New Technologies in Psychogeriatric care: The use of Telehealth in underserved areas

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overview

• Epidemiology

• Objectives

• Results

• Conclusions
Source: U.S. Census Bureau, International Data Base.
Figure 1: Increase in numbers of people with dementia, by income group of countries
Across the EU Member States

Greece is the third European country with highest share of older people (18.9%).

share the highest old-age-dependency ratio >30.

Elderly population in Greece increased in 17 years of 794,770 subjects
• It is estimated that 27% of the elderly population experience depressive symptoms.
• Only 9% is diagnosed and even less is sufficiently treated.
• 7.3 million people suffer from dementia in Europe and among them 200,000 in Greece.
• 89% of the patients care at home - 400,000 caregivers.
Old age groups mostly stays in geographical areas distant from specialized care centers (Liu et al, 2006) multiple medical and psychiatric co morbidities (Wootton et al, 2003)
There are regions in EU—predominantly islands—that have medical logistic disadvantage, with lack of access to modern mental health care facilities (e.g. old age psychiatry consultation).

- *elderly mental health care* in rural and geographical areas distant from centers is missing.
- health problems are of chronic nature and requiring repeated monitoring.
- Travelling difficult and expensive
REVIEW

Telepsychogeriatrics: a new horizon in the care of mental health problems in the elderly

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<table>
<thead>
<tr>
<th>Study</th>
<th>N/Mean Age (Yr)</th>
<th>Sample Origin</th>
<th>Design</th>
<th>Scales Used</th>
<th>Technology</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jones et al.</td>
<td>10</td>
<td>Patients hospitalized in a</td>
<td>Video versus face to face</td>
<td>HDRS BPRS</td>
<td>Low-cost</td>
<td>Significant correlations between BPRS scores ($r = 0.82$) and HDRS scores ($r = 0.90$).</td>
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<tr>
<td>(1996)</td>
<td></td>
<td>psychogeriatric unit.</td>
<td></td>
<td></td>
<td>videoconferencing</td>
<td>High reliability demonstrated by significant $\kappa$ values for all symptoms.</td>
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<tr>
<td>Jones (1999)</td>
<td>56</td>
<td>Patients hospitalized in a</td>
<td>Video versus face to face</td>
<td>Major depression section of the SCID BDS CDR SBT</td>
<td>T1 1.544 mbps</td>
<td>Hundred percent agreement between dementia diagnosis. High correlation in scale scores.</td>
</tr>
<tr>
<td>(2000)</td>
<td>13–15 (depending on test)</td>
<td>5–6 patients from a nursing home 7–9 patients from an outpatient center</td>
<td>Video versus face to face</td>
<td>BPS GDS SPMSQ</td>
<td>ISDN 128 kbps</td>
<td>Significant correlation in scores ($r = 0.83$), but correlation for subjective items ($r = 0.95$) higher than for observational items ($r = 0.72$).</td>
</tr>
<tr>
<td>Jones et al.</td>
<td>30/66.4</td>
<td>Patients hospitalized in a</td>
<td>Video versus face to face</td>
<td>Clinical diagnosis BPRS ISDN</td>
<td>ISDN 128 kbps</td>
<td>Significant correlation in scores ($r = 0.83$), but correlation for subjective items ($r = 0.95$) higher than for observational items ($r = 0.72$).</td>
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<tr>
<td>(2001)</td>
<td></td>
<td>psychogeriatric unit.</td>
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<tr>
<td>Menon et al.</td>
<td>24/&gt;60</td>
<td>Patients hospitalized in a</td>
<td>Two groups. One examined twice face to face. Another examined once face to face and once by video.</td>
<td>HDRS GDS-15 SPMSQ</td>
<td>Ordinary telephone lines.</td>
<td>Similar variation coefficients for the two groups.</td>
</tr>
<tr>
<td>(2001)</td>
<td></td>
<td>medical unit.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Grob et al.</td>
<td>27/69</td>
<td>Veterans’ home</td>
<td>Two groups. One examined twice face to face. Another examined once face to face and once by video.</td>
<td>BPRS MMSE GDS ISDN</td>
<td>ISDN 384 kbps</td>
<td>Psychiatric assessment as reliable when carried out via videoconference as in face-to-face modality.</td>
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<td>(2001)</td>
<td></td>
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<tr>
<td>Saligari et al.</td>
<td>20/&gt;65</td>
<td>Patients admitted in general</td>
<td>Video versus face to face</td>
<td>MMSE GDS</td>
<td>ISDN 128–384 kbps</td>
<td>Significant correlation in scores. For MMSE $r = 0.90$; for GDS $r = 0.78$. Recommendation of a minimum bandwidth of 384 kbps for the assessment.</td>
</tr>
<tr>
<td>Shores et al.</td>
<td>16/78</td>
<td>Veterans’ home</td>
<td>Video versus face to face</td>
<td>Clinical interview DSM-IV criteria Clock drawing SBT</td>
<td>High-speed T1 line</td>
<td>Hundred percent agreement between diagnosis made.</td>
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<tr>
<td>(2004)</td>
<td></td>
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<td></td>
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<tr>
<td>Loh et al.</td>
<td>20/78.8</td>
<td>Community population</td>
<td>Video versus face to face</td>
<td>Clinical interview MMSE GDS Inforant Questionnaire</td>
<td>ISDN 384 kbps</td>
<td>High agreement in diagnosis of dementia ($\kappa = 0.80$).</td>
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<td>(2005)</td>
<td></td>
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<td>Martin-Khan et al. (2007)</td>
<td>42/70</td>
<td>Patients referred to a memory clinic under the suspicion of dementia.</td>
<td>Two groups: Face to face (FrF) versus FrF and FrF versus video.</td>
<td>Clinical interview DSM-IV criteria</td>
<td>IP or ISDN 384 kbps</td>
<td>No difference in inter-rater reliability for the diagnosis of dementia between the two groups.</td>
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</table>
Objectives

