



Research article

Presenteeism among healthcare professionals in Mongolia: A mixed-method multicenter study

Oyundari Batsaikhan¹, Odgerel Chimed-Ochir^{1,*}, Delgerjargal Dorjbal², Erdmaa Tserendondov³, Otgontogoo Oidovsuren³, Yumiya Yui¹, Ami Fukunaga¹, Yoshihisa Fujino⁴, Bayasgalanmunkh Baatar³ and Tatsuhiko Kubo¹

¹ Department of Public Health and Health Policy, Hiroshima University, Hiroshima, Japan

² Department of Rehabilitation Medicine, Fujita Health University, Toyoake, Aichi, Japan

³ Darkhan-Uul Medical School, Mongolian National University of Medical Sciences, Darkhan-Uul province, Mongolia

⁴ Department of Environmental Epidemiology, University of Occupational and Environmental Health, Kitakyushu, Japan

* **Correspondence:** Email: odgerel@hiroshima-u.ac.jp; Tel: +81822575169.

Supplementary

Supplementary Table S1. Explanatory sequential mixed-methods approach of this study, starting with the quantitative phase, followed by the qualitative phase, and findings integration.

	Quantitative analysis	Qualitative analysis
Participants	• Physicians and nurses	• Clinician managers
Sampling	• Nonprobability sampling (N = 465 physicians and nurses)	• Purposeful sampling (N = 14 clinician managers)
Data collection instruments	Data collection tool • Cross-sectional, web-based questionnaire consisting of questions on: - Demographics–11, - Work functionality impairment tool (WFun)–7 - Health-related quality of life (HRQOL)–6 - Simplified brief job stress questionnaire (BJSQ)–23 • Informed consent	• Semi-structured interviews addressing: - Perception and experience of presenteeism - Currently implemented measures - Further needs • Informed consent • Audio recording • Transcription • Translation
Data analysis	• Descriptive analysis • Univariate and multivariate regression analysis	• Thematic analysis - Familiarization with data - Generating initial codes - Searching for themes - Reviewing themes • Defining and naming themes Lincoln and Cuba's trustworthiness criteria
Findings integration	• Integration of the quantitative and qualitative results • Methodologic and investigators triangulation	

Supplementary Table S2. A semi-structured interview guide.

Domain	Main questions	Probing questions
1. Work context	Can you briefly describe a typical day in your role as a clinician manager?	What is your role, and approximately how many personnel are you responsible for?
2. Presenteeism experiences	How common is presenteeism at your workplace?	Can you describe situations when staff continue to work despite illness?
3. Job demands	What are the main challenges at work that affect presenteeism?	- Which aspects of your work feel most demanding (e.g., workload, emotional demands, role conflict, time pressure)? - Are there any unspoken expectations or informal norms that influence whether staff work while ill?
4. Job resources	What supports are available at your workplace to manage demands and reduce presenteeism?	- What supports are lacking or insufficient? - How do relationships with colleagues, supervisors, or the organization influence your ability to cope with work demands?
5. Personal resources	What personal strengths or strategies help you manage work while experiencing illness?	What personal resources help mitigate individual risk factors for presenteeism?
6. Outcomes	How do the mentioned demands and resources affect presenteeism?	- In your opinion, what are the main causes of presenteeism (e.g., physical and mental health, work-related factors)? - How do these factors affect your well-being, work performance, and patient care?
7. Improvements and future directions	How could current measures to prevent or reduce presenteeism be strengthened in Mongolia?	- In your opinion, what should be the priority of interventions at your organization and at the health system level? - How do you think measures to reduce or prevent presenteeism will evolve in the future?
8. Closing question	Is there anything else you would like to add regarding presenteeism or related workplace challenges?	



AIMS Press

© 2026 the Author(s), licensee AIMS Press. This is an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>)