Interactive Client Assessment Survey (iCCAS) for Common Mental Disorders: A Pilot in Community Health Center Serving Vulnerable Communities

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Outline

- Background
  - Mental health burden
  - Barriers to access/provide care
  - iCCAS development

- Methods
  - Setting
  - Mix-method design
  - Measurement

- Results and Discussion
Mental Health: Canada

(i.e. 9.1 million) meet the criteria for at least one CMD at some point in their life

Source: Making the Case for Investing in Mental Health, Mental Health Commission of Canada.
Provider’s barriers

- Time constraints
- Incorporation of new evidence
- Coordination challenges

Missed Opportunity

Example: 50% of depressed cases are not recognized in primary care (Montano, 1994; Miller, 2005)
Barriers to Access Care

- Social stigma
- Limited understanding about MH
- Low knowledge about treatment and care options

↑ magnitude among vulnerable groups

Social Determinants of Health
Immigrant Population
Reporting "Fair" or "Poor" Health

Source: Newbold KB. Self-rated health within the Canadian immigrant population: Risk and the healthy immigrant effect. Social Science and Medicine, 2005.
eHealth Innovation

Computer-Assisted Client Assessment Survey (iCCAS) is a user-friendly, touch-screen tablet self-assessment completed by clients during their waiting time before seeing their clinician.

Client / Patient focused
e.g., Internet Kiosks Networking sites

Clinician Focused
e.g. handheld devices with decision-trees on Tx and diagnosis

Web 2.0 interactive tools
Clinician & Patient focused
Researchers, clinicians, advisors

- Farah Ahmad
- Peggy Ng
- Liane Ginsburg
- Serban Dinca-Panaitescu
- Kwame McKenzie
- Wendy Lou
- Meb Rashid
- Access Alliance
  - Cliff Ledwos
  - Yogendra Shakya
- York University
- COSTI
  - Vince Pietropaolo
- North York General
  - Alan Fung
- CamH
- University of Toronto
- Dalla Lana Public Health
- CIHR
  - Canadian Institutes of Health Research
- IRSC
  - Institut de recherche en santé du Canada
What is iCCAS?

- Assess depression, anxiety, post-traumatic stress & alcohol use via validated scales
- Ask about key social determinants of health
- Produce tailored reports for patients and providers
- Reach pts in multiple languages -> English & Spanish
What iCCAS screens for?

- Depressive disorders: PHQ-9
- Anxiety disorders: GAD-7
- Post-traumatic stress disorder (PTSD): PTSD-Primary Care
- Alcohol problems: CAGE
Advantages

**Patient level comfort**
- Non-judgemental mode of inquiry
- Reflection time prior to disclosure
- Skip patterns for time efficiency
- Accuracy of responses
- Tailored feedback

**Provider level convenience**
- Save screening time for enhanced focus on care
- Standardize screening/assessment

**Organization level data**
- Service improvement, resource allocation & advocacy
Study Setting

- Access Alliance Multicultural Health and Community Services’ mandate is to serve vulnerable immigrants, refugees, and their communities.

- Three locations in Toronto

- Access Alliance provides
  - Primary care
  - Illness prevention and health promotion
  - Community capacity building
  - Service integration
Study design

Mix-method: Two-arm pilot randomized controlled trial (RCT) followed by qualitative clinician and patient interviews, and chart review.

Objectives

- Efficacy of iCCAS in improving patient discussion (via exit survey) and clinician detection (via chart review) of the four included CMDs, compared to usual care.

- Perspectives of clinicians and patients
Study Participants

- *Participants*
  - FPs and NPs
  - Patients ≥18 yrs (English or Spanish speaking) seeing a FP or NP

- *Measurement*
  - Patient Exit Survey
  - Chart Review
  - Semi-structured qualitative interviews
Randomized Controlled Trial - RCT

Assessed for eligibility (n=1248)

Ineligible (n=1049)
- Eligible (n=199)
  - Excluded (n=3)
  - Declined (n=42)

Randomly assigned (n=154)

iCCAS
- Allocated (n=77)
  - Incomplete = 1

Usual Care
- Allocated (n=77)

*Providers offering intervention (n=8)

