

Commentary

Global Neglect of Dental Coverage in Universal Health Coverage Systems and Japan's Broad Coverage

Oral diseases, including dental caries, periodontal disease, and tooth loss, are among the most common diseases in the world,¹ representing a significant burden on global health, social activities, and the economy.² The disability-adjusted life year (DALY) due to oral diseases is substantial.³ Because of their high prevalence and progressive nature, direct and indirect global costs of oral diseases reached \$356.80 billion and \$187.61 billion, respectively, in 2015.⁴ However, oral health care is often separated from primary care services and neglected in universal health coverage systems.²

Integrating dental care into universal health coverage systems is required to improve access to dental care and dental health. Advanced technologies and specialist-based dental interventions impose high dental care costs on patients. These high costs contribute to social inequalities in dental care use. In [Figure 1](#), to briefly overview the Japan's situation in the world, we show the univariate association between out-of-pocket dental expenditures and the average dental visit frequency per person in 2011, or the nearest year for which data were available, in country-members of the Organisation for Economic Co-operation and Development (OECD).^{5,6} These out-of-pocket dental expenditures are likely to vary between countries because of differences in coverage schemes. Dental visit frequencies were higher in countries with lower dental expenditures. Although the figure shows a univariate association that does not consider other factors, the degree of insurance coverage is reported to affect dental visits.⁷ Therefore, improving coverage and, thus, lower out-of-pocket dental expenditures are required to increase dental care use.

Japan's effective universal health care insurance and dental care coverage

Recently, Japan's public universal care insurance has been reported to achieve the most effective coverage globally, although the study did not consider dental health care.⁸ Dental care coverage in Japan has not been well-reported. As shown in [Figure 1](#), Japan had the highest dental care utilisation with relatively low out-of-pocket dental expenditures. Here, we describe the current Japanese dental health care system and related factors.

Japan's public universal health care insurance has covered almost the entire population since 1961.⁹ The insurance law initially regulated employer-employee arrangements, but the insurance schemes were then developed and expanded to cover nonemployees as well. Except for children, older adults, and people with lower incomes, individuals pay 30% of their total dental treatment costs in Japan.¹⁰

The insurance system covers not only medical treatments but also a wide range of dental treatments, with the exception of dental implants, orthodontic treatments, and treatments using newer materials that could be substituted by more conventional materials. Out of all dental treatment costs in Japan's dental clinics in 2017, only 10.8% were for uninsured treatments.¹¹ As a result, Japan achieved one of the lowest out-of-pocket dental expenditure rates and the highest dental care use rates globally as shown in [Figure 1](#).⁵ Besides the rate of out-of-pocket dental expenditures, per capita dental expenditure in Japan, estimated to be \$192 in 2015, was relatively lower than in other high-income countries.⁴ The parallel values were \$239 in Western European countries and \$367 in the high-income North American countries, including the United States (\$370). Japan's lower dental expenditure is consistent with the health expenditure in the country, which is relatively low, considering the long life expectancy of its population. The health per capita expenditure in Japan was less than half that in the United States.¹²

The broader dental care coverage suggested by the lower out-of-pocket dental expenditure and adequate dental care use in Japan might be behind the good oral health of the Japanese population. Tooth loss can be considered a comprehensive oral health indicator because it is the final manifestation of an individual's lifelong experience with oral diseases, dental care, and oral health behaviours. The percentage of older adults aged 65 to 74 years without any natural teeth (edentate) in Japan in 2011 was relatively low at 6.9%.¹³ This value is almost half the average reported in 2013 for 15 European countries (13.3%).¹⁴ Moreover, social inequalities in edentulism were lower among older individuals in Japan than in England.¹⁵

Japan's integration of dental care into the medical and long-term health care systems

Recent studies have revealed the important contribution of oral health to general overall health. These findings led to new approaches for improving general health through dental care. To this end, increasing dental care integration into the general medical care system has been taking place in Japan.¹⁰ The contribution of oral disease prevention to general health and quality of life was described in the Law Governing Dental Oral Health, introduced in 2011.¹⁰ Since 2012, the Japanese universal health care insurance covered a cooperative strategy for hospitalized patients, in which dentists and other health care professionals work together to improve oral care and treatment for patients with severe conditions. Oral care for patients with cancer was included in the basic plan of the national cancer control promotion of 2012.¹⁶ In the 2015 "New Orange

