Evidence-based practice and the search for intervention effectiveness: Why context matters? or Why depressed rats hide their marbles ?

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Overview of Presentation

- How do brain scientists, Campbell Collaborators and Evidence-based Practice (EBP) researchers conceive of “robust” findings and intervention effectiveness?
- What is the “nomothetic fallacy” in seeking intervention “robustness”?
- What is the “idiographic fallacy” in seeking intervention uniqueness?
- Is there a middle road, between the two?
- What should practitioners know in choosing interventions?
- How can academic researchers contribute to contextualizing knowledge of interventions?
- How can practitioners contribute to contextualizing knowledge of interventions?
- In answering these and other questions, I review the practice-based research findings of several Clinical Data-Mining (CDM) studies that demonstrate the importance of “contextualization”.

Dual Inspiration for This Talk

- Invitation to give a Plenary at the Second International Conference on Practice Research in Helsinki last May.

- University of Hong Kong PhD Dissertation by Herman Lo (2011) on group CBT for depression and anxiety in Hong Kong adults.

Q. What was the 1st International Conference on Practice Research?

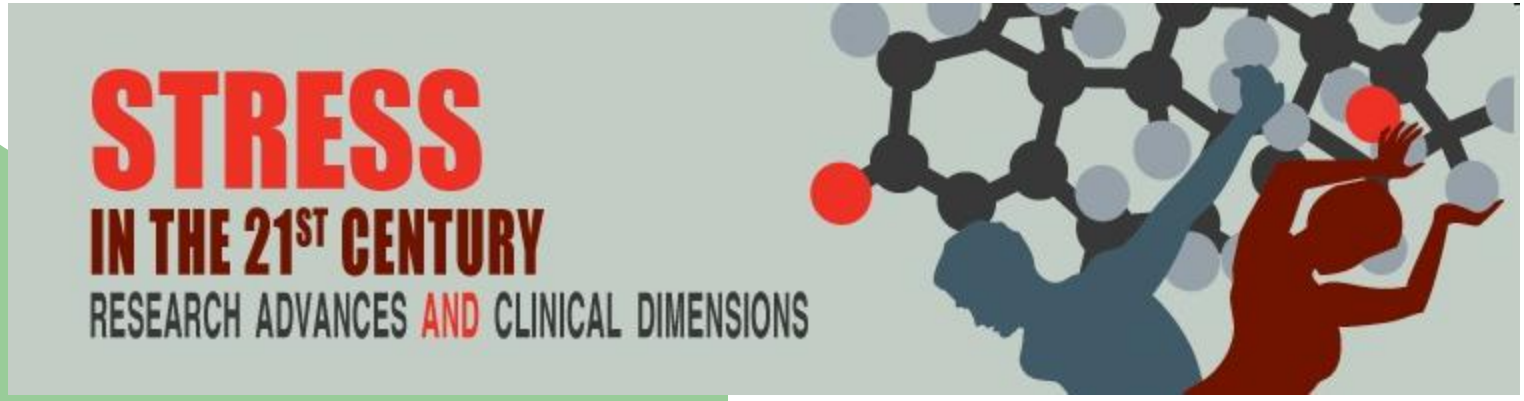
A.

- In 2008 in Salisbury England an international group of practitioners and academics from Canada, Israel, Italy, Nordic countries, Singapore, UK and USA met to answer the question: “How can professional practice be researched better, to provide a basis for improved practice?”
- This group issued the “Salisbury Statement” which describes principles of practice-based research.
- <http://www.socwork.net/sws/article/view/2/12> *Social Work & Society, International On-line Journal* (2011) 9/1

The 2012 Helsinki Conference theme—"How can we produce more robust findings in practice research"?

Title of my talk—"btw, what do we mean by robust"?

Conference on the Stressed Brain



http://genecenter.hunter.cuny.edu/index.php/symposium2012-home

First Presenter

- Julio Licinio, M.D. - Australian National University
  “Translational Approaches to the Shared Biology of Stress, Depression, and Obesity”
- “the interface between depression and obesity can be explored both clinically (in human) and in animal models”
- “one of our most **robust** indicators of depression in rats, is how quickly they hide marbles”

Q.What does Licinio mean by “robust”?

A.

- Observable
- Quantifiable
- Reproducible
- Highly correlated with other behaviors in rats and humans that are associated with depression, e.g., unhealthy food preferences, alcohol intake, smoking, etc.

