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When Health Becomes Work: Ethical, Legal, and Social Issues of AI-Powered Digital Health Services for Employees

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Abstract

This concept paper introduces, for an international readership, an exploratory identification of the ethical, legal, and social issues (ELSI) associated with the implementation of artificial intelligence (AI)-powered digital health services for employees, first reported in Japanese, and extends it by situating the issues in international regulatory and scholarly contexts and by deriving research questions. Digital health services are proliferating, and AI is increasingly embedded in their data acquisition, analysis, and interactive feedback. Employers are now beginning to provide such services to their employees; because employment relationships involve power asymmetries, workplace implementation raises ELSI distinct from those of privately chosen use. Drawing on three service types piloted in Japan (prediction of future health status based on health checkup results, health support using 3D body avatars, and AI posture assessment with scoring and ranking), a hypothetical workplace scenario was constructed, and issues were extracted through a four-step process: review of published AI-safety evaluation guides, generative-AI-assisted exploration, structured discussion at an ELSI research center, and cross-checking against the Assessment List for Trustworthy Artificial Intelligence (ALTAI). Thirty-one issues were identified and organized into seven categories. Three cross-cutting themes are discussed: extension of the 'right to disconnect,' uniform demands for 'health' under power asymmetry, and employment-status disparities. The resulting list offers a shared starting point for employers, employees, and service providers.

Keywords: artificial intelligence; digital health; workplace; occupational health; ELSI; right to disconnect; worker surveillance; trustworthy AI

1. Introduction

As the technical and financial barriers to data acquisition, analysis, and interactive feedback continue to fall, digital health services have proliferated; mobile applications alone numbered approximately 337,000 as of December 2024 [1]. The U.S. Food and Drug Administration defines digital health technologies broadly as systems that use computing platforms, connectivity, software, and/or sensors for health care and related uses [2]. Most consumer products in this space, however, are not medical devices, and the certainty of the health claims they convey warrants caution; the need to avoid a regulatory gray zone in “digital wellness” has been pointed out internationally [3]. The demand side is nonetheless growing: consumer interest in obtaining and receiving feedback on health information framed as evidence-based [4] continues to rise.

The use of AI is expanding in parallel. In a Japanese government survey conducted in January 2025, 26.7% of respondents (n = 1030) reported experience using generative AI services, up from 9.1% the previous year; in the survey conducted the following year, this figure reached 58.8% [5,6]. Regarding health-related use, 2.7% reported already using AI to receive advice about illness or health and 20.2% expressed strong interest in doing so; in the subsequent survey, with expanded response options covering consultation on mind, body, life, and future concerns, 12.3% reported regular use [5,6]. Although the changed options preclude direct comparison, these results suggest steady penetration of AI-mediated services into everyday health practices.

AI-powered digital health services are now moving beyond individual consumers into workplaces, targeting employees [7]. This shift is not a mere change of sales channel. Employment relationships—understood here broadly, including contract arrangements that differ from formal employment—involve power asymmetries, and the introduction of such services by employers differs fundamentally from privately chosen use. Concerns include demands for “health” that exceed the employer’s duty of care, the use of health-related parameters in personnel decisions, and continuous measurement that blurs the boundary between work and private life. In Japan, statutory periodic health examinations under the Industrial Safety and Health Act define a legal baseline for employer-collected health information [8,9]; services that collect data beyond this baseline raise questions that the existing framework does not directly answer. Internationally, scholarship on limitless worker surveillance and on the ethics of corporate wellness programs has articulated closely related concerns [10,11], and the EU Artificial Intelligence Act prohibits AI-based emotion inference in the workplace (Article 5) and imposes transparency obligations for certain AI systems (Article 50, applicable from 2 August 2026) [12].

This concept paper introduces, for an international readership, an exploratory identification of ELSI associated with the implementation of AI-powered digital health services for employees, originally reported in Japanese as a non-peer-reviewed manuscript in an institutional bulletin [13]. Beyond introducing that work, the article situates the identified issues within international regulatory and scholarly contexts and derives research questions from them. It presents no new empirical data; rather, it organizes existing concepts, guidelines, and expert discussion into a structured list of issues. The aim is to provide a shared starting point for employers, employees, service providers, and researchers before—rather than after—such services become widespread.

2. Approach

2.1. Hypothetical Scenario

A hypothetical scenario was constructed in which a composite of three service types—each currently piloted or implemented in Japan, and each incorporating AI at some stage of the service process—is introduced in a workplace: (A) prediction of future health status and advice based on health checkup results [14]; (B) health support using 3D body avatars that objectify current and idealized body shapes [15]; and (C) AI posture assessment with scoring, ranking, and advice [16]. Because the aim was to extract issues broadly, no detailed requirement definition was imposed. The implementations were consulted solely for issue extraction; referring to them implies no negative judgment of any individual initiative.

