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The Last Lecture: Bioethics of Happiness, with a Special Reference to the Five Senses and the Reward System of the Brain in Secular Spiritual Care

Noritoshi Tanida

Department of Medical Humanities, Yamaguchi University Graduate School of Medicine, 1-1-1 Minami-Kogushi, Ube, Yamaguchi 755-8505, Japan
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Prologue

Happiness has a long-lasting tradition as a subject of philosophical and ethical thinking. Bioethics deals with problematic issues derived from life in general or those from human suffering in particular. Naturally, the theme relating to happiness or love which is reflection of joy, pleasure and affection is not a common subject to deal with in bioethics education. But, there has been a need from students to learn the implication of happiness and love in bioethics. Since happiness and love are essential elements for human being, their wishes are quite reasonable. The author has chosen the title "Bioethics of Happiness" as the memorial last lecture in his university career in response to a students' need.

Happiness and Spirituality

It was probably exceptional that happiness was selected as a bioethics conference theme of the UNESCO-Kumamoto University Bioethics Roundtable in 2010. With respect to love, a book entitled "*Bioethics is Love of life*" was published by Darryl Macer in 1998,¹ where love and happiness was linked to spirituality. Spiritual well-being is one of the essential domains of health, although it has not been included in the definition of health by World Health Organization (WHO) despite rigorous discussion.² Irrespective of the definition of health, spiritual pain or suffering of spiritual well-being is usually a sub-

ject of discussion in healthcare settings. It is particularly important in end-of-life care, as WHO remarks "palliative care improves the quality of life of patients and families who face life-threatening illness, by providing pain and symptom relief, spiritual and psychosocial support to from diagnosis to the end of life and bereavement."³ Achievement of the healthy state by medical intervention may mean the restoration of negative influences due to sufferings from physical, mental and social disorders, whereas spiritual well-being may be attained, in a certain sense, by an "enhancement" process toward happiness beyond the restoration of negativity. The author tries to articulate the process of spiritual healing with art therapies through the five senses and the reward system, which may partly illustrate the implication of happiness in bioethics.

Spirituality and Spiritual Pain

The Latin word, "*spiritus*" meaning "respiration" is the original word of "spirit." In Japanese language too, the word "*inochi*" meaning "life" is an abbreviated form of the original word "*iki-no-uchi*," meaning "the core of respiration." Accordingly, spirit usually reflects in the interior of life. In secular understanding, spirituality is an essential part of life or the element of a person who looks for meaning in his/her life and longs for connection to his/her important attachments. In the Christian society on the other

hand, the idea of spirituality stems from Holy Spirit. In hospice care for example, spiritual care has a long tradition on Christianity as pastoral care. Buddhism also has such a kind of religious spiritual care as denoted as Bihara care.

Here, the author does not try to refine spirituality, but applies spirituality to embrace broader domains as his/her "spiritual," religious or personal beliefs which are connoted in his/her life and affects his/her quality of life. This broader concept does not exclude a particular religion or a personal belief in something higher powerful exists beyond the material world. Nor it excludes his/her beliefs in a scientific theory or a particular philosophy. In other words, one may believe in a higher spiritual healing power of Something Great, or the healing process may be understood from neurotransmitters and neuropeptides in brain science. Thus, spirituality has meaning for the wider public and not be intended for a select group.

When life is in danger, spirituality suffers from crisis of life. An endless question by family members, who lost the beloved from disasters or crimes and keep asking as to why this happened, connotes spiritual suffering too. Spiritual suffering has been under-

stood as a part of total pain as suggested by Dame Cicely Saunders.⁴ And, total pain well fits in the definition of health introduced by WHO and the appearance of healthcare professionals in history (Fig. 1).⁵

One side of spiritual suffering is secular or existential pain, i.e., suffering from fear of extinction of his/her meaning of life and breaking off connection with the beloved. Such existential questions as "why do I have to die now?" "what is the meaning of life?" and "what has been important to me in my life?" may be universal among religious and nonreligious persons, and can be cared for by secular healthcare professionals. Another side of spiritual suffering is religious pain rooted in guilt, shame or fear leading toward punishment by the God or Buddha. Such religious struggles of patients can be alleviated by religious care. These sufferings as "will I see my loved ones again?" "is there a meaning in suffering?" and "is there life after death?" may have both religious and secular elements. Such characteristics of spiritual pain and spiritual care suggest a two-step approach may be appropriate, i.e., secular spiritual care for everyone and religious spiritual care for patients wishing religious aid.