Q. Why do depressed rats hide their marbles? A.

- Licinio studies changes in brain chemistry (dopamine) and how depressed rats essentially medicate themselves
- But he doesn't explain why they hide their marbles
- I suspect that rats know instinctively that marbles represent a valuable resource and that other rats will take them if they get the chance. That's why they call them "rats".

Q. How does Licinio induce depression in rats?

A. Too depressing to even think about.

- 88 results in .22 seconds
- **robust** knowledge base
- **robust** interventions
- **robust** software applications
- **robust** international research studies
- **robust** outcome measures
- **robust** study designs
- **robust** evaluation evidence
- **robust** weighting procedures
- **robust** quantitative data
- **robust** qualitative data
- **robust** assessment tools
- **robust effect sizes**

Q. What is “effect size” and how is it measured?
A.

- The amount of variance in outcome resulting from an intervention when contextual variations are controlled via randomized experiments (RCT’s).
- Low effect size (.20)
- Moderate effect size (.50)
- High effect size (.80) or greater (can exceed 1 but rarely does)

Effect Size Citations

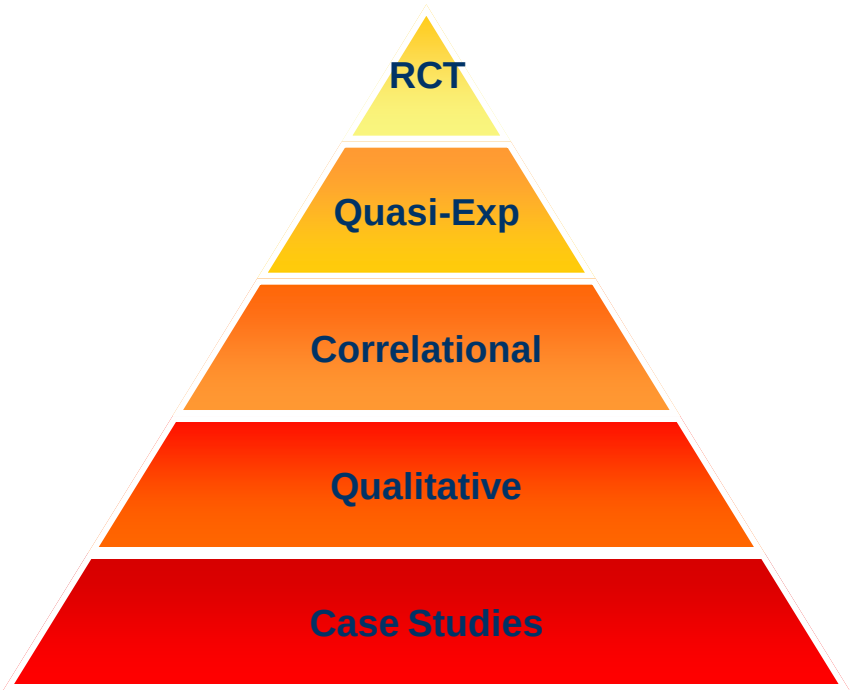
- Coe R. (2002) “It's the effect size, stupid: What effect size is and why it is important?” Paper presented at the Annual Conference of the British Educational Research Association, University of Exeter, UK http://www.leeds.ac.uk/educol/documents/00002182.htm

- Shedler, J. (2010) “The efficacy of psychodynamic psychotherapy”. *American Psychologist*. 65(2), pp.98-109.

Campbell Collaboration employs the EBP strategy for assessing intervention effectiveness

- Randomized Controlled Trials (RCT's)
- Standardized Outcome Measures and/or Rapid Assessment Instruments (RAI's)
- Systematic Reviews
- Meta-analyses
- Measurement of Effect-size

It also reflects the EBP "Hierarchy of Evidence"



EBP Researchers Seek "Universal" Statements About Tx Effectiveness

- Emphasis is on "proving" that the intervention works with everyone with a particular problem in order to "universalize" statements about intervention "robustness".
- However the methods used to universalize obscure the influence of "contextual" factors
- In other words, they generalize too much
- This is what I call "the nomothetic fallacy", --i.e., seeking univ ersal "laws" that apply to everyone.