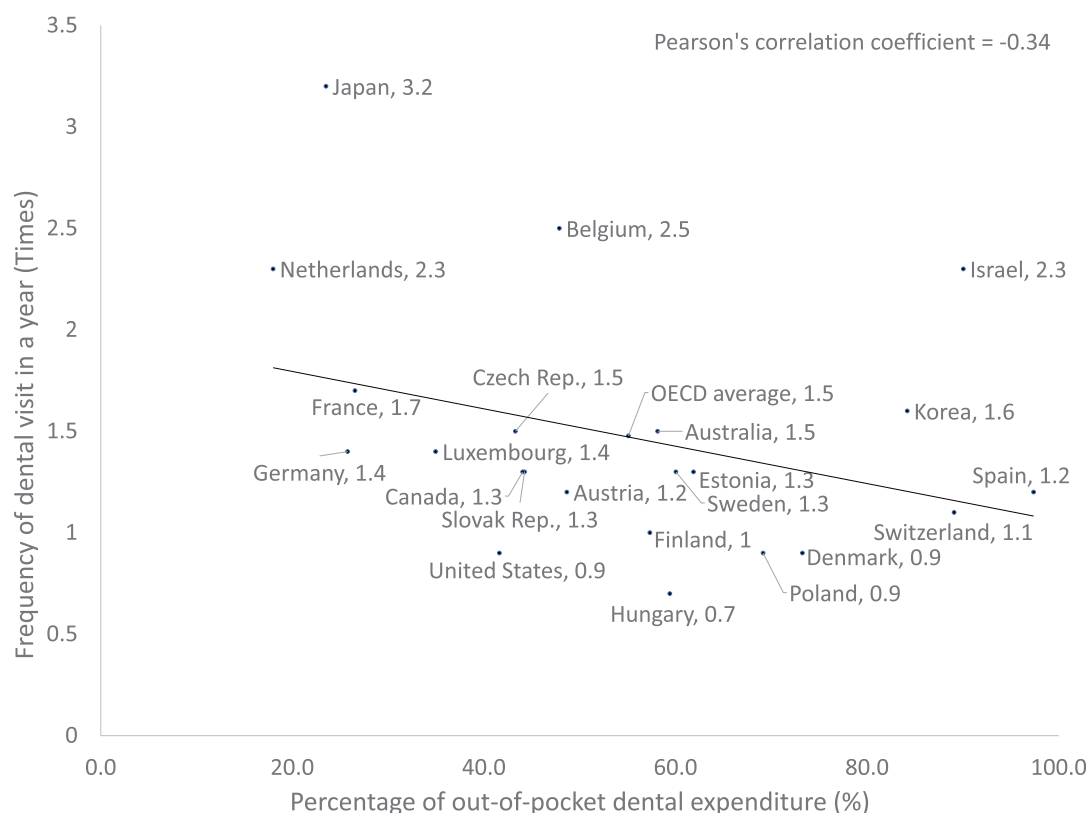


Fig. 1 – The association between the percentage of out-of-pocket dental expenditures and the average annual number of dental visits per patient in the OECD countries in 2011, or the nearest year for which data were available. OECD = Organisation for Economic Co-operation and Development.

Plan,” a comprehensive strategy for dementia management, the Japanese government noted the role of dental clinics in identifying patients with dementia, thus helping prevent their disease progression.¹⁷ Periodontal treatment guidelines for the population with diabetes were published by the Japanese Society for Periodontology in 2009 and revised in 2014, aiming to improve the health of these patients.¹⁸ Moreover, the association between oral health and food intake was considered in a national program to reduce metabolic syndrome.¹⁹ Following these concepts, oral care was also advocated for patients with diabetic nephropathy in a manual published by the Ministry of Health, Labour, and Welfare in 2019.²⁰

