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Does Traditional Japanese Culture Help People Cope with Stress Using the Concept of Ikigai (Reason for Being)?

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Author's contribution

Sole author performed the whole work. Author RI wrote the first draft of the paper. Author RI read and approved the final manuscript.

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ABSTRACT

Many Japanese people in modern society experience stress that may contribute to various kinds of diseases, sometimes resulting in death. One important source of stress comes from an excessive need for approval from others, or *sekentei*. Recent evidence has shown that *ikigai*, i.e., a philosophy that establishes the meaning of life, is a more effective way to cope with stress than excessive *sekentei*. These attitudes are related to prefrontal cortex (PFC) function, which is more evolved in humans compared to other mammals. Ikigai and factors influencing it are common in traditional Japanese culture, and are expressed in traditions such as tea ceremony, *ikebana*, *bonsai*, calligraphy, *waka* and *haiku* poetry, Japanese painting, pottery, *judo*, *kabuki*, and Japanese-style cuisine. Many Japanese people in modern society have an interest in traditional Japanese culture. We discuss the potential significance of traditional Japanese culture on the role of ikigai by referencing previous studies.

Keywords: *Stress; Ikigai; Sekentei; prefrontal cortex (PFC); traditional Japanese culture.*

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1. INTRODUCTION

Japanese people living in modern society have little opportunity to spend time in beautiful natural surroundings because of diminishing natural areas such as forests, ponds, and marshes [1], advanced technology, modern conveniences, and sufficient material possessions, and they experience various kinds of stress, especially troubles with complex human relationships [2]. They say: "I compete with many rivals for the position of section chief. To win, I must be more productive than them. My lower status provides an insufficient salary to purchase a large car and house. This causes my friends and neighbors to have a lower opinion of me. I am tired and empty" [3]. "I can't refuse to help my friends because I worry they may leave me" [4]. The source of these statements seems to come from the excessive need for approval from others. Our previous studies have shown that the intensity of meaning of life negatively correlates with the need for approval from others and this can cause stress [5,6]. Stress can cause anxiety, a feeling of emptiness, confusion, tension, absence of pleasure, and discomfort [7]. It also often contributes to mental and somatic diseases, such as depression and cardiovascular disease, and sometimes leads to death [7, 8]. Indeed, the number of patients suffering from excessive stress and related medical expenses in Japan has increased in recent years [2].

A paradigm shift in how happiness is recognized is occurring among the Japanese people [9]. Evidence has shown that the number of people who believe that psychological welfare is more important than material welfare is increasing in Japan [9]. However, many people still value the material. Having a preference for one philosophy over the other, i.e., psychological or material welfare, requires an established personal response pattern [10] and is related to specific prefrontal cortex (PFC) functions in the brain [11]. Recently, there has been a great deal of brain research in the function of specific areas of the central nervous system, especially the PFC, development of neuronal networks, and neurotransmitters and hormones [11,12]. This research can lead to understanding that one's default philosophy may be based on not only psychological stimuli but also the development of brain function, especially PFC function, which is more evolved in humans compared to other mammals [11,12].

People remember and encounter both good and bad psychological events [13]. Recent evidence has shown that the desire to establish the meaning of life, i.e., *ikigai* in Japanese, can help a person evaluate and integrate such good and bad psychological events with less confusion, causing a decrease in anxiety and increase in inner peace [5]. An example could be: "My *ikigai* is teaching children who are happy to learn from me." *Ikigai* develops by spending time in beautiful natural surroundings, being moved by people and events, and experiencing warm-hearted human relations such as being listened to with empathy [5, 14]. Traditional Japanese culture promotes gratitude for the blessings of nature, respect for the terrifying power of nature, cooperation with others, simplicity, having a pure heart and a mind at peace, and the pursuit of new knowledge [15-19]. The concept of *ikigai* and factors influencing *ikigai* seems to be a common theme in traditional Japanese culture. Recent evidence has also shown that *sekentei*, the desire to get excessive praise from others, causes, in contrast, greater anxiety and less inner peace than *ikigai* [6]. An example of this anxiety could be: "My lower status and lower salary compared to other employees in the company is not good in terms of *sekentei* and my friends and neighbors." Excessive *sekentei* seems to be common among modern Japanese people with excessive stress. More detailed explanations and additional examples of *ikigai* and *sekentei* are shown in the "Preliminary Evidence for *Ikigai* and *Sekentei*" section. Recently, many people have expressed an interest in traditional Japanese culture [20] as useful in helping reduce their stress.

