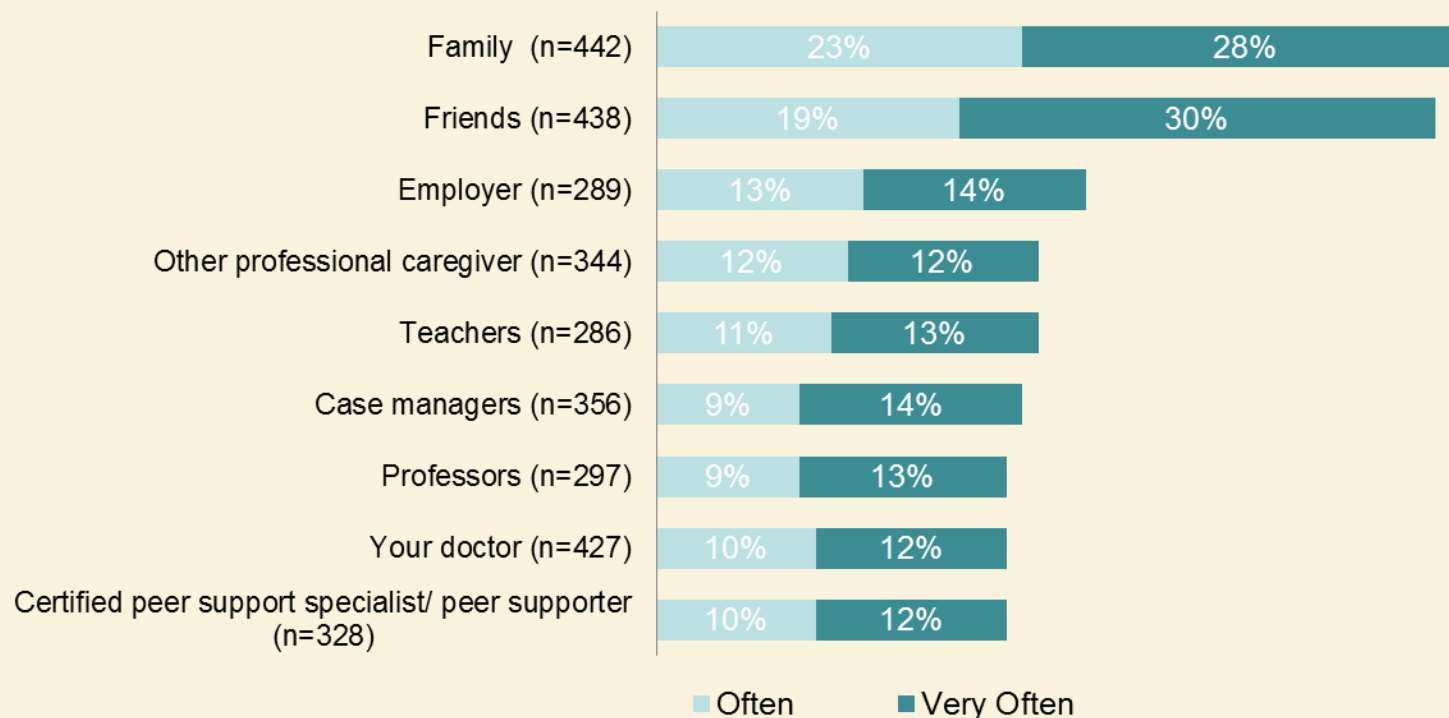
Those living with schizophrenia spend the most time on a personal computer or smart phone.

Time Spent on Activities
(Mean Hours)