2.2. Issue-Extraction Process

Issues were extracted in four steps. First, the author explored ELSI in the hypothetical scenario with reference to the Guide to Evaluation Perspectives on AI Safety in the Healthcare Domain published by the Japan AI Safety Institute [17] and AIOLIA Deliverable D3.2, whose use case 7 addresses behavioral and emotion analysis in Japanese workplaces [18]; this step combined direct review of the documents with generative-AI-assisted exploration (ChatGPT, mainly GPT-5.5). Second, a structured discussion (approximately 90 min, 27 April 2026) was held with members of the Research Center on Ethical, Legal and Social Issues (ELSI Center), The University of Osaka, using the scenario and the provisional issue list as a starting point; the discussion was recorded, transcribed, and summarized. Third, the integrated list was cross-checked against the Assessment List for Trustworthy Artificial Intelligence (ALTAI) [19] to identify remaining gaps. Fourth, the resulting issues were consolidated and classified into categories.

In preparing both the original Japanese manuscript and the present article, generative AI systems (ChatGPT, mainly GPT-5.5/5.4, OpenAI; Claude, mainly Fable 5 and Opus 4.8, Anthropic) were used, and the author verified the plausibility and consistency of all outputs. This disclosure is itself intended as a practice consistent with emerging transparency expectations for AI use in scholarly publishing (see also issue No. 28 in Table 1).

3. Identified ELSI: 31 Issues in Seven Categories

The process yielded 31 issues, organized into seven categories (Table 1). Nine issues were identified in the first review; among them, the extension of the “right to disconnect” was added by the author’s judgment, as none of the consulted documents addressed it directly. Generative-AI-assisted exploration expanded the list to 19 issues. The expert discussion added four issues: conflicts among sources of health-related advice, the boundary between statutory health examinations and other information, the time horizon of health-status prediction, and impacts on family and partners. The ALTAI cross-check added a further eight: disclosure of AI use; overdependence, overtrust, and behavioral manipulation; levels of certainty and responses to malfunction or service suspension; accessibility and universal design; stakeholder participation; impacts on the work and skills of occupational health staff; remedy and redress mechanisms; and environmental burden. Issues added after the initial 19 are marked with asterisks in Table 1. A lightly edited record of the expert discussion is included in the prior Japanese manuscript [13].

Table 1. The 31 ELSI identified, consolidated and classified into seven categories.

No.	Category	Issue
1	Data and Security	Whether the information collected is limited to the necessary minimum (data minimization)
2	Data and Security	Security assurance and resilience against cyberattacks
3	Data and Security	Data quality and bias management
4	Fairness and Diversity	Appropriateness of demanding uniform “health” of employees
5	Fairness and Diversity	Consideration of diverse backgrounds and views of health
6	Fairness and Diversity	Differences in treatment according to employment status
7 *	Fairness and Diversity	Accessibility and universal design
8	Privacy and Regulation	Scope of access to information and its use in human-resources decisions
9	Privacy and Regulation	Public–private boundaries and the “right to disconnect”

10	Privacy and Regulation	Legal and social acceptance and regulation
11	Privacy and Regulation	Prohibition of high-risk uses and secondary use beyond the stated purpose
12 *	Privacy and Regulation	Statutory health examinations versus information beyond their scope
13	Governance and Organization	Third-party consultation services and governance
14	Governance and Organization	Verifiability and auditability
15	Governance and Organization	Implementation environment and technical/organizational measures
16 *	Governance and Organization	Stakeholder participation
17 *	Governance and Organization	Remedy and redress mechanisms
18	Proportionality, Autonomy, and Mental Well-being	Responses to strategic behavior
19	Proportionality, Autonomy, and Mental Well-being	Balance between benefits and disadvantages (proportionality)
20	Proportionality, Autonomy, and Mental Well-being	Mental and social impacts
21	Proportionality, Autonomy, and Mental Well-being	Respect for human discretion and autonomy
22 *	Proportionality, Autonomy, and Mental Well-being	Time horizon of health-status prediction
23 *	Proportionality, Autonomy, and Mental Well-being	Impacts on family and partners
24 *	Proportionality, Autonomy, and Mental Well-being	Overdependence, overtrust, and behavioral manipulation
25	Explainability and Robustness	Ensuring explainability and transparency
26	Explainability and Robustness	Robustness
27 *	Explainability and Robustness	Conflicts among sources of health-related advice
28 *	Explainability and Robustness	Disclosure of AI use

29 *	Explainability and Robustness	Levels of certainty and responses to malfunction or service suspension
30 *	Society and Environment	Degree of environmental burden
31 *	Society and Environment	Impacts on the work and skills of occupational health staff

* Issues added through the expert discussion or the ALTAI cross-check (i.e., beyond the 19 issues of the earlier extraction stages).

4. Discussion

Rather than reviewing all 31 issues, this section develops three cross-cutting themes that the exploratory process suggests are distinctive of the workplace context, and connects each to a research question (RQ).