**Providers offering usual care (n=8)

Excluded from Analysis
- *Anomaly = 1

Excluded from Analysis
- **Anomalies = 5

Exit Survey = 75
- Chart Review = 75

Exit Survey = 72
- Chart Review = 72

*Patients treated by each provider (med = 17.5; min 5; max 18);
**Patients treated by each provider (med 16.5; min 5; max 17)
* repeat participation; ** 1 under age; 2 seeing other provider; 2 repeat participation
<table>
<thead>
<tr>
<th>Variable</th>
<th>iCCAS (n = 75)</th>
<th>Usual Care (n = 72)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, m (SD)</strong></td>
<td>36.5 (12.7)</td>
<td>37.5 (12.2)</td>
</tr>
<tr>
<td><strong>Sex, n (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26 (34.7)</td>
<td>27 (37.5)</td>
</tr>
<tr>
<td>Female</td>
<td>49 (65.3)</td>
<td>41 (56.9)</td>
</tr>
<tr>
<td>Transgender</td>
<td>0 (0.0)</td>
<td>4 (5.6)</td>
</tr>
<tr>
<td><strong>Language, n (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>59 (78.7)</td>
<td>56 (77.8)</td>
</tr>
<tr>
<td>Spanish</td>
<td>16 (21.3)</td>
<td>16 (22.2)</td>
</tr>
<tr>
<td><strong>Relationship, n (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/In relationship</td>
<td>47 (62.6)</td>
<td>47 (65.3)</td>
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<tr>
<td>Separated/Div/Widow</td>
<td>11 (14.7)</td>
<td>10 (13.9)</td>
</tr>
<tr>
<td>Single, not in relationship</td>
<td>18 (24.0)</td>
<td>16 (22.2)</td>
</tr>
<tr>
<td><strong>Immigrant, n (%)</strong></td>
<td>74 (98.7)</td>
<td>70 (97.2)</td>
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<tr>
<td><strong>Citizenship, n (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada/Resident</td>
<td>54 (72.0)</td>
<td>50 (69.4)</td>
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<tr>
<td>Other</td>
<td>21 (28.0)</td>
<td>22 (30.6)</td>
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<tr>
<td><strong>Yrs in Canada, n (%)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Less than 5</td>
<td>41 (54.7)</td>
<td>36 (50.0)</td>
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<tr>
<td>Five or more</td>
<td>34 (45.3)</td>
<td>36 (50.0)</td>
</tr>
<tr>
<td>Variable</td>
<td>iCCAS (n = 75)</td>
<td>Usual Care (n = 72)</td>
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<tr>
<td>---------------------------</td>
<td>----------------</td>
<td>--------------------</td>
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<tr>
<td>Education, n (%)</td>
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<tr>
<td>Less than grade 12</td>
<td>38 (50.7)</td>
<td>34 (47.2)</td>
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<tr>
<td>College or more</td>
<td>37 (49.3)</td>
<td>38 (52.8)</td>
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<tr>
<td>English language, n (%)</td>
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<tr>
<td>Less than good</td>
<td>19 (25.3)</td>
<td>18 (25.0)</td>
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<tr>
<td>Good or more</td>
<td>56 (74.7)</td>
<td>54 (75.0)</td>
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<tr>
<td>Employment, n (%)</td>
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<tr>
<td>Employed</td>
<td>26 (34.7)</td>
<td>25 (34.7)</td>
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<tr>
<td>Not employed</td>
<td>49 (65.3)</td>
<td>47 (65.3)</td>
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<tr>
<td>Annual HH income, n (%)</td>
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<tr>
<td>Less than 20k</td>
<td>48 (64.0)</td>
<td>46 (63.9)</td>
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<tr>
<td>20k-30k</td>
<td>12 (16.0)</td>
<td>18 (25.0)</td>
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<td>30k-40k</td>
<td>8 (10.7)</td>
<td>2 (2.8)</td>
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<td>40k-60k</td>
<td>2 (2.7)</td>
<td>4 (5.6)</td>
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<tr>
<td>More than 60k</td>
<td>5 (6.7)</td>
<td>2 (2.8)</td>
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</tbody>
</table>
Comparing 2 groups

✓ Similar in socio-demographics

✓ Self-rated health – poor/fair
  • 36% iCCAS
  • 33.3% usual care

✓ Purpose of visit – routine/follow-up
  • 72% iCCAS
  • 83.3% usual care

✓ Visit satisfaction - satisfied/v. satisfied
  • 78.7% iCCAS
  • 84.7% usual care
Comparing 2 groups

