Progress report 2024

Department of Digital Mental Health

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■ Overview

The Department of Digital Mental Health was established in June 2022 as a social cooperation program in collaboration with the Graduate School of Medicine, The University of Tokyo and private companies/organizations. As of June 2024, 15 companies are participating. We conduct basic and applied research on digital mental health (DMH) technology and services, such as measuring mental health and developing intervention programs to maintain and promote mental health. We contribute to society by disseminating research findings for mental health and also contribute to medical education based on these findings. We mainly research how to apply digital health technology to mental health promotion in the workplace and health and productivity management systems. The Department of Digital Mental Health is the world's first department established in a university to apply DMH technology in the occupational mental health field. From our activity, the following results will be expected;

1) Innovative digital mental health solutions applying artificial intelligence (AI) and simulation models will be developed and widely disseminated to individuals, companies, and organizations to promote people's mental health.
2) Scientific evidence about the accuracy of measurement methods and effectiveness of intervention programs will be accumulated, and evidence-based services applying DMH technologies will be established.
3) Strategies for the dissemination and implementation of evidence-based DMH services will be developed, and a framework for their quality assurance will be proposed to society.

■ Research Contents

Mental health is an important issue for individuals, companies, organizations, and society. In particular, mental health became a major public health challenge during the COVID-19 pandemic. In the post-pandemic society, it will be important to develop DMH technology to support mental health in the workplace and community using digital tools. The main research topics are as follows:

1) Applying digital technologies such as AI and simulation models to promote DMH, and developing a fully automated and tailored stress management program guided by AI.
2) Evaluating the effectiveness of evidence-based DMH measurement and intervention programs using gold-standard methodology such as randomized controlled trials.
3) Developing effective strategies for the dissemination and implementation of evidence-based DMH measurement and intervention programs to individuals, companies/organizations, and municipalities. We also research quality assurance frameworks for DMH services.

In addition to this, we will conduct extensive research on mental health in the digital society and "Society 5.0."

Future perspectives

In addition to conducting collaborative research with companies, we plan to engage in a variety of research projects on DMH that will contribute to people's mental health, such as research about social inclusion for preventing isolation and loneliness, the impact of working in a metaverse office on workers' mental health, and development of standard pulse survey methods to capture workers' mental health, among others.

Recent Publications

1. Stein DJ, Vigo DV, Harris MG, Kazdin AE, Viana MC, Hwang I, Kessler TL, Manoukian SM, Sampson NA, Alonso J, Andrade LH, Benjet C, Bruffaerts R, Bunting B, Cardoso G, Chardoul S, de Girolamo G, de Jonge P, Gureje O, Haro JM, Karam EG, Kovess-Masfety V, Moskalewicz J, Navarro-Mateu F, Nishi D, Posada-Villa J, Scott K, Stagnaro JC, Vladescu C, Wciórka J, Zarkov Z, Kessler RC; WHO World Mental Health Survey collaborators. Patterns and predictors of 12-month treatment of common anxiety, mood, and substance use disorders in the World Mental Health (WMH) surveys: treatment in the context of perceived need. Int J Ment Health Syst. 2025 Mar 14;19(1):10. doi: 10.1186/s13033-025-00661-1. PMID: 40082956; PMCID: PMC11907907.

2. Kawakami N, Shimazu A, Eguchi H, Watanabe K, Matsuzaki K, Inoue R, Kikuchi N, Sekine Y, Tsutsumi A. Demographic and work-related correlates of general and workplace loneliness among employees in Japan: a large-scale descriptive cross-sectional study. J Occup Health. 2025 Jan 7;67(1):uiaf015. doi: 10.1093/joccuh/uiaf015. PMID: 40037612; PMCID: PMC11931285.