4.1. Extending the “Right to Disconnect”

The right to disconnect generally refers to the right to refuse work-related communications, such as e-mail, outside working hours [20]. The introduction of employer-provided digital health services may position being healthy itself as a quasi-occupational matter. When health data are captured continuously, the boundary between public and private blurs—an erosion of work–life boundaries long observed in workplace studies [21]—and employees may feel expected to attend to their health as part of work even outside working hours. The expert discussion also noted that not being continuously measured can itself be of value to employees. This concern does not call into question statutory health examinations, which remain legal obligations and will continue as before; it applies to continuous measurement beyond that legal baseline. As of mid-2026, Japan has not codified the right to disconnect in law, which makes conceptual clarification all the more consequential. RQ1: How should the right to disconnect be understood when employer-provided health services position being healthy as quasi-occupational conduct, and through what mechanisms—opt-out design, display/non-display modes, measurement-free periods—can freedom from continuous measurement beyond statutory requirements be maintained?

4.2. Uniform Demands for “Health” under Power Asymmetry

Employers have legitimate duties of care, and in Japan the statutory examination framework obliges them to hold certain health information [8,9]. Yet “actively grasping and protecting” employee health beyond that baseline is a delicate line, adjacent to worker surveillance [10,11]; critical scholarship has likewise described how wellness itself can turn into a moral imperative [22]. Within power asymmetries, nominally voluntary participation may be accompanied by implicit organizational pressure, and the quality of consent differs from that obtained in clinical

settings; the discussion contrasted recommended consent with sincere consent. Services that score posture or visualize idealized body shapes can be designed as improvement-oriented support, yet they also stand in tension with appearance-based norms, and the boundary between encouragement and normative pressure deserves attention. Interventions under corporate health-management strategies can likewise reach considerable depth, as illustrated by a publicly reported meal-replacement program for employees with elevated triglycerides [23]; this example is cited to indicate the potential depth of intervention, not as an evaluation of the individual program. A related complication is strategic behavior: once employees recognize how measurements are used, they may act deliberately to appear favorable—distinct from the intended notion of behavior change and corrosive of the service’s stated purpose. RQ2: What criteria—proportionality assessment, data minimization, purpose limitation—can distinguish legitimate employer health support from excessive demands for uniform health, and how should the quality of consent be evaluated under power asymmetry?

4.3. Employment-Status Disparities and Data Accumulation

Digital health services in workplaces typically accumulate data for regular employees, while non-regular employees—or workers at small enterprises unable to procure such services—may be left out. Health disparities may thus be layered onto existing socioeconomic disparities, and the benefits of accumulated personal data may become a new axis of inequality; the discussion described this as the risk of a digitally excluded underclass. As labor mobility increases, data portability across employers and interoperability among services become essential, requiring providers to move beyond lock-in differentiation. Accessibility and universal design (No. 7) belong to the same cluster: whether every employee can in fact use the service conditions who benefits. RQ3: How can service design and policy—portability requirements, interoperability standards, coverage across employment statuses—prevent employer-provided digital health from amplifying existing disparities?

These themes sit within a rapidly moving regulatory landscape. Beyond the EU AI Act provisions noted above [12], China’s interim measures for anthropomorphic AI interactive services (effective July 2026) address emotional dependence induced by interactive AI [24]—relevant as workplace health services acquire conversational interfaces. The environmental and labor costs of AI systems themselves [25] complete the picture: implementation choices in workplaces are also choices about supply chains and infrastructure.

5. Limitations and Conclusions

This study is exploratory, and its limitations follow from that character. The extraction relied on a single hypothetical scenario constructed from three Japanese implementations, and on discussion within one research center; other scenarios, sectors, and cultural contexts would likely surface additional issues. Several major frameworks were not directly applied in the extraction process, including the OECD AI Principles [26], the EU AI Act in detail [12], the WHO guidance on AI for health and on large multi-modal models [27,28], the Hiroshima AI Process [29], Japan's AI Promotion Act (Act No. 53 of 2025) [30], and the AI Guidelines for Business [31]; incorporating them explicitly would refine both the extraction and the classification. The use of generative AI in exploration and drafting, although verified by the author and disclosed above, may also have shaped the issue space in ways that are difficult to audit.

With these limitations acknowledged, the 31 issues in seven categories offer a starting checklist for employers, employees, service providers, and occupational health professionals considering AI-powered digital health services, and the three research questions indicate where conceptual and empirical work is most needed. Future work includes refining the list against the frameworks above, validating it through stakeholder-participatory processes that include employees and their families, and developing it into operational assessment tools for implementation decisions.

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Prior Publication: Part of this article previously appeared in Japanese as a non-peer-reviewed manuscript in an institutional bulletin (ELSI NOTE No.75, Research Center on Ethical, Legal and Social Issues, The University of Osaka) [13]. As stated in the Introduction, the present article is intended to

introduce that exploratory work to an international readership and to extend it; it has been substantially revised and rewritten in English for that purpose.

Use of Artificial Intelligence: Generative AI systems (ChatGPT, mainly GPT-5.5/5.4, OpenAI; Claude, mainly Fable 5 and Opus 4.8, Anthropic) were used in issue exploration and manuscript drafting. Prior to submission, the manuscript was also screened for text similarity and AI-generated text using iThenticate (Turnitin), and the author reviewed the resulting reports. The author reviewed and verified all outputs and takes full responsibility for the content of this article.

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