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## The retention challenge in remote therapy and learning seen through the lens of the COVID-19 pandemic

What does the popularity of social media “unfriending,” “blocking” and “ghosting” communicate about the success potential for online psychological treatment and online education? This question has been brought to the fore by the COVID-19 pandemic and the resultant transition to remote delivery for much of clinical care and teaching.

Online psychotherapy and education platforms represent rapidly adaptable, convenient substitutes and are playing an important role in helping stressed communities traverse the trauma. As we increasingly rely on these remote alternatives, however, it is crucial to anticipate and mitigate against a recurrent problem suggested by pre-pandemic scholarship: very poor retention.

Although this challenge has been borne out in studies of both online therapy<sup>1</sup> and online education<sup>2</sup>, these fields have been mutually insular and have not benefited from each other’s experience in addressing this common foe. This issue has been recently highlighted in the specialized education literature<sup>3</sup>. Here, we explore it for a mental health audience, since, besides learners and educators, countless online patients and therapists also stand to gain from retention-enhancing design.

Telemental health services vary greatly, including by specific technology used, intervention type, degree of provider involvement, and target population and diagnosis. During the pandemic, video-mediated consultations have become particularly common. Up until that point, the best studied telemental health intervention had been digitally-enabled self-help, typically inspired by cognitive behavioral therapy and incorporating little or no therapist involvement. The poor retention associated with the latter has been widely documented, including in one early<sup>4</sup> and one more recent<sup>5</sup> landmark studies that showed disappointing completion rates of 0.5% and 18%, respectively.

The same limitation is borne out in studies of remote learning. When massive open online courses (MOOCs) first appeared nearly 10 years ago, they were heralded as the long awaited antidote to education disparities. Through low-cost courses delivered online by renowned educators to a worldwide audience, they promised to democratize high-quality education like never before and challenged the very premise of location-bound learn-

ing, regardless of topic or discipline. Universities would become obsolete, went the optimistic prediction<sup>6</sup>. This echoed the older promise that therapist-optional digitally-enabled self-help would dramatically increase access to care by correcting provider shortages, especially in underserved areas and communities.

The euphoria – 2012 was dubbed “the year of the MOOC”<sup>6</sup> – was short-lived, in no small measure due to a stubborn retention problem that has been revealed in several studies. Among them, a landmark analysis of 565 MOOCs delivered by the Massachusetts Institute of Technology and Harvard University to 5.63 million learners showed completion rates that ranged from 3.13% to 5.91% across academic years<sup>7</sup>. Also disappointing was the finding that MOOC completers tended to be socio-economically advantaged, not the in-need learners at the margins of global education that MOOCs hoped to reach<sup>6</sup>. Already by 2013, the world was declared “MOOC’d out”<sup>6</sup>.

Retention, of course, is not the only metric by which to measure the success of online therapy and education; even if retention is poor, a massively popular intervention or course still means that many users can benefit<sup>3</sup>. Also, today’s pandemic-dictated platforms are typically much smaller, less impersonal, more interactive and better coached than the typical self-paced online therapy or MOOC of yore, suggesting that retention may be a less relevant problem with current offerings. Still, there is reason to be concerned about user engagement on today’s platforms, due to characteristics that seem inherent to broader online psychology.

Online, regardless of the specific activity, inattention and distractibility seem like perennial obstacles and ever present personality features. Already in 2008, a British Library investigation of scholars’ online reading behavior described it as “promiscuous,” “horizontal,” “volatile” and “squirrelling”<sup>8</sup>. Given today’s obsession with such analytics as “visitor conversion,” “page views,” “bounce rate” and “scroll depth,” it would be safe to assume that this problem has worsened as Internet-related technologies have grown more sophisticated and distractions have multiplied<sup>3</sup>.

A weak attachment to content has parallels in the weak bonds that characterize many online relationships, further suggesting a

medium-wide commitment shortage present across online platforms and pursuits. In that sense, online information-seeking may not be fundamentally different from online befriending. From “blocking” to “unfollowing”, “unfriending” and “ghosting”, the abundance and popularity of online relationship-terminating functions and behaviors speak to this phenomenon.