Use of Technology to Communicate

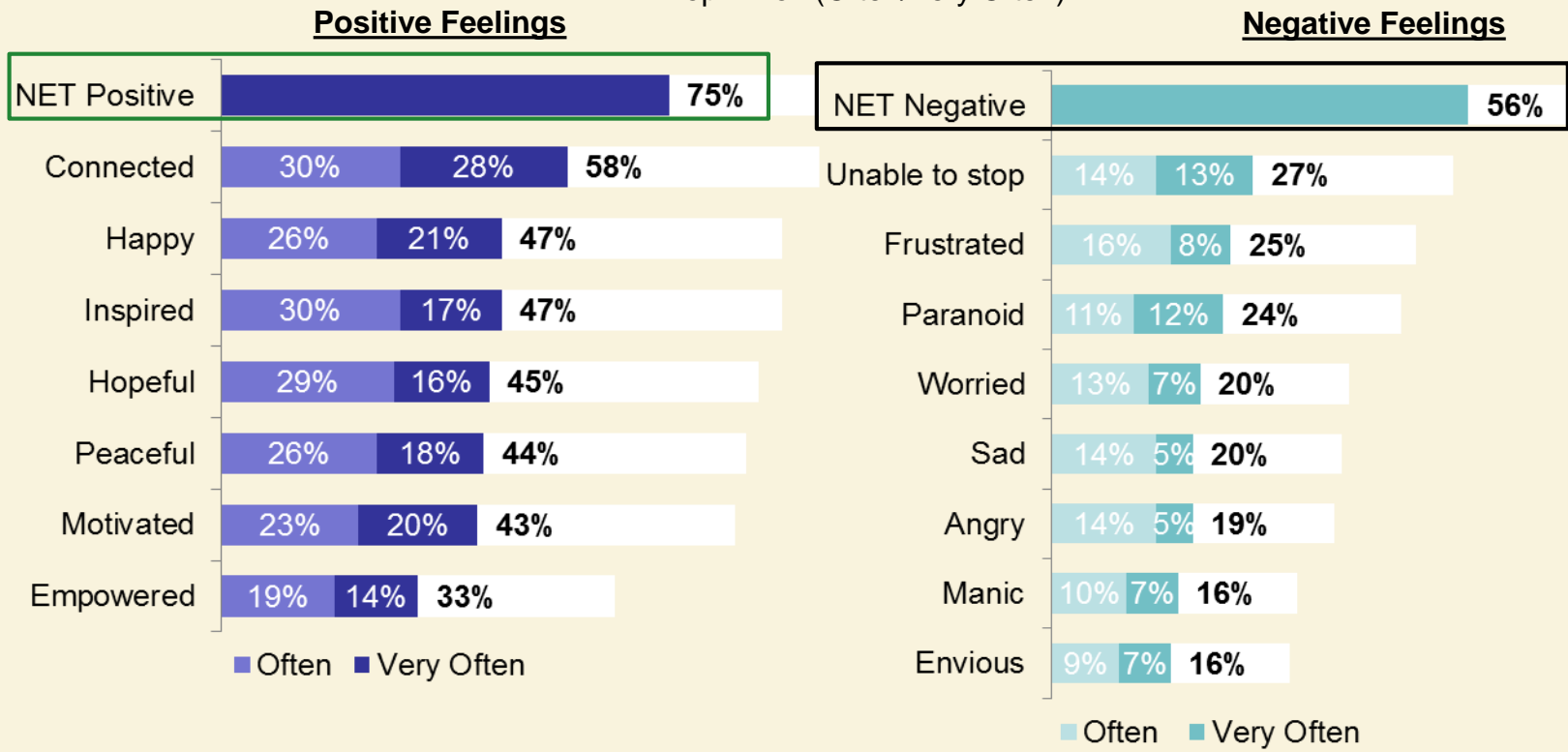
% Who Use Technology To Communicate With People
Top 2 Box



Those living with schizophrenia aged 18-34 are more likely than their counterparts (35+) to use a computer, tablet or cell/smartphone to communicate with family members, other professional caregiver, and a certified peer support specialist.

Feelings Cause By Using Technology

Feelings Caused By Use Of Technology
Top 2 Box (Often/Very Often)

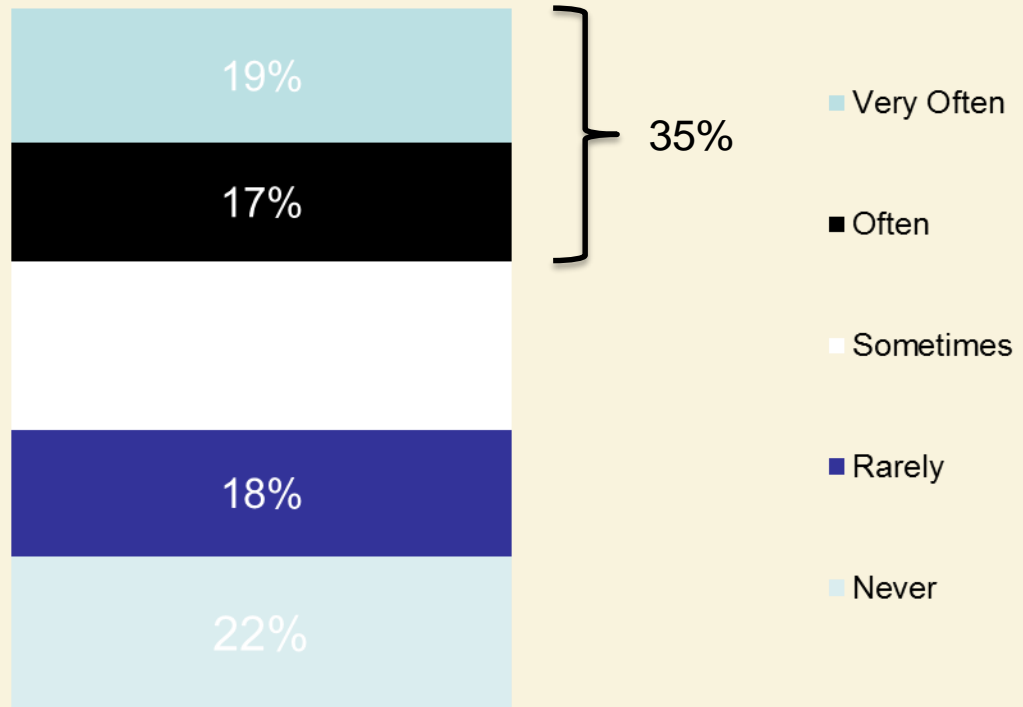


Excessive use of the internet

Use Of The Internet Excessively In The Past 6 Months

Men living with schizophrenia are more likely than women to have rarely/never used the Internet excessively in the past six months.