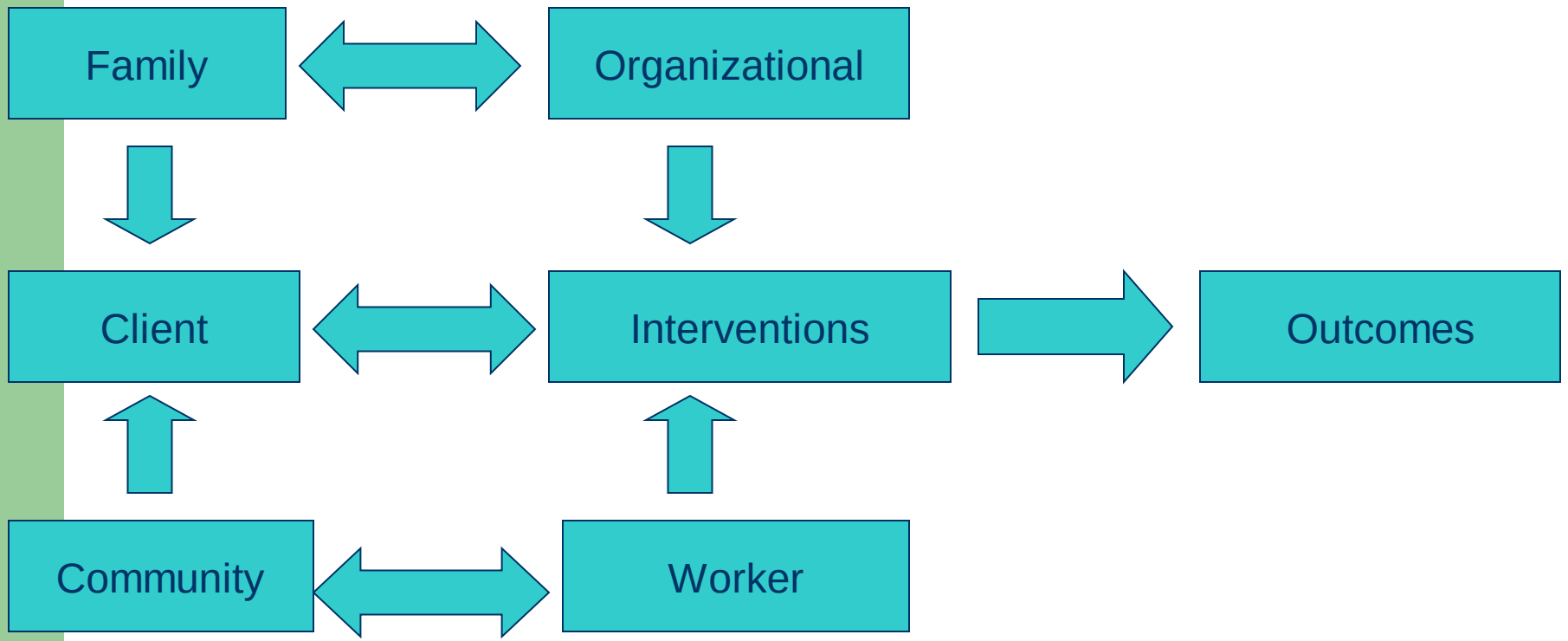
What “effect size” doesn’t tell us

- Who benefits and who doesn’t benefit from interventions?
- Under what conditions does intervention work best?
- Under what conditions does intervention not work?
- So, even if research says that “based on the best available evidence” (i.e., effect size) a given intervention is most effective, it doesn’t mean that it is effective with everyone and it doesn’t tell you under what conditions it is most effective.
- In other words, EBP researchers systematically ignore the way “context” influences the effectiveness of intervention?

What do I mean by context?

- The ways in which client variations (e.g. demographics, personality, cultural, religious, etc.) affect intervention outcomes
- The ways in which worker variations in how and where interventions are implemented affect outcomes
- The ways in which organizational and community variations affect intervention outcomes.

Re-Contextualizing Practice-Research



Notable EBP Exceptions

- Karen Grimmer's International Centre for Allied Health Evidence in which systematic attention is being given to the "contextualization" of western guidelines for allied health interventions in other cultures. http://www.unisa.edu.au/cahe
- Daniel Wong's work on "indigenization" of CBT with Hong Kong Chinese < http://ebookbrowse.com/abstract-daniel-wong-ppt-d115372477 >

What is the “idiographic fallacy” ?

