

Review

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Interdependent culture and older adults' well-being: Health and psychological happiness in Japanese communities

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Abstract

This review article examined perspectives on the well-being and health of older adults in Japan, a nation renowned for its longevity. We emphasized the impact of social capital and social relationships in local communities, considering both individual and societal factors. The prevailing values in Japanese culture tend to foster a sustained and stable form of interdependent happiness among older adults, suggesting that communal support systems play an important role. This article highlights the value of multilevel datasets, such as the Japan Gerontological Evaluation Study (JAGES) dataset, for understanding the influence of social participation on the health and well-being of older adults. A growing body of evidence underscores the central role of social relationships in the health and well-being of older adults.

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Keywords

Well-being, Health, Social capital, Multi-level dataset, Community.

People are living longer than ever before. Japan, referred to as a nation of longevity, has seen dramatic changes in this regard over the past century. As the population ages, perceptions of well-being, including physical/biological health and psychological happiness may shift. This review focuses on evidence from Japan to outline perspectives on happiness and views of health among older adults.

In Japan, many people who work in organizations retire from their corporate roles between the ages of 60 and 70. However, with extended life expectancy, the concept of post-retirement social engagement is becoming crucial to older adults' well-being [1,2] and physical/biological health [1,3]. This paper reviewed the characteristics of older adults' well-being including health in Japan, particularly concerning social capital [4] within community relationships.

Shift in social perception of aging: interdependent happiness

While older adults are often viewed as subjects for healthcare and protection, they are also recognized for their rich experience and vital role in society and are often motivated toward social engagement. In particular, Japanese culture values interdependence and emphasizes reciprocal cooperation among individuals [5,6]. This tendency is manifested in a perceived "interdependent happiness" [7] where quiescence (calmness), stability, and a focus on others are valued. This sense of interdependent happiness remains comparatively high even among older adults in Japan [8].

If happiness is seen and defined as an achievement, social status, health improvement, and wealth accumulation may be necessary, even in old age. While the idea of the ever-achieving older adult fits the active antiaging narrative, Japanese culture generally tends to foster a more sustainable form of happiness. This notion of interdependent happiness differs from happiness focused on personal achievement or satisfaction (see [9]). For many, being valued or understood by others becomes more important later in life. This suggests that happiness is supported more by communal support systems or social capital than by self-improvement [10].

Focus of the current review

This paper reviews the determinants of well-being, including both psychological/subjective happiness and

the physical/biological health, of older adults by focusing both on individual and societal factors. This will provide insights into what makes a place (e.g., local community) beneficial for the health and psychological well-being of older adults, even for those who are less socially active. To clarify this issue, this review will focus on a multilevel dataset that combines individual and regional factors (see Figure 1).

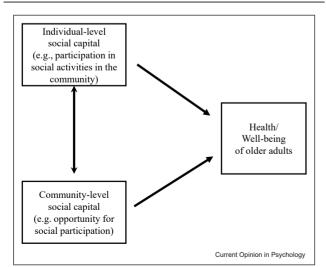
The inspiration for this approach comes from evidence suggesting that psychological tendencies are influenced by macro-level community and environmental factors [11-14]. Uchida et al. [15] sampled more than 7000 individuals from approximately 400 Japanese communities. Their research revealed that traits related to interdependence are fostered by collective activities in agricultural regions.

Health in community: the Japan Gerontological Evaluation Study (JAGES)

Research and practice emphasizing community development have expanded in health promotion for older adults. The Japan Gerontological Evaluation Study (JAGES), an interdisciplinary project, conducted a large-scale questionnaire survey on approximately 340,000 older adults living in 76 municipalities in Japan (as reported in the 2022 wave of the survey). Considering that health is greatly influenced by social structures, referred to as "social determinants of health," the project sheds light on factors at both the individual and community levels, such as social relationships.