Younger people living with schizophrenia (18-34) are more likely than those aged 35+ to say they have used the Internet excessively.



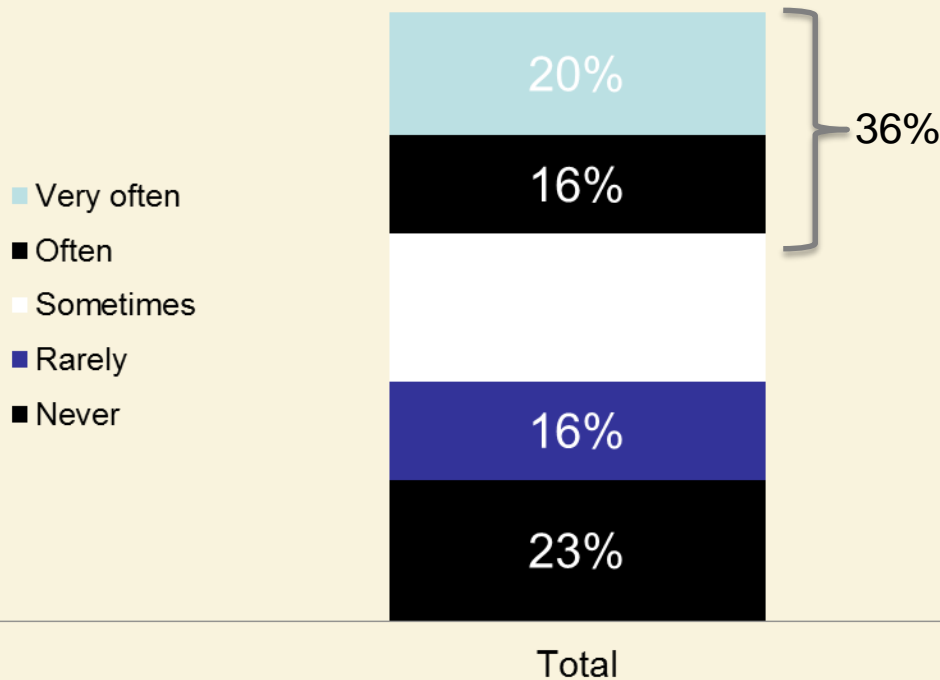
Total

Experience with Technology— some observations

- **People living with schizophrenia have access to personal technology at similar rates as the general population.**
- **Younger people living with schizophrenia uses personal technology more than older people with schizophrenia.**
- **A majority of people living with schizophrenia report feeling positive about their use of technology.**
- **Women and younger people report using technology more excessively than men and older individuals.**

Frequency of use of technology to cope with schizophrenia

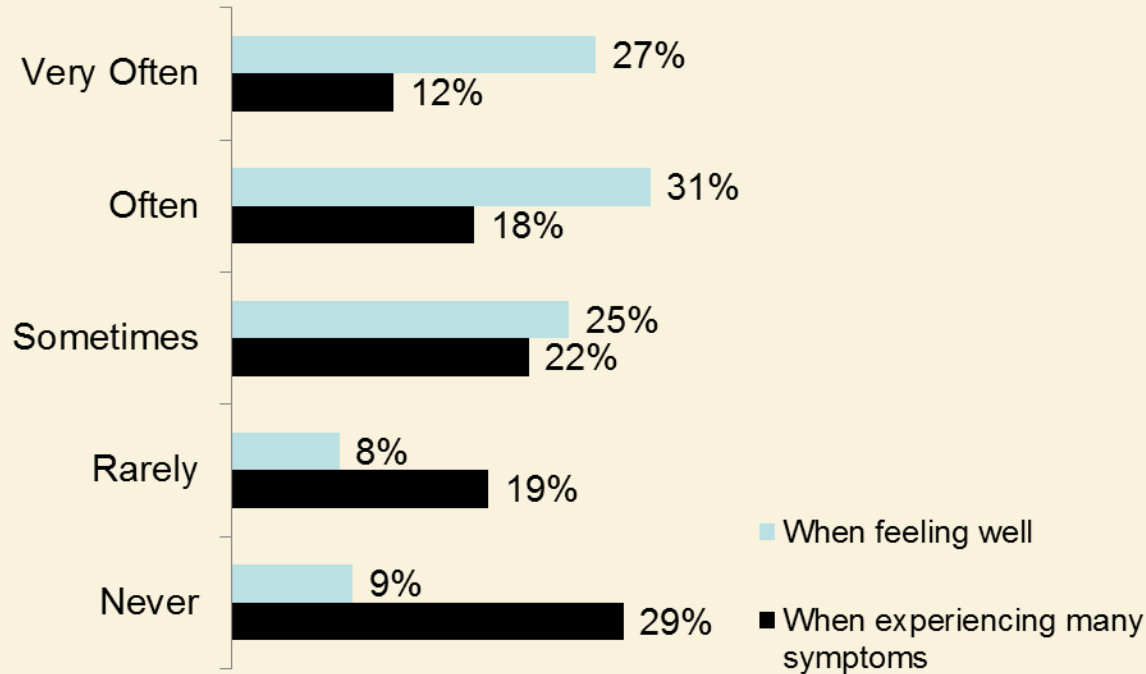
Use Of Technology To Cope With Schizophrenia



Those living with schizophrenia aged 18-46 are more likely than their older counterparts (47-64) to use technology to help them cope with schizophrenia.