- The tendency to over-emphasize the uniqueness of each case
- Researchers sometimes do this in qualitative research
- Over-emphasis on the uniqueness of each case or each intervention effort prevents us from learning anything about tx effectivess

Critical Time Intervention Research

- Chen, F. P. (2012). Exploring how service setting factors influence practice of Critical Time Intervention. *Journal of the Society for Social Work and Research*, *3,* 51-64.
- Provides excellent qualitative descriptions of the unique way in which organizational history, structure and culture affects the implementation of CTI with homeless, mentally ill adults.
- However, no outcome studies were done for CTI programs not enrolled in an RCT conducted at the same time, in the same city even though outcome measures used were LOS, Re-hospitalizations, Use of ER, etc. All easily available.
- Rejected by *RSWP* the most influential EBP research journal in the USA

Citations on Nomothetic vs Idiographic debate

- McCleod, S. (2007) “The nomothetic idiographic debate” <(http://www.simplypsychology.org/nomothetic-idiographic.html>
- Shaw, I. The positive contributions of quantitative methodology to to social work research: A view from the sidelines. *Research on Social Work Practice, 22*(2) 129-134.
- Thyer, B. (in press).The scientific value of qualitative research for social work. *Qualitative Social Work. http://qsw.sagepub.com/content/11/2/115*

Citation for RCT's with available outcome data

- "Rigorous program evaluations on a budget: How low-cost randomized controlled trials are possible in many areas of social policy" Coalition for Evidence-based Policy
- http://coalition4evidence.org/wordpress/wp-content/uploads/Rigorous-Program-Evaluations-on-a-Budget-March-2012.pdf

Advocating a “Middle-Road” between these two extremes

- “Evidence-informed” Practice (EIP) that doesn’t “privilege” RCT’s and is “methodologically pluralist”
- Practice-based research that fully engages practitioners in research efforts
- Employs quasi-experimental, qualitative and mixed-method studies
- Clinical data-mining (CDM) with available outcome data
- Studies that re-contextualize our search for effective interventions

What Is Practice-Based Research (PBR)?

Use of research-based principles, designs and information gathering techniques, *within* existing forms of practice, to answer questions that emerge from practice in ways that inform practice (Epstein, 2001).

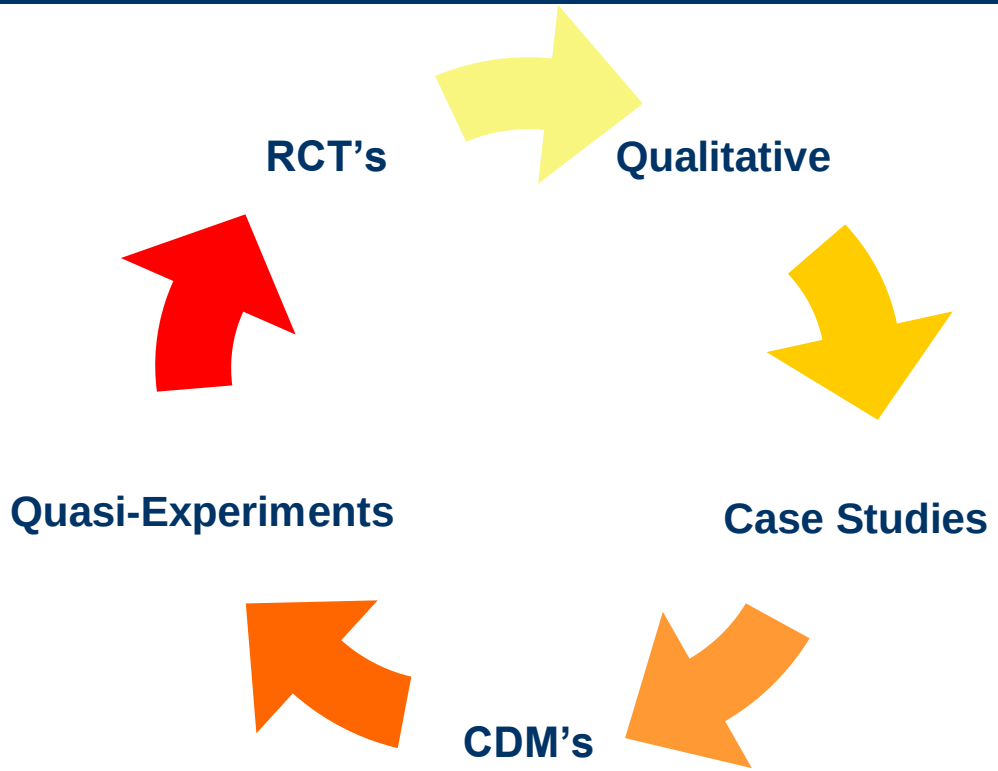
In simpler words:

“research by practitioners for practitioners”.