- Discussion on mental health
  - 59% iCCAS
  - 41% usual care

- Mental health related referrals
  - 20% iCCAS
  - 15% usual care

- Clinician detection, mental health concerns
  - 38.7% iCCAS
  - 27.8% usual care
## Outcome 1

### Patient Discussion

<table>
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<tr>
<th>Parameter</th>
<th>OR</th>
<th>95% CI</th>
<th>Sig.</th>
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</thead>
<tbody>
<tr>
<td>Language (English 1; Spanish 2)</td>
<td>3.02</td>
<td>1.26</td>
<td>7.25</td>
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<tr>
<td>Sex (female 1; male 2)</td>
<td>1.56</td>
<td>0.76</td>
<td>3.20</td>
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<tr>
<td>Group (iCCAS 1; Usual Care 2)</td>
<td>2.13</td>
<td>1.08</td>
<td>4.22</td>
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</tbody>
</table>

Sample 147

Generalized Linear Mix Model (GLMM)
## Outcome 2
### Clinician Detection

<table>
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<th>Parameter</th>
<th>OR</th>
<th>95% CI</th>
<th>Sig.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Upper</td>
<td>Lower</td>
</tr>
<tr>
<td>Language (English 1; Spanish 2)</td>
<td>3.02</td>
<td>1.01</td>
<td>9.03</td>
</tr>
<tr>
<td>Sex (female 1; male 2)</td>
<td>0.79</td>
<td>0.36</td>
<td>1.72</td>
</tr>
<tr>
<td>Education (college 1; &lt;12 grade 2)</td>
<td>2.31</td>
<td>1.08</td>
<td>4.96</td>
</tr>
<tr>
<td>Working (FT 1; PT 2; none 3)</td>
<td>0.17</td>
<td>0.04</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>0.56</td>
<td>0.21</td>
<td>1.56</td>
</tr>
<tr>
<td>Group (iCCAS 1; Usual Care 2)</td>
<td>1.93</td>
<td>0.91</td>
<td>4.11</td>
</tr>
</tbody>
</table>

Sample 147
Generalized Linear Mix Model (GLMM)
CMD assessment in iCCAS

CMD assessment in iCCAS group

- Already Dx & on Tx: 16%
- Depression, PHQ-9 ≥10: 30%
- Generalized anxiety, GAD-7 ≥10: 17.7%
- Post-traumatic stress, PTSD-PC ≥3: 28%
- Alcohol overuse, CAGE ≥2: 9%
CMDs screen positive & already diagnosed

- Major Depression: 22.7%
  - Screen +ve: 14.7%
  - Screen +ve and other Dx CMD: 6.7%
  - Already Dx and on Rx: 1.3%

- PTSD: 20.0%
  - Screen +ve: 9.3%
  - Screen +ve and other Dx CMD: 8.0%
  - Already Dx and on Rx: 2.7%

- Generalized Anxiety: 10.7%
  - Screen +ve: 9.3%
  - Screen +ve and other Dx CMD: 1.4%
  - Already Dx and on Rx: 0.0%

- Alcohol overuse: 5.3%
  - Screen +ve: 4.0%
  - Screen +ve and other Dx CMD: 1.3%
  - Already Dx and on Rx: 0.0%
Patient acceptance in iCCAS

✓ Computerized Lifestyle Assessment Scale
  (12 items; 5-point rating disagree, not sure, agree)
  • Benefits: 4.08 (SD .56)
  • Barriers to info privacy: 2.64 (SD .79)
  • Barriers to provider interaction: 2.82 (SD .86)

✓ Technology use
  • Completion time as acceptable: 94.7%
  • Using touch-screen easily: 97.3%
  • Following instructions easily: 93.3%
  • Reading questions easily: 94.7%
Discussion

✓ **Practice**
  - iCCAS is a useful assessment tool to incorporate into everyday practice at community health centers
  - iCCAS increases detection of mental health concerns

✓ **Policy**
  - High rates of CMDs call for attention to systematically assess mental health conditions in similar settings
Future directions

✓ **Research**
- A multi-site study with larger sample is needed to enhance generalizability and assess impact on health outcomes

✓ **Technology**
- Future use of iCCAS would benefit by integration with electronic medical records and home accessibility for patients
Question?

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