Therefore, we discuss the significance of traditional Japanese culture in relation to helping provide modern Japanese individuals with *ikigai* to improve their ability to cope with stress. This process should involve consideration of PFC function.

2. PREFRONTAL CORTEX

2.1 Lifestyle in Ancient Times

Ten thousand years ago humans lived in small groups in forests, mountains or grassy plains, near rivers or seas [19,21]. They experienced gratitude and fear when unexpected natural phenomena occurred [19,21]. The practice of animism was a way to help explain these natural phenomena. Each *kami* (deity) corresponded to an entity or event. People had to cope with whatever physical conditions occurred. They got food from nature such as fruits and nuts from trees, animals from forests, mountains and grassy plains, and fish from rivers and seas. The purpose of obtaining food was survival rather than a way to get praise from others. This process required physical ability, and integrated cognition of the situation and the ability to decide how to act to avoid dangerous conditions and wild animals. Survival was directed by brain function, especially the PFC [10,11], which has an important role in homeostasis, i.e., stress regulation [22]. Success or failure to get food could result in the secretion of neurotransmitters and hormones, causing emotions such as pleasure or emptiness [10-13,24-27]. The human PFC has evolved for tens of thousands of years and has contributed to adaptation to environments [10,11]. Lifestyles like this lasted for tens of thousands of years. In contrast, modern times, characterized by the destruction of natural surroundings, advanced technology, and globalization, have existed for only 40 or 50 years [2,21]. The differences between ancient and modern times suggest that successful adaptation to modern society may require more listening to the natural instincts that originate in the PFC.

2.2 Prefrontal Cortex Function

The PFC has an important role in adaptation to changing environments, i.e., homeostasis, via the autonomic nervous and endocrine systems [e.g., 12]. The PFC in humans, which is more evolved compared to other mammals, provides the ability to adapt to changing environments [10,11]. It has extensive connections with other areas of the brain and integrates the functions of these areas [10,11]. Functions of the PFC include cognition, producing ambition and emotion, evaluating information, mental integration, making judgments and decisions, planning for voluntary activity, and organizing responses [10,11]. Expression of these functions, i.e., phenotypic expression, is influenced by the interaction of genetic, epigenetic, and environmental factors [28]. The autonomic nervous system functions using neurotransmitters, and the endocrine system uses hormones [10-12,14,23-27]. The secretion of both is dictated by the PFC [10-12,14,23-27]. Serotonin balances PFC excitation for proper emotional maturation to occur and helps keep activation within homeostatic ranges necessary for optimal cognitive processing and emotional regulation [29, 30]. Dopamine activates the PFC in response to changing contingencies (prediction errors) and facilitates behavioral reinforcement in order to determine if current feedback is still in line with expectations, and thus it facilitates response reversal, extinction, and modulation [31]. Norepinephrine enhances the signal-to-noise ratio in PFC neural networks so that attention is focused on the matter at hand [32]. β -Endorphin provides the PFC with pleasurable feelings [33,34]. Oxytocin provides feelings of familiarity and trust in other people [35]. Endogenous testosterone modulates the PFC-amygdala connection during social emotional behavior

[36,37]. The ability to adapt to changing environments, i.e., homeostasis, depends on the PFC influencing the autonomic nervous system, i.e., the balance between the sympathetic and parasympathetic nervous systems and the endocrine system.

2.3 Development of PFC

People like to have stable, positive emotions, including ambition, pleasure, and comfort, and dislike negative emotions, including anxiety, fear, and confusion [10,38]. This state of stable, positive emotions and lack of negative emotions is healthy for the brain [38]. Emotion is often related to motivation [5,10]. Motivation is related to human behavior and has two types, intrinsic and extrinsic [5,10,39]. Intrinsic motivation relates to getting pleasure from the action of doing a task. Extrinsic motivation relates to doing it to get others' praise or a reward. Depending on the type of motivation, repeated successful behaviors accompanied by positive emotions strengthen the synaptic plasticity of different neuronal networks in the PFC [11]. This process is reinforced via repeated secretion of neurotransmitters and hormones [11] and contributes to establishing a philosophy, i.e., the default PFC neuronal network, shown by a stable response pattern to a given environment [11]. The ikigai philosophy is reinforced by repeated experiences of intrinsic motivation, while the sekentei philosophy is reinforced by repeated experiences of extrinsic motivation [39]. Positive emotions from ikigai are stable and continuous because these emotions depend on internal resources, which do not change relative to external circumstances [40]. Positive emotions from sekentei are unstable because the emotions depend on external resources, which easily change [40]. Therefore, ikigai, compared to sekentei, could provide a person with a superior ability to adapt to changing environments [40]. Ultimately, successful adaptation to the stresses of modern society could require each person to have a dominant neuronal network of the PFC based on a firm ikigai rather than excessive sekentei philosophy [40]. It should be noted that PFC function, i.e., the dominant neuronal network, becomes more mature during adolescence and changes even after adolescence not only due to genetic factors but also because of life experiences [11]. Expressions of PFC function, i.e., phenotypic expression, depend on the interaction of genetic, epigenetic, and environmental influences [28]. This evidence shows that it is possible to improve the ability to cope with stress even during adulthood [11].