• What application of videoconferencing in psychogeriatric care is appropriate?
• Are there any specific needs due to geographical factors?
• Cognitive assessment made through this system is reliable?
• Have the geriatric population difficulties in accepting care through this system?
Steps

• Development of telepsychogeriatric unit (TpsyGU) in remote geographical areas

• Development of mobile telepsychogeriatric unit (MTpsyGU) for elderly population unable to visit (TpsyGU).

• TpsyGU interconnection with the Psychogeriatric Unit

• Personnel’s continuous education
Guided therapy

Home care
- Or
- Medical center

Screening

Patients and carers needs

Counselling and psycho-education
- psycho-therapy

Guided therapy

Guided advice

Remote Expert

E HEALTH M HEALTH data into a central system. administrative web interface

Patient

Informal carers

Professional (GP, Social Worker)

Supervision and advice in screening

Supervision and advice in counselling and psycho-education

Supervision and advice in treatment
Website: www.telepsychogeriatrics.gr

iPad App: telepsychogeriatrics
Telepsychogeriatrics Video Conferencing Application (PC & iPad)
iPad App:
Telepsychogeriatrics e-file, e-testing
<table>
<thead>
<tr>
<th>Connections</th>
<th>Appointments</th>
<th>Follow Up</th>
<th>Patient Admissions</th>
<th>New Cases</th>
<th>Old Cases</th>
</tr>
</thead>
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<tr>
<td>29</td>
<td>23</td>
<td>68</td>
<td>6</td>
<td>31</td>
<td>21</td>
</tr>
</tbody>
</table>

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<tr>
<th>Home Visits</th>
<th>Health Center Appointments</th>
<th>Appointments in Regional Clinics</th>
<th>Telephone Consultations</th>
<th>Telephone Consultations with Patients &amp; Family</th>
<th>Contact with Other Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>77</td>
<td>55</td>
<td>50</td>
<td>154</td>
<td>39</td>
</tr>
</tbody>
</table>
RESULTS
KERATEA CARE CENTER FOR THE ELDERLY
MARCH 2013 - NOVEMBER 2013

110 TELEPHONE CONSULTATIONS WITH PATIENTS & FAMILY
1 TELEPHONE CONSULTATIONS
18 SUPERVISION
25 CONNECTIONS
32 SESSIONS AT THE CLINIC
30 NEW CASES
4 APPOINTMENTS AT EGINITIO HOSPITAL
18 FOLLOW UP
• The Americas (75%), European (64%) and South-East Asia (62%) Regions reported high rates of adoption of mobile telemedicine initiatives (informal or in the pilot phase).

• Countries in the high-income group reported the highest percentage of mobile initiatives (64%) followed by lower-middle income countries (53%).

• Mobile telemedicine initiatives included consultations between health-care providers and transmission of a patient’s health-related data using mobile devices
Challenging the future
Integrating mental health care with medical outcomes
Conclusions

• Successful application of this new method- mHealth- in geriatric mental healthcare is greatly depending on a careful structural planning.

• adapt systems to the individual needs and resources of elderly patients within the specific frameworks of the respective national healthcare systems.
Thank you, ευχαριστώ
We performed a systematic literature review on telemedicine healthcare concepts for older patients. The largest proportion of telemedicine interventions consisted of measurements of vital signs combined with personal interaction between healthcare provider and patient. The studies show predominantly positive results with a clear trend towards better results for "behavioral" endpoints, e.g. adherence to medication or diet, and self-efficacy compared to results for medical outcomes (e.g. blood pressure, or mortality), quality of life, and economic outcomes (e.g. costs or hospitalization). However, in 26 of 68 included studies, patients with characteristic limitations for older patients (e.g. cognitive and visual impairment, communication barriers, hearing problems) were excluded. A considerable number of projects use rather sophisticated technology (e.g. videoconferencing), limiting ready translation into routine care. Future research should focus on how to adapt systems to the individual needs and resources of elderly patients within the specific frameworks of the respective national healthcare systems.