

S16: Public Lecture: A New Age in Alzheimer's Disease

Authors: Jacobo Mintzer, Edgardo Reich, Diego Aguilar

Alzheimer's disease is a neurodegenerative disorder affecting over 55 million people worldwide, with 300,000 sufferers residing in Argentina. Over the last 10 years with the emergence of monoclonal antibodies, we have witnessed a radical change in our approach to Alzheimer's disease. Today, we can see the lesion of Alzheimer's disease in the living brain up to 17 years before the onset of symptoms. Furthermore, we have developed blood tests that allow us to identify those at risk to have amyloid in the brain and, in the last two years, a new group of disease-modifying treatments has been approved for clinical use. What remains to be elucidated is how these revolutionary changes will impact patient care and perceptions of Alzheimer's disease in society. Additionally, how these new, often expensive tools to fight Alzheimer's disease will be accessible in developing countries is also unknown. These issues will be discussed during our presentation with a panel of experts in the field. Dr. Reich will present the latest advances on biomarkers and new treatments, Dr. Aguilar will discuss the implications of this new approach for the diagnosis and treatment of Alzheimer's disease around the world, and Dr. Mintzer will discuss different options that will make these treatments available in developing countries with a focus on Latin America.

S17: The translation of digital technology to promote mental health of older adults

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Digital mental health - The use of apps, the internet, mobile technologies, virtual reality, and social media for mental health and wellness - rapidly rose in popularity during COVID-19 and continues to expand in the post-COVID-19 era. There is a general recognition of the value and contribution of digital technologies in providing personalized mental health care tools, including health education, health promotion, health maintenance, diagnosis, treatment, interventions, and rehabilitation.

Globally, around 14% of adults aged 60 and over live with mental health conditions, with depression and anxiety being the most common. In Hong Kong, a recent study found that 14% of older adults said they had displayed signs of depression, and 12% had experienced anxiety. Critical risk factors for mental health conditions in older adults include social isolation, loneliness, reduced mobility, and frailty. However, many mental health problems are unrecognized and untreated. Lack of available mental health services, stigma, and cost are significant barriers to help-seeking.

The high prevalence rates of mental health problems and low levels of access to traditional mental health services, combined with the rapid development of digital and emerging technologies, led to the rapid development of digital mental health services. We would like to know whether digital mental health works for older adults and what factors contribute to the success of digital mental health interventions.

This symposium brings together a group of multidisciplinary researchers in digital mental health. We will present our work and collectively address four key areas:

1. Digital engagement, social support and mental health of older adults.
2. Associations between social networks and technology acceptance with depressive symptoms in community-dwelling older adults.
3. The effectiveness of a Digital Buddy program on mental well-being and depressive symptoms of older adults.
4. The effectiveness of a therapeutic virtual reality experience program on mental well-being in older adults living with physical disabilities in long-term care facilities.

The symposium intends to stimulate global collaboration towards strengthening principles in digital mental health while elucidating additional factors that influence this technology-enabled approach to support older adults in diverse contexts to achieve optimal mental well-being.

Abstract 1: Digital engagement, social support and mental health: Latent profile analysis on the intergenerational digital divide in Hong Kong

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Objectives: The pandemic has resulted in pervasive digital transformation in our daily lives, particularly those of older adults. In Hong Kong, smartphone ownership among older adults rose from 68.1% in 2020 to 90.7% in 2022. Accordingly, the intergenerational digital divide and its implication on older adults' well-being may have changed, and this study was conducted to address this.

Methods: A telephone survey with a random sample of 878 adults was conducted from December 2023 to January 2024 (Response rate = 42%). Based on Van Dijk (2013)'s Resources and Appropriation Theory, we operationalized the digital divide by ownership of smart devices, literacy (solving tech problems by oneself, literacy in information search, social media, handling documents, online shopping/payment, and online collaboration), and usage (daily smartphone and laptop usage, frequency of using social media, online payment, m-health, entertainment apps, and information apps). Latent profile analysis was conducted on these indicators.