3. Viana MC, Kazdin AE, Harris MG, Stein DJ, Vigo DV, Hwang I, Manoukian SM, Sampson NA, Alonso J, Andrade LH, Borges G, Bunting B, Caldas-de-Almeida JM, de Girolamo G, de Jonge P, Gureje O, Haro JM, Karam EG, Kovess-Masfety V, Moskalewicz J, Navarro-Mateu F, Nishi D, Piazza M, Posada-Villa J, Scott KM, Vladescu C, Wojtyniak B, Zarkov Z, Kessler RC, Kessler T; World Mental Health Survey collaborators. Barriers to 12-month treatment of common anxiety, mood, and substance use disorders in the World Mental Health (WMH) surveys. Int J Ment Health Syst. 2025 Feb 9;19(1):6. doi: 10.1186/s13033-024-00658-2. PMID: 39924481; PMCID: PMC11807321.

4. Vigo DV, Stein DJ, Harris MG, Kazdin AE, Viana MC, Munthali R, Munro L, Hwang I, Kessler TL, Manoukian SM, Sampson NA, Kessler RC; World Mental Health Survey Collaborators. Effective Treatment for Mental and Substance Use Disorders in 21 Countries. JAMA Psychiatry. 2025 Apr 1;82(4):347-357. doi: 10.1001/jamapsychiatry.2024.4378. PMID: 39908011; PMCID: PMC11800122.

5. Sasaki N, Tsuno K, Kuroda R, Imamura K, Eguchi H, Shimazu A, Kawakami N. Workplace loneliness and job turnover: a 6-month prospective study. J Occup Health. 2025 Jan 7;67(1):uiaf009. doi: 10.1093/joccuh/uiaf009. PMID: 39898978; PMCID: PMC11879050.

6. Wu TW, Chuang HY, Lin CP, Lin FC, Yang CC, Kazuhiro W, Kawakami N. Is Well-being Associated With Burnout? From a Multicenter Cross-sectional Study in Taiwan. J Occup Environ Med. 2025 Apr 1;67(4):293-298. doi: 10.1097/JOM.0000000000003318. Epub 2025 Jan 29. PMID: 39876626.

7. Kuribayashi K, Inagaki A, Imamura K, Kawakami N. Effects of interventions aimed at improving nurses' work engagement in the workplace: a systematic review and meta-analysis protocol. BMJ Open. 2025 Jan 9;15(1):e085934. doi: 10.1136/bmjopen-2024-085934. PMID: 39788773; PMCID: PMC11751824.

8. Berkowitz-Fiebich L, Flaherty SM, Kitayama S, Karasawa M, Kawakami N, Rigotti A, Coe CL. Healthier Lipid Profiles of Japanese Adults, Especially in Women with Elevated High-Density Lipoprotein Cholesterol (HDL-C), Are Associated with Low HDL-C Peroxide Content. Antioxidants (Basel). 2024 Nov 22;13(12):1434. doi: 10.3390/antiox13121434. PMID: 39765763; PMCID: PMC11870043.

9. Buntrock C, Harrer M, Sprenger AA, Illing S, Sakata M, Furukawa TA, Ebert DD, Cuijpers P; IPD-PrevDep Consortium. Psychological interventions to prevent the onset of major

depression in adults: a systematic review and individual participant data meta-analysis. Lancet Psychiatry. 2024 Dec;11(12):990-1001. doi: 10.1016/S2215-0366(24)00316-X. PMID: 39572120.

10. Iwanaga M, Kawakami N. Long-term impact of being bullied at school on job satisfaction among middle-aged workers: findings from a 50-year prospective study of the 1958 British Birth Cohort. Ind Health. 2024 Nov 15. doi: 10.2486/indhealth.2024-0141. Epub ahead of print. PMID: 39551524.

11. Sasaki N, Imamura K, Watanabe K, Hidaka Y, Sakuraya A, Ando E, Eguchi H, Inoue A, Tsuno K, Komase Y, Iida M, Otsuka Y, Iwanaga M, Kobayashi Y, Inoue R, Shimazu A, Tsutsumi A, Kawakami N. Association of psychosocial factors at work with fertility and menstrual disorders: A systematic review. Jpn J Nurs Sci. 2025 Jan;22(1):e12624. doi: 10.1111/jjns.12624. PMID: 39419587; PMCID: PMC11683317.

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