Relatedly, attention-deficit/hyperactivity disorder is very commonly diagnosed in individuals with pathological Internet use, variably defined<sup>9</sup>. However, with the pace of online life, competition from countless sites, visual and auditory stimuli meant to drive traffic, and difficult-to-ignore “alerts” and “notifications”, one need not suffer from pathological Internet use to appreciate an Internet-inattention link that seems like an intrinsic characteristic of online psychology.

The difficulty sustaining attention online, the weakness of online bonds and the weak commitment to online content suggest an environment-wide retention challenge that would be crucial to address in two activities where focus and commitment are indispensable: psychotherapy and education. To that end, various mitigating factors that have been proposed<sup>3</sup> in the mental health and education literature to enhance retention would seem very relevant in the COVID-19 era.

These include nurturing a medium-defying bond between patient/student and therapist/teacher; participative goal-setting that views users as collaborative partners; a hybrid or blended approach that integrates some in-person contact into remote delivery; underscoring the credentials of remote therapists/teachers so they may be taken more seriously by users; inclusive design elements that reflect the diversity of platform users; and

“gamification”, which borrows from video game development to increase platform engagement.

Moving therapy and education out of their traditional, time-honored settings in response to the pandemic has allowed the continued provision of mental health care and saved the academic year. But our knowledge of Internet psychology, as well as data from studies into digital self-help platforms and MOOCs, suggest that online mental health treatment and teaching cannot yet be considered an interchangeable, quality-assured alternative to conventional practice. Well-documented challenges with retention highlight this as a real obstacle to be fully investigated and addressed before online therapy and education can be embraced as reliable long-term solutions.

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## Mental health problems among COVID-19 survivors in Wuhan, China

The COVID-19 pandemic is profoundly impacting mental health worldwide<sup>1-3</sup>. Wuhan, China has been the first city to experience the emergency of COVID-19 and its high hospitalization and casualty rates, as well as the mandatory curfews that were strictly enforced for infection control, with their significant mental health implications<sup>4</sup>. Although a large number of hospitalized COVID-19 patients recovered and met the clinical criteria for discharge, we hypothesized that mental health problems would occur as major sequelae among COVID-19 survivors.

A total of 4,328 hospitalized COVID-19 patients who met relevant clinical criteria<sup>5</sup> were discharged between January 18 and March 29, 2020 from five hospitals in Wuhan, China (Wuhan No.1 Hospital, Wuhan Wuchang Hospital, Hubei Provincial Hospital of Traditional Chinese Medicine, Hubei Provincial Hospital of Integrated Chinese and Western Medicine, and Wuhan Pulmonary Hospital).

All these COVID-19 survivors (median age: 59 years, interquartile range, IQR: 47-68 years; 54.1% female) were followed up and assessed by mental health care specialists. The evaluation period started on the date of hospital discharge and continued

through July 28, 2020. Among the survivors, 156 (3.6%) dropped out at some point of the follow-up.

The validated Chinese versions of the Patient Health Questionnaire-9 (PHQ-9)<sup>6</sup> and the Generalized Anxiety Disorder-7 (GAD-7)<sup>7</sup> were administered to evaluate post-discharge depression and anxiety.

As a reference group, 1,500 randomly selected individuals from the general population of Hubei province were assessed using the same instruments during the same time frame. Chi-square tests were used to compare the prevalence of mild-to-severe mental health problems in the two samples. Among COVID-19 survivors with depression or anxiety, logistic regression analysis was applied to test whether several variables (including age, gender, education, income level, comorbid chronic physical diseases, and retesting positive for SARS-CoV-2) influenced the severity of the mental health condition.

The study was approved by the institutional ethics board of Tongji Medical College, Huazhong University of Science and Technology. All participants provided their informed consent.

The median duration of the follow-up period was 144.0 days