Results: Three classes were revealed – Low (12.0%), Intermediate (41.8%), and High (46.2%), with significantly different distributions by age groups (<55: 3.5%, 23.2%, 73.3%; 55+: 20.1%, 59.7%, 20.1%). Low and High had the lowest and highest scores, with Intermediate in between on most indicators (e.g., Low, Intermediate, and High groups owned 1.6, 2.4 & 3.1 devices, and the mean hours of daily smartphone use were 2.8, 4.2, & 5.3, respectively), except social media and information search literacies where Intermediate and High were comparable. While high (vs low) correlated with greater 'activity and vigor' (from WHO-5 Well-Being Index) and social support across age groups, entertainment apps conveyed more mental health benefits for older adults (Aged 55+). Associations of poor literacies with mental health were also less detrimental to older adults than younger groups.

Conclusions: Against ageist assumptions, digital engagement predicted mental health and social support for all ages, yet finer indicators revealed an age-related divide in mental health. Practitioners should continue engaging with all ages to enhance digital inclusivity yet segment their efforts by capitalizing on the age-relevant positive impact of digital engagement, such as using the entertainment element of digital technologies when working with older adults.

Abstract 2: The associations of technology acceptance and social networks with depressive symptoms in community-dwelling older adults

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Objectives: The study's Objectives was to examine the associations between social networks and technology acceptance with depressive symptoms in community-dwelling older adults.

Methods: This was a cross-sectional survey conducted in community settings in Hong Kong. Eligible participants were community-dwelling old adults aged ≥ 60 years. Variables included social network, measured by the 6-item Lubben Social Network Scale; depressive symptoms, measured by the 9-item Patient Health Questionnaire; and technology acceptance, measured by the 14-item Senior Technology Acceptance Model. Hierarchy linear regression was employed to examine their associations. The independent variables were social network and technology acceptance. The dependent variable was depressive symptoms. Covariates included age and gender. Unadjusted models of the two independent variables were constructed. It was followed by three models including different independent variables, including [Model 1: social network], [Model 2: social network + technology acceptance], and [Model 3: social network + technology acceptance + covariates]. R²-changes were computed between models.

Results: This study recruited 380 eligible participants with a mean age of 66.5, and most participants were female (57.4%). In the unadjusted model, social network ($\beta = -0.081$, $p = 0.010$) and technology acceptance ($\beta = -0.041$, $p < 0.001$) were significantly associated with depressive symptoms. In Model 1, social network ($\beta = -0.081$) was significantly associated with depressive symptoms. The R² is 0.017 and the R²-change was significant ($p = 0.010$). In Model 2, social networks became insignificant ($\beta = -0.041$, $p = 0.180$) after adding technology acceptance ($\beta = -0.058$, $p < 0.001$) which was significantly associated with depressive symptoms. The R² is 0.124 and the R²-change was significant ($p < 0.001$). In Model 3, the effect of social networks remained insignificant ($\beta = 0.019$, $p < 0.903$), and the technology acceptance remained significant ($\beta = -0.051$, $p = 0.011$). The R² was 0.124 and the R²-change was insignificant ($p = 0.692$).

Conclusions: Social networks are known to be protective against depressive symptoms in the literature that was also observed in this study. However, depressive symptoms are more associated with technology acceptance than social networks and the effect is not affected by age or gender. Older adults' psychological well-being may be improved by fostering a positive attitude towards technology use and the healthcare system. Policies could offer older adults technology learning for better mental well-being and depression prevention.

Abstract 3: The effects of Digital Buddy on the mental well-being and depressive symptoms of older adults: A cluster randomized controlled trial

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Objectives: The study's Objectives was to evaluate the effectiveness of a Digital Buddy program on mental well-being and depressive symptoms of older adults.

Methods: This study employed a multi-center, cluster-randomized, two-parallel-group, non-inferiority, controlled trial design with a 1:1 group allocation ratio. Participants were recruited in elderly community centers and nursing homes and were eligible if they were aged > 60 years and mentally capacitated. Participants were clustered by centers and randomly allocated into two groups. In the intervention group, a series of face-to-face training sessions for a minimum of 23 hours of 14 sessions at a trainer-to-participant ratio of 1:10 were provided by Digital Buddies (i.e., young volunteers) to participants for six months. The training contents included face-to-face transfer of technological skills about using various useful apps on smartphones and educational videos promoting mental health care. The training contents were packaged as an app and launch-able on the website. The participants were tele-mentored using smartphones by Digital Buddies during the intervention period. In the control group, participants received the usual care. The outcomes included mental well-being measured by the World Health Organization Five Well-being Index and depressive symptoms measured by the 9-item Patient Health Questionnaire. The outcomes were measured at baseline and post-intervention. Generalized estimating equations were used to examine the within-group and interaction outcomes. effects of "groups" and "time points" on the outcomes.