A unique data collection strategy in collaboration with municipalities has made large-scale surveys possible [16]. In Japan, municipalities, as insurers, are responsible for planning preventive long-term care

Figure 1



Individual and regional factors to promote health and well-being of older adults.

interventions. JAGES provides practical surveys that can help municipalities formulate policies. Using a standardized questionnaire allows municipalities to compare their data with that of other municipalities, which helps to identify target issues. Data collection was conducted every three years in conjunction with the municipality's long-term care prevention project; thus, the availability of longitudinal data is another strength of this project. The response rate was high (approximately 70%).

Impacts of social participation on health

The JAGES project reported on studies that defined "social participation" as participation in various community groups such as neighborhood associations, senior clubs, and hobby groups. Older adults who participated in local sports and hobbies several times a month or more had a reduced risk of functional decline six years later [17]. The same study found that participating a few times per year had a preventive effect on functional decline [17]. In addition, older adults who participated in social activities continuously for three years were less likely to have depressive symptoms afterward, regardless of the type of group they participated in $[18^{**}]$. The more community groups participants attend, the more social support they receive and provide [19], suggesting that social participation may enrich the social support environment for older adults. Therefore, communities and places in which such activities are readily available are essential.

Potential for fostering social capital to tackle inequalities in well-being

Social isolation has been associated with various negative indicators, including death, dementia, functional disability, depression, and lack of happiness [20-22]. Among municipalities participating in JAGES, there is a 1.5-3.7 times municipal gap in happiness, and the low proportion of older adults participating in the community was attributed to this gap [23]. In Japan, local governments have established many community gathering places to prevent functional disabilities in older adults and participation in such places promotes health and social participation [24*,25]. JAGES offers an initiative to support community organizations using survey data. Municipalities that received advice from researchers on how to utilize the data to strengthen intersectoral collaboration subsequently experienced an increase in male social participation [26] and a decrease in male mortality rates [27**]. In addition, social relationships may compensate for health risks in vulnerable populations such as people with adverse childhood experiences [28] or people living in rural areas [29]. During disasters such as infectious disease outbreaks [30] and earthquakes [31-33], social capital has been reported to mitigate adverse health impacts.

Socio-psychological interconnection of a community's happiness

Social participation and social capital explain older adults' well-being at the individual level, and at the community level, as described above. Social capital helps prevent violent crime [34] and can be the basis for interdependent happiness among residents. Assuming that one's happiness is affected by the happiness of others [35], Fukushima et al. [36**] investigated the socio-psychological interconnection of happiness. They examined whether this socio-psychological interconnection of happiness occurred when individuals belonged to a community in which other members had strong social capital. The multi-level analyses of large community survey data sampled from 408 communities in Japan showed that the socio-psychological interconnection of happiness was moderated by communitylevel social capital above and beyond individual-level social capital. Notably, the surrounding socio-ecological environment in which members interact with one another leads to the sharing of the socio-psychological interconnection of happiness as a community's culture (see [37]).

Types of social activity in a community: preference-based activity and obligationbased activity

Social capital increases the individual happiness of community residents on average and also creates the socio-psychological interdependent nature of happiness at the community level, as described above. In a local community, there are various types of social activities, from an activity that individuals are eager to join (such as hobby or sports activities: "individual preferencebased activity") to an activity which is maintained based on a community's tradition or custom (such as neighborhood association or community resource maintenance: "community obligation-based activity") [38]. These activities may have different effects on the wellbeing of community residents. Fukushima et al. [39] examined the multi-level effects of preference-based and obligation-based activities on well-being (happiness, depression, and physical health) using JAGES data. The results showed that preference-based activities increased the well-being of community residents, whereas obligation-based activities decreased their wellbeing at both the individual and community levels. Furthermore, these effects were mediated by concerns for reputation at the individual level, a factor reflecting interdependence.