Basic Principles of PBR

- **Inductive—problems come practice and values "practice-wisdom"**
- **Methodologically pluralist (qual/quant/mixed)**
- **Uses designs that are compatible with practice values and program structures**
- **Uses available as well as original data**
- **Formative not Summative –about "improving" not about "proving"**
- **Uses available as well as original data**

EIP “Wheel of Evidence”



Clinical Data-Mining

Q. What Is Clinical Data-Mining?
A.

A practice-based research strategy by which practitioners and practice-oriented PhD students systematically retrieve, codify, analyze and interpret routinely available qualitative and/or quantitative data from their own records and reflect on the practice and policy implications of these data.

Epstein, I. (2010). **Clinical data-mining: Integrating practice and research.** New York, N.Y.: Oxford University Press.

Clinical Data-Mining PhD Exemplars

Group Cognitive Behavioral Therapy with Adult Depression and Anxiety

- Lo. H. (2011). A Body-Mind-Spirit Approach to Depression and Anxiety: Application of Mindfulness and Compassion Training for Hong Kong Chinese. Unpublished Ph.D. dissertation. University of Hong Kong.
- Lo, H., Epstein, I., Ng.,S., Chan, C. & Kwan, C. (2011). When cognitive behavioral group therapy works and when it doesn't?: Clinical data-mining good and poor outcomes for depression and anxiety among Hong Kong Chinese. *Social Work in Mental Health, 9*(6), 456-472.
- **Findings** – group CBT is equally effective as in American studies for as it is in Hong Kong Chinese adults suffering from depression and anxiety (i.e., similar effect sizes). However, it is still not effective with over 40% of those treated. Tx outcome was significantly affected by personality attributes, marital status, energy level, concurrent receipt of individual psychotherapy, etc.

“Good Death” in Palliative Care

- Chan, W. (2007). A Clinical data-mining study of the psycho-social status of Chinese cancer patients in palliative care. Unpublished doctoral dissertation. University of Hong Kong.
- Chan, W.C.H. & Epstein, I. (2012). Researching “good death” in a Hong Kong palliative care program: A clinical data-mining study. *Omega: Journal of Death & Dying, 64*(3), 203-222.
- **Findings** – Palliative care social work is effective in reducing Hong Kong terminal cancer pts’. levels of physical pain and anxiety. However, the effectiveness of palliative care is enhanced by reciprocity in relationships between pts. and family members (i.e., “the support paradox”).
- Is the “support paradox” unique to Hong Kong cancer pts? (nomothetic vs idiographic)

Intensive Family Preservation

- Hanssen, D. (2003). Looking into the black box of intensive family preservation services. Unpublished DSW dissertation. City University of New York.
- D. Hanssen & Epstein, I. (2006) Learning what works: Demonstrating practice effectiveness with children and families through retrospective investigation. *Family Preservation, 10,* 24-41.
- **Findings** – although the IFP program was highly effective in preventive placement (88%), specific presenting problems, sex of child and family configurations were differentially responsive to IFP tx.

Family Reunification in Foster Care

- Cordero, A. (2000). When reunification works: A family strengths perspective. Unpublished PhD dissertation. City University of New York.
- Cordero, A. (2004). When family reunification works: Data-mining foster care records. *Families in Society, 85*(4), 571-580.
- Cordero, A. & Epstein, I. (2005). Refining the practice of reunification: "Mining" successful foster care case records of substance abusing families. In Child Welfare for the Twenty- First Century: A Handbook of Practices, Policies and Programs. G.P. Mallon & P.M. Hess (Eds.), Columbia University. Pp. 392-404.
- **Findings** – In successfully reunited foster-care families, social worker intervention varies by reason for placement, stage in foster care and stakeholder group.