Use of technology when feeling well or experiencing symptoms

Use Of Technology To Communicate With People

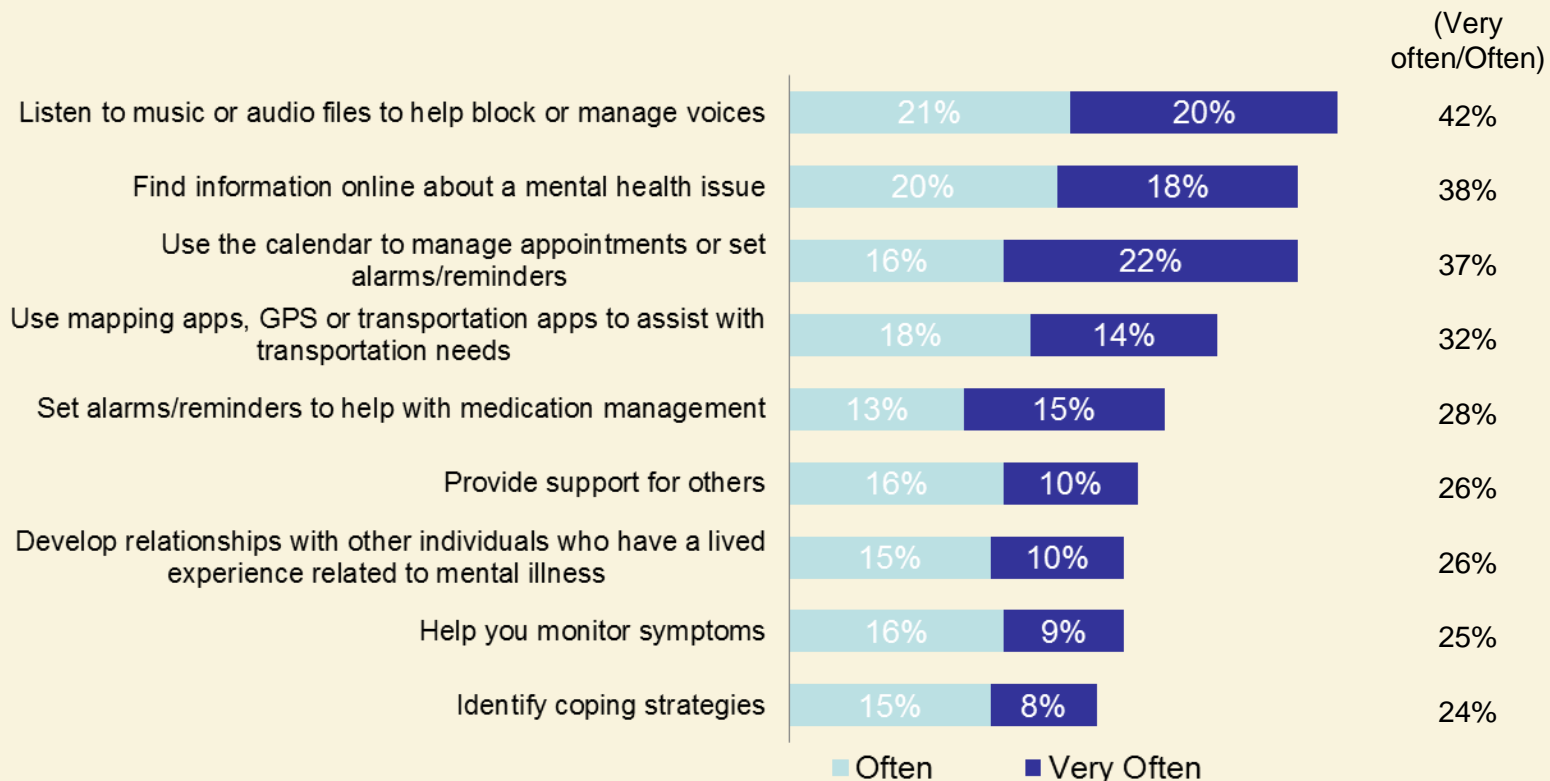


Men living with schizophrenia are more likely than women to never use technology to reach out to other people when they are experiencing many symptoms (35% vs. 23%).

Younger people living with schizophrenia aged 18-34 are more likely than those aged 47-64 to use technology often to communicate with others when experiencing many symptoms (40% vs. 22%).