Fine-grained analyses of social activities using wearable devices

Recent developments in research methods have provided new insights into the types of social relationships that contribute to well-being including physical health. Although questionnaire surveys have difficulty capturing unnoticed/unmemorable interpersonal contacts (e.g., unintended brief contacts at a shop), wearable devices can do that (e.g., [40]). Komori et al. [41*] used wearable devices with Bluetooth communication and collected data on the physical proximity among residents of an aging community in a rural Japanese area over seven months. From the proximity log sequences, they extracted five distinct subnetworks among residents, each of which played different roles in the community. For example, one subnetwork showed a pattern corresponding to social relations regarding farming activities, and another subnetwork showed a pattern of daily interactions with family. They found that residents' self-rated health was associated with a subnetwork that was supposedly interpersonal contact among people who visited the community hall. The community hall functions as a gathering point for the residents, with several different activities taking place in the hall (e.g., a social gathering of the elders' club, exercise sessions by a group of women, and occasional drinking sessions). The centrality score (eigenvector centrality) of this subnetwork was positively associated with self-rated health, suggesting the potential importance of places and occasions where people connect with each other. However, the other subnetworks were not associated with health. This suggests that different social relationships have different roles and implications for health, consistent with the findings of Fukushima et al. [39]. Further effort is needed to theorize differences in the roles of social relationships and measure them more concisely.

Conclusion

Accumulating evidence suggests the importance of social relationships for the well-being including physical health of the older adult population. In the community, individuals share their lives, creating a tapestry in which their experiences and actions are interwoven with each other throughout the lives of others. The notion of interdependent happiness sheds light on this aspect of well-being and provides researchers with conceptual guidance for studying its social nature. Studying the social nature of well-being is an urgent issue as populations are rapidly aging in many societies. People often need to retire when they age and lose opportunities to meet others as a result. Physical decline with age may even enhance the loss of social contact. To prevent the isolation of older adults, intentional efforts and interventions based on scientific research are needed. As reviewed in this paper, different types of social relationships (i.e., obligation-based relationships vs. preference-based relationships) have different influences on well-being. Accumulation of data and the development of theories are still necessary. As shown above, large-scale community surveys with multi-level modeling are powerful tools for investigating the social contexts that sustain well-being. Wearable devices help to collect data on the daily lives of local communities. Psychological concepts such as interdependent happiness are useful for theorizing. Interdisciplinary collaborations are expected to play an important role in future research.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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An individual's social participation status changes over time. This study examined the depression-preventive effects of social participation among older adults, using a sophisticated epidemiological method that treats social participation as a time-varying exposure. Their analysis showed that sustained social participation for three years was associated with fewer depressive symptoms than temporary social participation. Furthermore, if conventional analysis methods were used, participation in neighborhood and senior clubs was not associated with depressive symptoms, but was associated with the authors' methods. These findings suggest that previous studies have underestimated the health effects of social participation.

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In Japan, promoting participation in community gathering places has been at the center of prevention strategies for functional disabilities among older adults. Using an "outcome-wide" analytic approach, this study examined how participation in such places is associated with 34 health and well-being outcomes across six domains. Their comprehensive analysis showed that participation in community gatherings was associated with better physical/cognitive health and more frequent participation in hobby group activities and volunteering three years later. However, the associations were mixed and modest for mental health, psychological well-being, and health behaviors.

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Using quasi-experimental research methods, this study demonstrated that municipalities with support from researchers could improve the health of their residents through active data utilization to assess communities and by promoting intersectoral collaborations. They defined the intervention group as the 12 municipalities where the researchers advised municipal officials and the control group as the remaining nine municipalities. The stabilized inverse probability of treatment weighting technique was used to account for the ease of receiving the intervention between the two groups. During the 3-year follow-up period, the mortality risk was lower among men in the intervention group.

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 Residents of a Japanese farming community brought a wearable device for seven months that detected nearby devices and collected data on spatial proximity. Non-negative matrix factorization was performed on the proximity log sequences and multiple latent sub-networks were extracted. One of the subnetworks captured the patterns of cacial contacts thing place in a community ball which placed terns of social contacts taking place in a community hall, which played the role of a "hub" within the community. The eigenvector centrality score for this subnetwork was associated with increased self-reported health. This study demonstrates a new approach for capturing multiple mutually overlapping layers of social networks in daily life.