3. PRELIMINARY EVIDENCE FOR IKIGAI AND SEKENTEI

3.1 History of Ikigai and Sekentei

Stances of ikigai [41] and sekentei [42] have developed over many years in Japanese culture and Japanese people have begun to understand the importance of these philosophies on responses to stress. The term ikigai has appeared in classical Japanese literature since the twelfth century [41]. It means establishing a personal meaning of life. Ikigai is similar to the "purpose in life" (PIL) of existentialism [43,44]. The two concepts propose that everything changes; life is a one-time opportunity; every person contains the need to establish a meaning of life [43-46]; and people should live in harmony with that meaning in the here and now. The term sekentei has also appeared in classical Japanese literature since the twelfth century [42] and means a philosophy of adaptation to the expectations of those who evaluate one's contributions to society [6]. The term is similar to "social desirability." Ikigai can be measured using psychological instruments such as the Purpose in Life test (Ikigai test) [44, 47]. Sekentei can be measured using psychological instruments such as the Lie scale of the Manifest Anxiety Scale (MAS) [48]. Japanese

people often say things like, “My ikigai is to paint and to grow flowers,” “His ikigai is to guide tourists through his town, which is rich in traditional culture,” and “Wearing cheap, used clothes in a ceremony is not good for sekentei.” These two philosophies (ikigai and sekentei) have been an important part of the way Japanese people have adapted to society for many years.

3.2 The Influence of Ikigai and Sekentei on Health

Recent reports have included evidence of the influence of ikigai and sekentei on health. Persons with firm ikigai compared to those with weak ikigai showed a greater ability to evaluate and integrate psychological events, resulting in less anxiety, confusion, and sympathetic nervous system activity during stressful situations [5,14] and lower risk of death from cardiovascular disease [46,49,50]. A deeper sense of meaning of life, i.e., ikigai, is associated with favorable outcomes, such as high self-esteem, a secure and just worldview, academic adjustment, interpersonal trust, consideration for others, daily well-being, acceptance of bad luck or adversity, and attempting to perform even difficult tasks [45,46,49-51]. The intensity of ikigai is negatively correlated with need for approval from others, as shown by the Martin-Larsen Approval Motivation Scale (MLAM) scores [5]. Persons with excessive sekentei showed greater anxiety and sympathetic nervous system activity during stressful situations such as being evaluated by others during achievement of a goal or task [6]. Ikigai develops from positive experiences, i.e., intrinsic rewards, such as being moved by other people and events, success with challenging tasks, empathetic conversation with others, and spending time and playing in beautiful natural surroundings [14]. Sekentei, i.e., the need for approval from others, develops from negative experiences, i.e., extrinsic rewards, such as excessive expectations of inappropriate praise from others, especially parents and teachers [6]. The evidence in this section suggests that many modern Japanese people with stress may have excessive need of approval from others, i.e., excessive sekentei, and have lost the philosophy of finding their meaning in life, i.e., ikigai. Many Japanese people in modern society may ultimately be receiving less of the benefits that come from listening to PFC instincts. Improvement of PFC function by factors influencing ikigai may increase the ability to adapt to changing environments, leading to increased ambition, pleasure, and comfort, and decreased anxiety and emptiness.