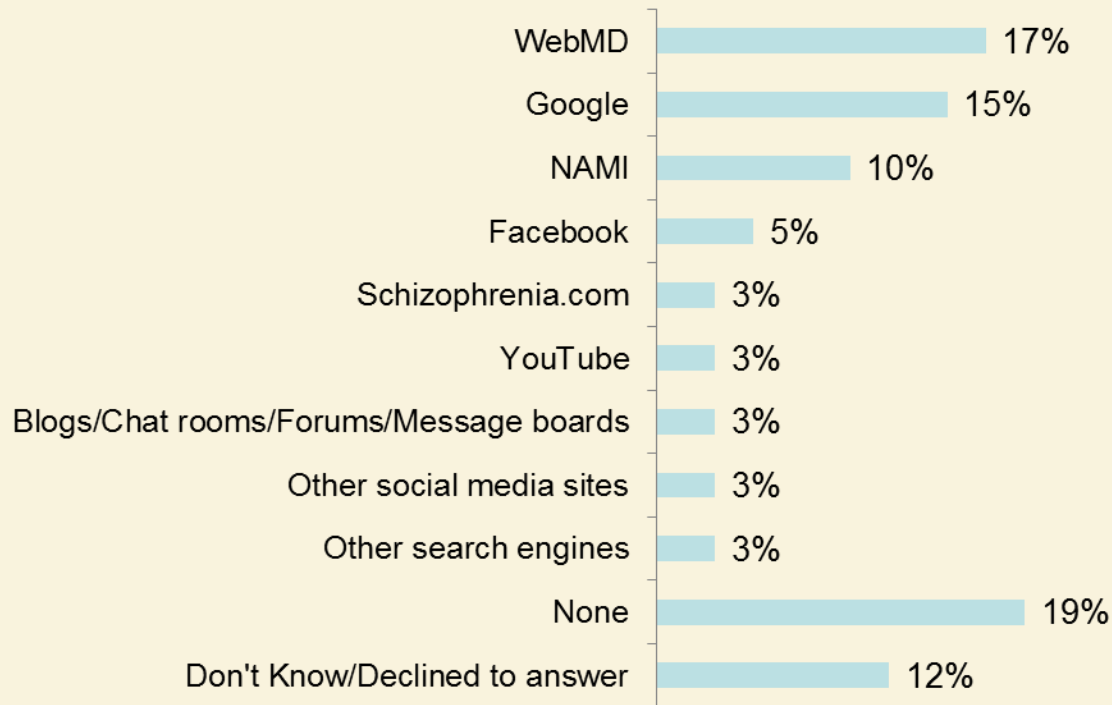
Use of technology for activities

% Who Use Technology To Do The Following



Websites Used For Wellness/Recovery

Websites Visited For Information Related To Wellness/Recovery





Use of Technology

Use of Technology—some observations

- **Younger people use technology more to help them cope than others.**
- **Men and younger people report using technology more when they are experiencing symptoms than women and older individuals.**
- **Some of the ways people living with schizophrenia use technology are unique to the condition—helping them block or manage voices, develop relationships with those who also live with schizophrenia.**



Demographics

Demographics

Gender	Total (n=457)
Male	54%
Female	46%
Age	(n=457)
18-34	39%
35-46	23%
47-64	30%
65+	8%
Mean	41.3
Ethnicity	(n=457)
White	71%
Hispanic	7%
Black/African American	14%
Asian or Pacific Islander	3%
Native American or Alaskan Native	1%
Mixed Race	*
Some other race	1%
Decline to Answer	3%
Highest Level of Education	(n=457)
High school or less	36%
Job specific training program(s) after high school	11%
Attended College or College Degree	47%
Attended Graduate School or Graduate Degree	6%
Household Income	(n=457)
Less than \$24,999	48%
\$25,000 - \$49,999	20%
\$50,000 – 99,999	17%
\$100K or more	9%
Decline to answer	7%

Demographics

Employment Status	Total (n=457)
Full time	19%
Part time	12%
Self-employed	4%
Not employed, but looking for work	7%
Not employed and not looking for work	4%
Not employed, unable to work due to a disability or illness	33%
Retired	9%
Stay-at-home spouse or partner	7%
Student	5%
Health Insurance Status	(n=457)
Covered	90%
Not Covered	10%
Type of Health Insurance Among Those Covered	(n=415)
Health insurance or HMO through work or union or someone else's work or union	13%
Health insurance or HMO bought directly by me or another member of my family	12%
Medicare or a Medicare HMO	38%
Medicaid, Medicaid HMO or medical assistance	32%
Health insurance from some other source	5%
Region	(n=457)
East	22%
Midwest	26%
South	30%
West	22%

Conclusions and Considerations

- **There is a subset of individuals living with schizophrenia who often have access to several mobile and Internet connected devices such as smartphones and personal computers.**
- **They use them in a similar manner as the general population: to make phone calls, browse the Internet, and send text messages.**
- **Our results suggest they use technology in positive ways—for coping, appointments and medication reminders, and connection to family, friends, and peers.**
- **A subset suggests a risk of overuse, as in the general population.**

Conclusions and Considerations

- **While our survey does not inform us that there are those who are not connected, understanding those who are underscores the potential and fact that schizophrenia should not be considered a barrier to mHealth (mobile health) innovation and the use of digital health tools.**
- **Our survey also suggests that technology alone is not a panacea and that there are potential risks associated with technology use.**
- **As technology and mHealth continue to expand, it is critical we that we study and understand how mobile devices and Internet tools can be used to further promote recovery in people living with schizophrenia.**

