**Executive Summary**

**Scientific Background**

Online health services (OHS) have emerged in response to healthcare challenges; they streamline the healthcare system, save resources and make them more available, and improve accessibility to treatment (Kamal et al., 2020). OHS have proven effective for providing secure patient-practitioner communication, and treatment outcomes are often similar and at times even better than those of in-person medicine (Shigekawa et al., 2018). However, despite their advantages, various barriers have hindered their implementation (Mann et al., 2020). Patients with chronic illnesses show significant interest in using OHS regardless of health status and age, but are not willing to have them replace in-person treatment (Reicher et al., 2021). While outcome measurements (including physical, psychological, and patient experience) make it possible to assess treatment quality, few studies have investigated their correlation with OHS.

**Objectives**

To describe OHS consumption and its characteristics: to examine knowledge, attitudes, usage barriers, and usage patterns among various groups in Israel; to investigate the relationship between OHS consumption and reported outcome measurements (perceived health status and patient experience); and to present a predictive model of OHS consumption based on research variables.

**Method**

A cross-sectional study was conducted among Jewish and Arab populations. A random sample representative of gender, ethnicity, age group, and religiosity was selected based on data from the Central Bureau of Statistics. Stratified sampling was conducted based on ethnicity and geographic regions. A five-part questionnaire (focusing on attitudes, barriers, familiarity and usage, health outcomes, and background information) was administered through iPanel’s online panel.

**Findings**

**Population characteristics:** 2001 participants (Jews and Arabs), 50% women, ages ranging from 19 to 89 (mean 47). Most were native Israelis, Jewish, married, Clalit HMO members, salaried employees, from the center of Israel, and about half had an academic education. A minority reported chronic illness and regular medication use.

**OHS** were based on low-level technology services (phone calls, emails, prescription requests) and high-level technology services (treatment via video, consultations, examinations and diagnoses). Participants were more familiar with low-level OHS, and even when they were familiar with high-level OHS, they still tended to use them less. Low-level OHS usage frequency was once every three months, while high-level OHS were used once every six months or longer.

**Technological and emotional barriers to using OHS:** Most participants (90%) reported having technological access to OHS and no perceived technological or emotional barriers; 10%-12% expressed a reluctance toward using OHS and working with practitioners they did not know.

**Attitudes towards OHS:** Three factors were examined - efficacy and safety of online treatment, online health literacy, and preference for in-person treatment. Participants perceived themselves as having relatively high online health literacy, and about half preferred in-person treatment, despite perceiving the efficacy and safety of online treatment as relatively high. Preference for in-person treatment was negatively correlated with perceived efficacy and safety of online treatment. Preference for in-person treatment was higher among Arabs, while perceived efficacy and safety of online treatment and online health literacy was higher among Jews. Findings were similar for both genders.

**Perceived physical and mental health status (PROMs) and OHS use:** While most participants’ perceived physical health status was very good or even better, about a quarter reported having physical issues that interfered with their daily activities and work or restricted their daily routines. This was similar regarding perceived mental health status. OHS usage frequency was negatively correlated with perceived health status. Among participants with chronic illnesses or those taking medication regularly, perceived physical and mental health statuses were both notably lower.

**PREMs and OHS use:** Most participants expressed satisfaction with OHS, and only a third were undecided in this regard. Satisfaction with OHS was positively and significantly correlated with perceived efficacy and safety of online treatment and online health literacy. In a multivariate regression, high patient satisfaction predicted usage frequency both low-level and high-level OHS.

**Familiarity and usage frequency predictors for high-level OHS:** A multivariate regression found the likelihood of familiarity with high-level OHS to be higher among males, Arabs, Clalit HMO members, those with higher perceived efficacy and safety of online treatment, and those familiar with low-level OHS. Conversely, likelihood decreased with age and among those with better perceived physical health, and Meuhedet and Maccabi HMO members. A similar pattern emerged in a multivariate regression for predicting high-level OHS usage frequency, except for perceived online health literacy; low perceived online health literacy reduced the likelihood of using high-level OHS. The regression models’ predictive rates were 23.1% and 26.7%, respectively.

**Conclusions**

* Online treatment and in-person treatment are complementary. Therefore, strategies should be developed to integrate the two based on treatment processes, patient conditions, and the various type of healthcare organizations.
* OHS encompass two types of services, low-level and high-level. Hence, they should not be addressed as a single category. It is important to map these types of services among various service providers.

**Policy Implications and Recommendations:**

* Given that technological infrastructures were found to be present in almost every household, leaning on the Digital Israel initiative, the Ministry of Health should leverage ICT and expand the provisions of OHS.
* Efforts to familiarize people with OHS and make them accessible should focus on improving online health literacy and familiarity with high-level OHS. Using more advanced technology can take diagnosis to a new level (using various monitoring devices with transmission capabilities) and facilitate important consultations for ongoing treatment of various diseases and medical conditions.
* OHS must be tailored to age groups. As OHS use (familiarity and frequency) decreases with age, appropriate treatment for the elderly population cannot solely rely on online treatment. Healthcare providers should map the elderly population’s specific capabilities and needs and establish personalized service frameworks.
* Perceived health status and patient experience are important factors that predict OHS use and are relatively easy to collect. In light of this, it is important to use these measurements more frequently to assess OHS use and the quality of care provided through them.

**References**

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