Results: The study recruited 310 eligible participants from 40 centers. The mean age of participants was 74.2 years, and most of the participants were female (64%). Each group comprised equally 155 participants. The result showed that mental well-being was significantly improved after the intervention in the intervention group ($p < 0.001$) but not in the control group ($p = 0.106$). The interaction effect on mental well-being was not significant ($p = 0.132$). The depressive symptoms were significantly reduced after the intervention in the intervention group ($p = 0.047$) but not in the control group ($p = 0.398$). The interaction effect on depressive symptoms was not significant ($p = 0.601$).

Conclusions: The Digital Buddy programme promoted mental well-being and reduced depressive symptoms in older adults but its effect might not be superior to the usual care.

Abstract 4: The effect of therapeutic virtual reality experience on the mental well-being and loneliness of older adults living with physical disabilities in long-term care facilities: Preliminary findings of an ongoing randomized controlled trial

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Objectives: The Objectives of the study was to evaluate the effectiveness of a therapeutic virtual reality experience program on mental well-being in older adults living with physical disabilities in long-term care facilities.

Methods: This study employed an assessor-blinded, two-parallel-group, non-inferiority, randomized controlled trial with a 1:1 group allocation ratio. Eligible participants are aged ≥ 60 years and living with physical disabilities. Participants were recruited in long-term care facilities (LTCF). Participants were individually randomized into groups. In the intervention group, participants received a 6-week virtual reality experience (VRE) program for 12 sessions, and each session lasted for one hour with two sessions per week. In each session, the program was delivered by a trained young volunteer at a trainer-to-participant ratio of 1:3, and the participants within the same group were immersed in the same virtual environment. Each session comprises three parts: 1) briefing and setup, 2) virtual reality experience, and 3) debriefing. The 12 VRE sessions developed into three therapeutic themes: natural scenery, outdoor leisure, and reminiscence. The participants were immersed in a therapeutic virtual environment in the VRE via head-mount devices. The young volunteers facilitated participants to explore in the virtual environment. The facilitator invited participants to share their VRE in the group during the debriefing. In the control group, participants received the usual care. The outcomes were mental well-being as measured by the World Health Organization Five Well-being Index and loneliness as measured by the 6-item De Jong Gierveld Loneliness Scale and measured at baseline and post-intervention. Generalized estimating equations were used to examine the within-group and interaction effects of “groups” and “time points” on the outcomes.

Results: The trial started in February 2024, is ongoing with >30 LTCFs indicated interest to participate in the study and is expected to be completed by December 2024. It aims to recruit 216 participants. It is hypothesized that the program will promote mental well-being and reduce loneliness more than in the usual care provided by LTCFs.

Conclusions: The preliminary findings will be presented at the conference. The data of >50% of the expected participants will be reported

S18: Comprehensive Care for the Elderly: from Stigmatization to Therapeutic Intervention

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Globally, there is an observed increase in the elderly population. In Puerto Rico, 30% of the population is over 60 years old, positioning it as the sixth country worldwide with the highest aging population. This presentation discusses the demographic profile, ageism, stigma, the ethics of care, spirituality, and specialized therapeutic interventions.

Ageism is characterized by a series of stereotypes, prejudices, and discrimination, primarily rooted in social constructs. It occurs across organizations, political structures, and individual and social attitudes. This social phenomenon is a predisposing factor for social stigma, defined by sociologist Ervin Goffman (1963) as a discreditable mark borne by those who possess it.

Grandparents who raise their grandchildren face diverse psychosocial effects stemming from interactions with professionals, the State, and society in their role as caregivers, impacting their physical and mental health. Through qualitative Methods, reflections are proposed on these elderly individuals who are socially expected