Limitations of the Study

- **Self reported data.**
- **Internet access is part of the requirements of the survey.**
- **Survey population shows high engagement in treatment.**
- **Unknown what percentage of individuals living with Schizophrenia this survey represents.**

Questions, Comments, Considerations

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Beyond Treatment as Usual: The Case for Cognitive Enhancement Therapy

**Ray Gonzalez, ACSW, LISW-S
Center for Cognition and Recovery, LLC**



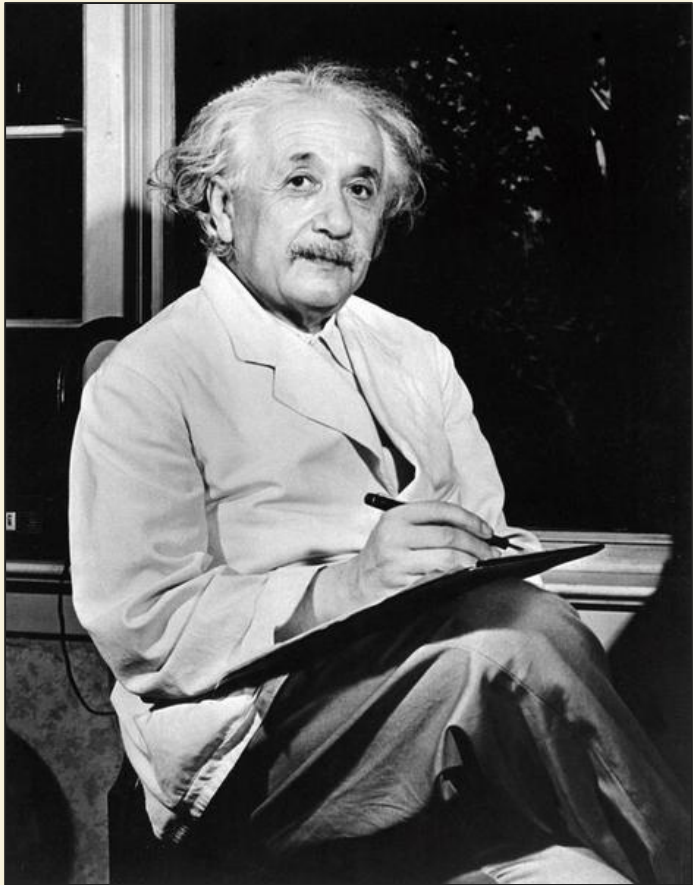
Active Treatment vs. Maintenance Management

- I have been a psychiatric social worker for over 35 years and have seen great improvements/changes in meds and treatments.
- But we in the mh recovery field are still stuck doing the same old, same old.
- Technology can help us to break out of old patterns and try new solutions.

Active Treatment vs. Maintenance Management

- **To learn new ways of thinking and responding to our environment we need to work different parts of our brain, often at the same time, technology helps us to do this.**
- **We are using technology along with group and individual therapy to help our clients learn how to be active, abstract thinkers.**

What do. . .



Albert Einstein



Steven Levitt

Co-Author of Freakonomics



Stephen Dubner

Co-Author of Freakonomics



LeBron James

...HAVE IN COMMON?

An ability to see, think and act
outside of the box of normal
expectations.

“Insanity is doing the same thing
over and over again and expecting
different results.”

Einstein

“Whatever part of the problem you are trying to solve, make sure you’re not just attacking the noisy part of the problem that happens to capture your attention.”

**Levitt and
Dubner**

LeBron James

Went from being a great inside threat to being an all around MVP because he focused on his weaknesses, not just on his strengths.

Active Treatment vs. Maintenance Management

- **Do we, as mental health professionals, have those abilities to think outside of the box?**
- **Or are we too focused on the noisy part of mental illness: the positive symptoms?**

Active Treatment vs. Maintenance Management

- **We need to redefine the problem as “Incomplete Recovery” and view it as impaired cognitive and social functioning rather than the noisier, acute psychotic symptoms. Such thinking leads to innovative solutions and not to Treatment As Usual (TAU).**

Cognitive Deficits are Very Common in Schizophrenia

- **84% of persons recovering from Schizophrenia meet the criteria for Clinically Significant impairment of cognition, scoring at least one standard deviation below norms is at least two ability areas.** Reichenberg et al, Schizophrenia Bulletin 2009, 35 (5): 1022-29
- **Up to 98% perform worse on cognitive test than their premorbid functioning or mother's education level would predict.** Keefe et al, Biological Psychiatry, 2005, 57 (6): 688-691

Similar Cognitive Deficits Found in Schizophrenia, Bipolar Disorder, Chronic Depression and ASD

- Attention/Distractibility
- Processing Speed
- Working Memory
- Executive Functioning

Results in Social Cognition Deficits

- Problems taking another person's perspective.
- How to function wisely in novel social and vocational situations.