Workplace Trauma & Critical Incident De-Briefing

- DeFraia, G. (2011). Organizational resilience to workplace trauma: Predicting post-incident workgroup outcomes through Clinical data-Mining. Unpublished PhD dissertation. City University of New York.

- **Findings** – different traumatic incident types and organizational variables mediate the impact of Critical Incident De-briefing on post-trauma workgroup performance.

Clinical Data-Mining Practitioner Studies

Social Work Intervention with ESRD Patients (in the USA & Israel)

- Dobrof, J., Dolinko, A., Lichtiger, E., Uribarri, J. and Epstein, I. Dialysis patient characteristics and outcomes: The complexity of social work practice with the end stage renal disease population. Social Work in Health Care, 33, 3/4, 105-128.
- **Findings** – social worker intervention and psycho-social outcomes with dialysis patients differs by stage in dialysis tx, race/ethnicity of pts., etc.
- Auslander, G., Dobrof, J. and Epstein, I. Comparing social work=s role in renal dialysis in Israel and the United States: The practice-based research potential of available clinical information. **Social Work in Health Care, 33, 3/4,** 129-152.
- **Findings** – the organizational context of dialysis implementation is far different in Israel than in the USA as are the socio-demographics of pts., their presenting problems and their psycho-social outcomes. Nonetheless, social work intervention is very much the same.

Mental Health Presentations of Adolescents in New York City

- Peake, K. Epstein, I. & Medeiros, D. (Eds.), (2005). Clinical and research uses of an adolescent intake questionnaire: What kids need to talk about. Binghampton, N.Y.:Haworth Press.

- **Findings** – age, race and sex affect physical and mental health needs and presentations of low-income adolescents in New York City

Telephone-based Caregiver Support Program

- Dobrof, J., Ebenstein, H., Dodd, S. & Epstein, I. Caregivers and professional partnership caregiver resource center: Assessing a hospital support program for family caregivers. J. of Palliative Medicine, 9 (1), pp. 196-205.
- Findings- the effectiveness of a referrals from a telephone support system is significantly affected by telephone-support by gender, culture and the relationship between the caller and the pt.

Mental Health Presentations in Rural Australia

- Begg, P. & Thompson, S. (2011). Tackling solastalgia: Improving pathways to care for farming families. In Giles, R., Epstein, I. & Vertigan, A. (Eds.). Clinical Data-Mining in an Allied Health Organization: A real world experience. University of Sydney Press. Pp. 83-100.
- **Findings** – weather conditions, (e.g., drought, rainfall, etc.), age and sex affect the frequency and type of mental health presentations from farm families to community mental health settings in rural New South Wales, Australia.

These CDM studies show how context is associated with

- Who presents and who doesn't?
- What problems they present with and what they don't?
- How interventions are differentially implemented?
- Who benefits from interventions and who doesn't?
- Under what organizational conditions clients benefit in anticipated and unanticipated ways?

Harvard Medical School

Department of Continuing Education

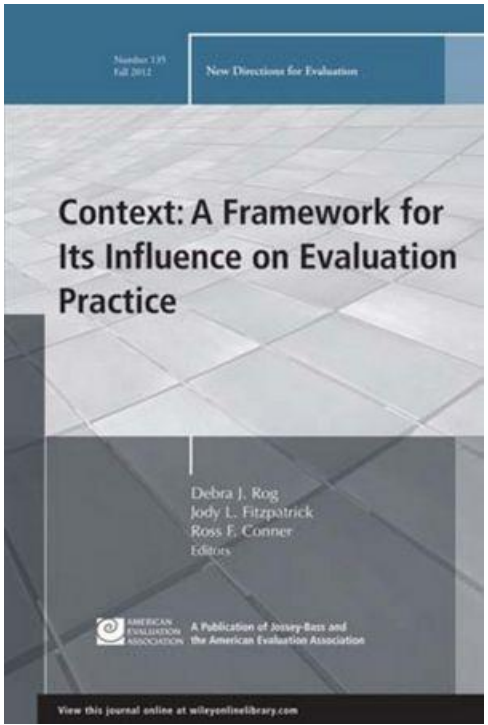
- "The Practice of Psychotherapy: Patients in Context" Conference offered by the Department of Psychiatry, Harvard Medical School, June 1-2, 2012.

- Conference purpose: to describe how sociopolitical factors, economics, gender, class, spirituality, religion and diversity affect pts' self, suffering and well-being.