The Japanese population is aging more than any other country in the world;²¹ therefore, providing health care for an older population is an emerging challenge. Several dental treatment strategies have been integrated into long-term care systems to meet this need. Mobile dental services have been covered by the universal health insurance system since 1988 to encourage dental treatment to people with disabilities who cannot visit dental clinics, and the reimbursement to dentists for these services has increased.²² In addition to its general universal health care insurance system, Japan has another public health insurance system that covers the care of and disability prevention in the population with disabilities.²³ In this public long-term care insurance system, oral care for older people with disabilities, designed to improve oral hygiene and oral function, has been covered. Since the 2006 reform, preventive services including oral care for those without severe disabilities have also been implemented.

Putting these systems in place encourages cooperation between dental and other health care professionals in hospitals and long-term care facilities. Japan has advanced the integration of dental care into general medical care, a strategy that is likely to continue in the future.

Challenges related to dental coverage in Japan

Although Japanese health care policies promote good dental care use and oral health, several limitations in the system need to be improved. First, primary prevention is generally not covered by the universal health care insurance system because it was designed to ensure against sickness; it covers care costs rather than preventive costs. This historical context has slowed the diffusion of preventive care services in Japan, including vaccination in the medical field and fluoride applications in the dental field.

One remarkable example of the result of this insufficient preventive care coverage can be called the “sugar-carries paradox.” Sugar consumption in Japan has been decreasing since the 1970s. Annual sugar consumption was 27.8 kg/person in 1972. It had decreased to 15.0 kg/person in 2013, a value that was lower than in other high-income countries, including Denmark (38.1 kg/person), Switzerland (49.6 kg/person), the United Kingdom (34.1 kg/person), and the United States (27.4 kg/person).²⁴ Despite this lower sugar consumption level, caries are still relatively prevalent in Japan.²⁵ A 12-year-old child’s caries experience, as measured by the decayed,

missing, and filled teeth (DMFT) index, was 1.4 in Japan in 2011.²⁶ This value is higher than that of Denmark (0.4 in 2014), Switzerland (0.9 in 2011), the United Kingdom (0.8 in 2013), and the United States (1.19 for 1999-2004).²⁶ A working group of the World Health Organization (WHO) and the FDI World Dental Federation proposed an explanation for the discrepancy between Japan's lower sugar consumption and higher caries experience, stating that "It would appear that the most important missing factor in the Japanese situation, as compared with other industrialized countries, is the availability of fluoride."²⁵

Fluoride is an effective preventative measure for caries; however, fluoride application in Japan is mainly driven by private companies through the sale of fluoride toothpaste. Water fluoridation is not established as a public health intervention. Although guidelines for a school-based fluoride mouth-rinse program were published by the Ministry of Health, Labour, and Welfare, only 6% of children are covered by this program.²⁷ The public sectors have, however, tried to amend this situation. The number of local governments that have established policies to improve fluoride application is increasing. Although still limited, the universal health insurance system covers topical fluoride applications for high-risk individuals. Further expansion of insurance coverage for preventive dental care services is required.

Second, there are still social inequalities in access to dental care and oral health, even though out-of-pocket and per capita dental expenditures are relatively low in Japan, as mentioned previously. The 30% of treatment costs individuals must pay seems to still be a barrier to dental care use and causes inequalities. Studies had shown that when this 30% payment was decreased to 20%⁷ or 0%,²⁸ dental care utilisation increased. Approaches to reduce oral health inequalities are needed even if the inequalities in Japan seem to be smaller.¹⁵

Finally, it is possible that Japan's frequent dental care use results from overtreatment. A fee-for-service payment system was reported to increase the incentive for dentists to provide multiple and potentially excessive treatments.²⁹ Therefore, there is a possibility that Japan's fee-for-service payment system promotes overtreatment, which might be a contributing factor to its high number of annual dental visits. Insurance schemes that encourage prevention rather than treatment could be more cost-effective in the Japanese dental care system.

Acknowledgements

We appreciate Dr Shihoko Koyama, Dr Anja Heilmann, and Dr Noriko Cable for their helpful advice, and Ms. Mari Nakagawa for her help in generating the graph.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interest

None disclosed.

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