4. TRADITIONAL JAPANESE CULTURE

Japanese culture has traditionally valued nature, as evidenced by a cultural fear, gratitude, and respect for nature because its power is believed to be far stronger than humans' and greatly influential to daily life [15-19]. For example, in the spring and fall Japanese people often hold festivals at Shinto shrines of any size in every community. The spring festival, usually called “harumatsuri” in Japanese, is performed to pray to the kami (deities) that rice or vegetable crops will develop well and be safe from natural disasters such as heavy rain, drought, and strong winds. The fall festival, usually called “akimatsuri” in Japanese, is performed to express gratitude to the kami for a bountiful harvest. Japanese culture has also traditionally valued the idea of the importance of “natural behavior” [15-19]. For example, when Japanese people express praise, they value a natural and sincere style of praise more highly than an artificial, sycophantic style. Even though Japan has had contact with many cultures, the idea of the importance of nature and this natural behavior has continued [15-19]. This idea may depend on having lived in natural surroundings for a very long time [15-19]. This process may have provided benefits for PFC function in ancient times.

These cultures [15-19,52,53] include the Jomon culture, which developed in natural surroundings over 15,000 years ago in Japan, where people used earthen vessels and practiced animism, i.e., the belief that each thing in nature has a kami (deity); Yayoi culture which brought rice cultivation and flourished from the fourth century BC to third century AD; Shinto with the belief in eight million kami; Buddhism which came from ancient India through old China to Japan during the sixth century AD; Confucianism during the sixth century; Taoist ideas mixed with ideas from Zen Buddhism from China during the seventh century; and knowledge from the Netherlands during the eighteenth century when only Dutch trade was allowed because the Tokugawa shogunate had closed Japan to all other foreign influences. There are some differences in the dates of the events according to the references. The process, however, seems to have provided the Japanese people with the idea of the importance of nature, cooperation with others, meaning of life, simplicity, a pure heart and a mind at peace by cognitive integration and the pursuit of new knowledge. The following examples [15-19] reflect the idea that nature and natural behavior are important.

Chado, the tea ceremony, promotes inner peace; Ikebana, the art of flower arrangement; bonsai, expression of the beauty of nature by nurturing dwarf trees in earthenware pots; Japanese gardens promote the beauty of nature; haiku and waka are types of Japanese poetry; shodo, Japanese calligraphy, sumie, pictures drawn with sumi ink; Japanese painting refers to antique pictures drawn using colored ink; yakimono (togeji) or Japanese pottery; kabuki plays; noh is a type of masked dance-drama; joruri or narrating with a Japanese traditional musical instrument; music with Japanese traditional drums, flute, and shamisen; sports such as kendo, meaning Japanese fencing, sumo, meaning Japanese wrestling, and judo all promote inner peace through integration of mind, importance of manners, and consideration for others rather than who wins or loses; Japanese shojin-ryori, vegetarian cuisine; ancient tombs; earthenware vessels (e.g., from Jomon and Yayoi periods); dancing; shogi or Japanese chess; Japanese cuisine (e.g., sushi, soba); castles, ruined houses and roads, and other historical ruins and events.

Regardless of occupation, age, sex, surroundings, or expertise, every person can enjoy these activities by practicing and observing them. In the process, we are offered opportunities to be moved and to understand the spirit of Japanese people in ancient times. Neuronal networks become more mature during adolescence and change even after adolescence as a result of not only genetics but experience [11]. Expressions of PFC function depend on interactions of genetic, epigenetic, and environmental influences [28]. Therefore, the process of enjoying these activities, which relates to nature and natural behavior [5,6,14], also could help us have ikigai and could decrease excessive sekentei, leading to greater ambition, pleasure, and comfort, and less anxiety and emptiness [5,14].

Limitations exist. The effects of the above activities on individual philosophies are hypothetical. Many other classical cultures have traditions that influence philosophies. Modern culture also influences philosophy. Advancement in brain research, including evolution, genetics, and epigenetics, should help determine if neural connections exist. If so, the significance of these activities in influencing the ability to cope with stress should be discussed based on scientific knowledge.

5. CONCLUSION

Many Japanese people experience excessive stress in modern society and have less opportunity to spend time in beautiful natural surroundings because areas such as forests and ponds are less accessible. Previous evidence has shown that ikigai, which is the

philosophy of finding the meaning of life, is a more effective way to cope with stress compared to excessive *sekentei*, which means a philosophy that promotes adaptation to the expectations of society. *Ikigai* develops through positive experiences including spending time in beautiful natural surroundings and warm-hearted human relations, e.g., being listened to with empathy, being moved by people and events, and success from challenging activities. Traditional Japanese culture has promoted the importance of nature, a pure heart and a mind at peace, and cooperation with others. Therefore, recommending various activities from traditional Japanese culture may be one way to help Japanese people establish their own individual *ikigai* as an effective way to manage stressful events. This process may improve PFC function, leading to greater ambition, pleasure, and comfort, and less anxiety and emptiness.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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