- So this was not just happening in my stressed brain

American Evaluation Association

- “Context: A Framework for Its Influence on Evaluation Practice”, Rog, Fitzpatrick, Corner (Eds), Special Issue of the Journal of the American Evaluation Association, *135,* Fall 2012.



How can academic researchers contribute to re-contextualizing knowledge of interventions?

- By looking beyond “effect size” in studying intervention effectiveness
- Methodological pluralism,--i.e., stop privileging RCT’s at the expense of quasi-experimental and qualitative research (Lo’s study combines CDM & RCT)
- Use qualitative, mixed-method (qualitative and quantitative) studies to contextualize intervention research
- By truly collaborating with practitioners and encouraging them to share and test their practice-wisdom rather than dismissing it

How can practitioners contribute to re-contextualizing knowledge of interventions?

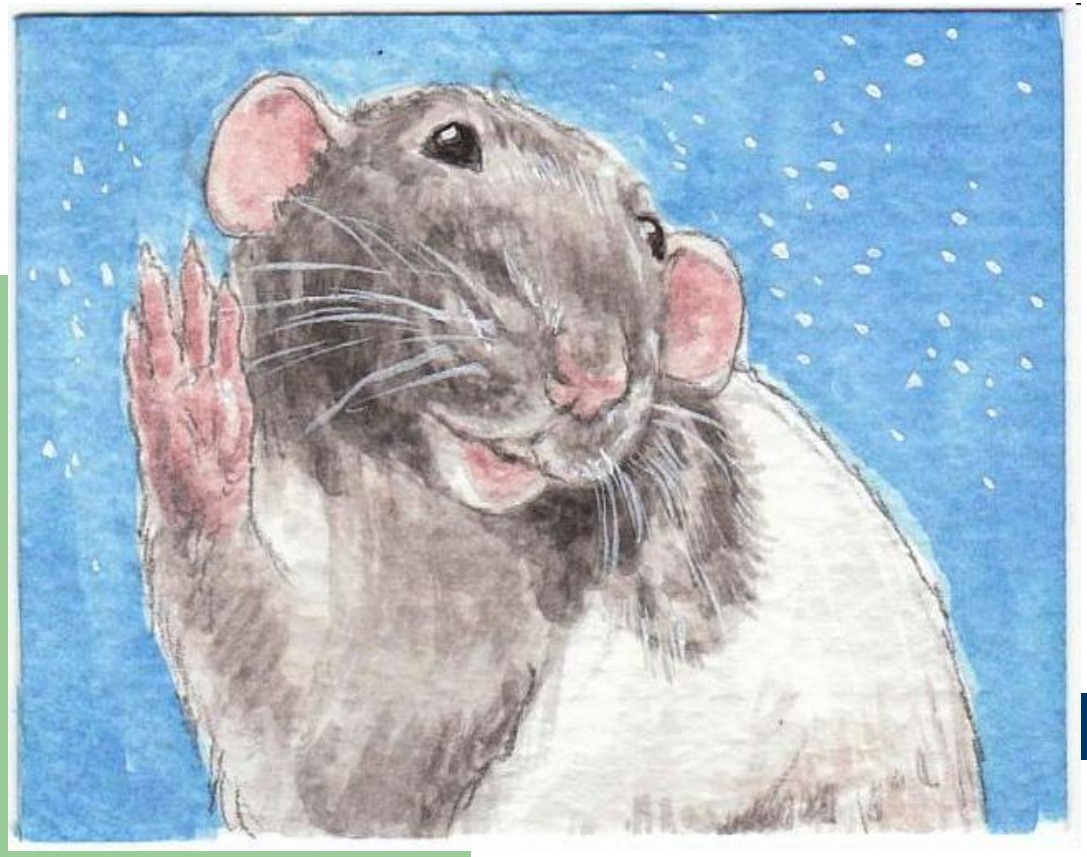
- By reflecting on how context affects their clinical decision-making
- By systematically adding practice-wisdom to “manualized” EBP guidelines
- By conducting practice-based research studies that focus on context as well as intervention
- By conducting CDM studies of their own practice

Q. How can practitioners, practitioner-researchers and academic researchers produce more robust social work knowledge?

A. Contextualize!

Contextualize!

Thank you from a



happy rat with no hidden marbles