Old Thinking About the Brain

- **The brain does not change.**
- **Once a brain is damaged, it can not be improved.**
- **We have a fixed number of brain cells and synaptic connections.**
- **Old dogs and humans can not learn new tricks, but we now know that improved cognition is possible at all ages, a little slower perhaps, but we can learn.**

New Brain Facts

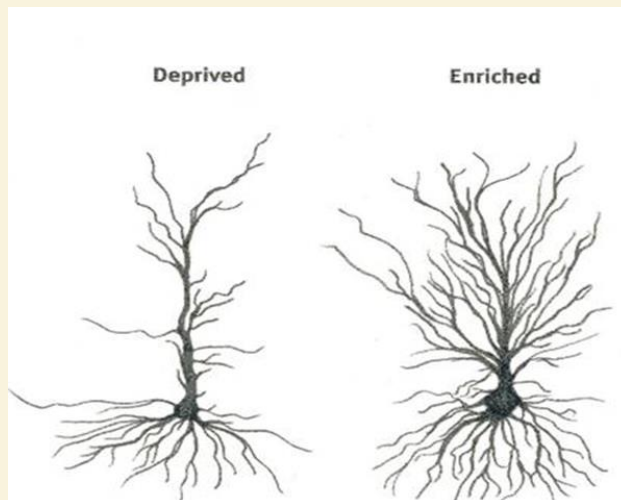
- The average human brain has about 100 billion **neurons**.
- Each neuron may be connected to up to 10,000 other neurons, passing signals to each other via as many as 1,000 trillion **synaptic connections**.
- Your hippocampus, the part of the brain that's super important for learning and memory, actually does create new brain cells during adulthood—about 1400 neurons per day.

Cognitive remediation and CET is based on Neuroplasticity

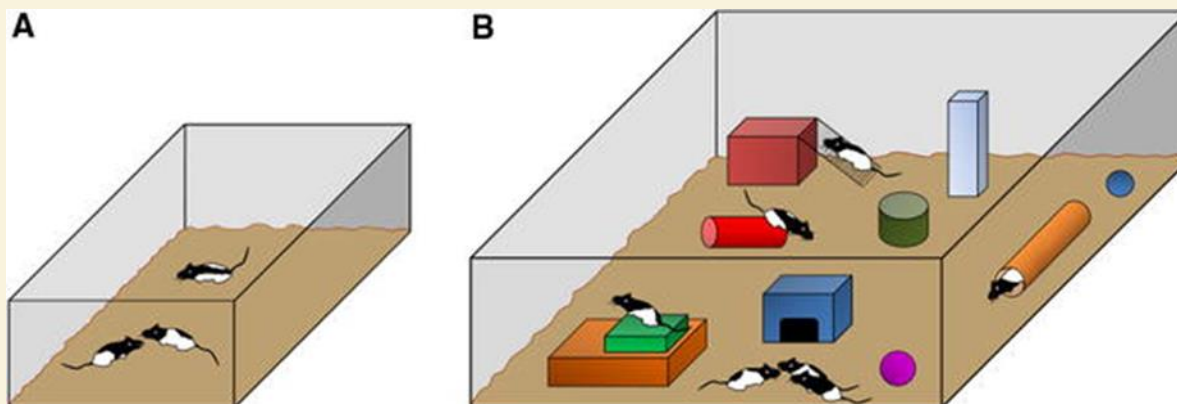
- **Neuroplasticity refers to the brain's ability to re-organize itself through forming new neural connections or by adding cells.**
- **Neuroplasticity allows the neurons in the brain to adjust their activity and organization in response to new situations or to changes in the environment.**



Environmental enrichment leads to neuronal proliferation

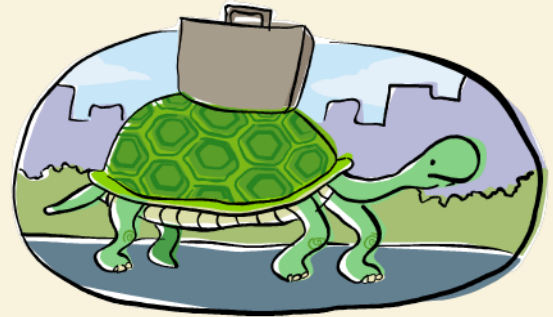


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M. Keshavan, MD



CET Focuses on Negative Symptoms Of Schizophrenia

- Flat or blunted emotion
- Lack of motivation or energy
- Often on auto pilot
- Lack of pleasure or interest in things

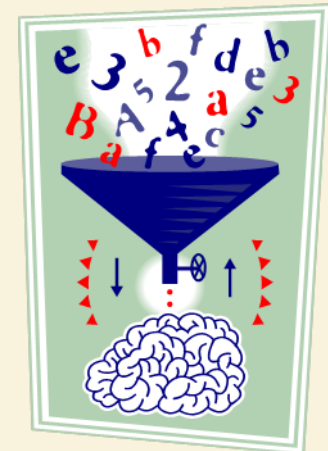


Cognitive difficulties are also usually present:

- Slow, effortful thinking process
- Concrete thinking
- Poor concentration and memory

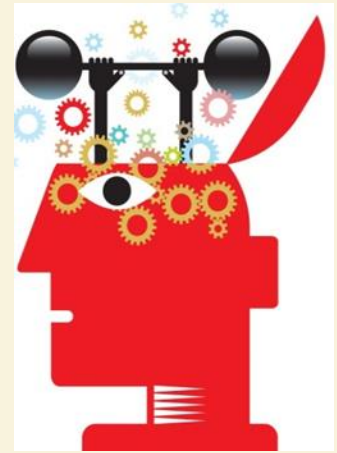
CET is an active treatment that changes our clients' brains:

- To have an increased capacity to learn.
- To remember what they learn.
- To act in real time.
- To improve their social cognition.
- To act wisely in novel social and vocational situations.
- To have hope.



What is CET?

- **CET is an EBP form of cognitive remediation that aims to improve brain functioning.**
- **For stable clients who have plateaued but have not fully recovered.**
- **Combination of specialized computer exercises, social cognition groups and individual coaching.**
- **Utilizes a coaching methodology.**
- **48, once-a-week sessions.**
- **70 to 90% attendance and graduation rates**



Components of CET

- **Specialized computer exercises done in pairs in a group setting.**
- **Homework reporting in social cognition group, no one can hide.**
- **Weekly Psycho-Ed talks.**
- **Cognitive Group Exercises done in pairs in front of group with diplomatic feedback by group members.**
- **Individual “coaching” once a week.**



Computer Exercises Work the Brain (and they are fun too!)



COGNITIVE ENHANCEMENT THERAPY

Tuesday, January 16, 2007

Group #9, Session 20

Welcome Back: Judy

Selection of Chairperson:

Review of Homework:

- a) Describe a recent situation in which you disagreed with another person
- b) Describe your perspective
- c) Describe their perspective

Psycho-Educational Talk: Foresightfulness

Speaker: Ray

Exercise: Word Sort

Coach: Judy

Participants: Sam and Jo

Feedback: Everyone

Homework:

Tell about a time when you could have been more foresightful.

Tell how being foresightful would have made the situation different.

Next Group Meeting is Tuesday January 23, 2007

"White Bread"

25 Words

Sort into five categories (five words each) and then again into another five categories.

motor
Tracy
windshield
Wally
milk
tomato

Francine
Wendy
salsa
Fred
Sally
tomato

Tom
Monday
Mark
Sam
Friday

Wednesday
Martha
front end
white bread
fish
spark plug
tire

Thursday
Sue

Accurate and Diplomatic Feedback

- Intellectual
- Emotional
- Teamwork
- Response to Coach



Effects of CET on Employment Outcomes in Early Schizophrenia; Eack, et al

Variable	CET (N = 24)		EST (N = 22)	
	N	%	N	%
Competitively employed	13	54	4	18
Job status				
Full time	6	25	3	14
Part time	7	29	1	5
Employment pattern				
Achieved employment	10	42	2	9
Maintained employment	3	12	2	9
Lost employment	0	0	6	27
Job category ^a				
Professional	1	5	0	0
Clerical/sales	5	23	1	5
Skilled manual labor	1	5	0	0
Unskilled labor	4	18	3	14
	M	SD	M	SD
Weekly earnings	207.92	337.97	69.77	156.47
Satisfaction with employment status ^b	2.46	1.56	3.77	1.69

CET Addresses the Impact of Impaired Cognitive Functioning on Physical Health

- Promotes awareness of own physical health.
- Improves ability to communicate with others, especially primary health care providers.
- By increasing memory, improves follow through on medical treatment, e.g. medication compliance, M.D. appointments, diet, etc.
- Expands capacity to establish social supports and self initiation.



Reduces need for high demand services

InterAct Michigan, Kalamazoo MI

- 156 hospital bed days for the 17 CET Graduates, the year prior to CET (7 clients)
- 10 bed days for the CET treatment year (1 client)
 - **146 less bed days, a 93.5% reduction**
 - The average national cost of a psychiatric bed day is \$1565 (as reported by Liz Szabo's article in USA TODAY, 5/12/14 "*Cost of not caring: Nowhere to go. The financial and human toll for neglecting the mentally ill.*")
 - **Using that average national cost, those 146 less bed days would equal \$228,490 in reduced costs (146 days X \$1,565 cost per bed day).**
- 13 months post CET graduation
 - 20 bed days (2 clients, data as of 1/1/15)
 - **Sustained 87% reduction in bed days**
- --41 bed days (3 clients from 1-15-15 to 4-1-16)

A continuing 74% reduction in bed days usage from the year prior to CET treatment year

Future Development and Expansion of the Use of Technology in the Recovery Process

- **Use of computer “games” will continue to expand and be more targeted**
- **Still will need a “Coach” to teach, motivate**
- **Need to focus on social cognition learning as well as the cognitive rehabilitation of persons in recovery**
- **We are social creatures that learn best in group settings not isolated in front of a monitor.**
- **I like coming to CET because you treatment me like I have a brain.**

Center for Cognition and Recovery, LLC

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CETCLEVELAND®

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Prevention Works



Treatment is Effective



People Recover