A person who raises a question may have

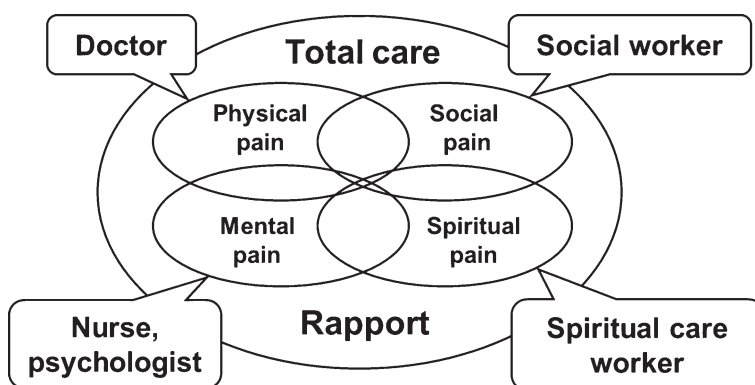


Fig. 1 Total pain and total care.

Corresponding to each domain of health, there are four components designated as total pain in suffering. Our society has provided specialists for each suffering. The order of their appearances was identical to treatment needs in the individual patient. In cancer patients for example, the doctor has appeared first for the most annoying physical pain. When physical pain is under control, mental pain and social pain emerge in patients. The nurse or the psychologist and the social worker have been provided for these sufferings. And now, the spiritual care worker has appeared for the remaining suffering of patients. A rapport with these professionals is essential for care of total pain in patients.

his/her own answer; most have their own perceptions of these questions though unclear in his/her mind. The perceptions thus have not been thought out by the patient, therefore, deep listening by and reflective dialogue with healthcare professionals will help the patient to elucidate and to formulate what their existential questions and answers are. WHO recommendation is a comprehensive and concise guide for spiritual care on patients, namely “learn to listen with empathy,” “understand reactions to the losses in their life,” “be prepared to absorb some reactions, for example anger projected onto the health worker,” “connect with spiritual counselor or pastoral care according to the patient’s religion and wishes,” “do not impose your own views. If you share religious beliefs, praying together may be appropriate,” “protect your patient from overenthusiastic evangelists” and “for some patients, it is better to talk about meaning of their life, rather than directly about spirituality or religion.”⁶ The fact there is no definitive answer for spiritual questions indicates that individualized support is necessary for those with spiritual pain. This article focuses on secular spiritual care, although the author is aware of difficulty in separating secular and religious care distinctly.

Secular Spiritual Care and Art Therapy

There is growing evidence that art therapies including visual arts, auditory arts and performance arts are effective for ameliorating patient’s spiritual suffering. A picture speaks for itself, and “a picture is worth a thousand words” as in the U.S. saying.⁷ Thus, painting therapy works in both drawing and seeing a picture, and above all talking materials in the picture among all parties concerned. Music therapy not only heals patients through music but also the effect is augmented by the presence of musicians.⁸ The use of narratives such as poetry reading and storytelling (narratology) is important for spiritual care. Touching stories are impressing, since they connote spirituality and stimulate listener’s mind. Storytelling and poetry reading, thus shares personal experiences and achieve a sense of bonding and in-

timacy with all participants.⁹ Writing poems by sufferers themselves has the same effects. Dignity therapy is one of the narratological tools for spiritual healing in the terminal patient via accomplishing his/her personal history.¹⁰ Aromatherapy ease patient’s suffering through olfactory stimulation, and the effect is augmented with addition of touching.¹¹ It is really symbolic for touching effects when we consider that the Japanese word “*kango*” meaning “nursing” has “*te*” meaning “the hand” in its Chinese character and medical intervention is expressed as “*te-ate*” meaning “touching with the hand” in Japanese. The healing effect by companion animals may be the same as touching.¹² Joy from enjoying tasty foods may not deserve further consideration. In general the visual sense contributes most dominantly among the five senses.¹³ And it is important for art therapies that communication and emotional recognition are promoted through intimate eye-contact.¹⁴

The words of Kan-ami (1333-1384), a founder of Noh (a classical Japanese dancing performance) indicated the efficacy of art for spirituality. Ze-ami (ca1363-1443) who was a disciple (son) of Kan-ami published his father’s words in “*Kadensho* (Noh-art theory based on floriology).”¹⁵ The secret skill of the essence of Noh was shown in the book, namely “the secret skill of Noh tells us that art prolongs life expectancy with happier time by inducing pleasure and calming turbulence of all people. Once art has attained that secret skill, any art well works in that way.” Kan-ami added that “an actor would no longer prolong longer happier life of people, if he lost public support.”

Thus, art therapies are effective for healing of sufferers. It is particularly useful in situations like giant disasters when our world no longer makes sense by words. For example, painting therapy was used widely for victimized children. Several distinguished actresses impressed victims deeply by reading stories and poems in the days after the earthquake and tsunami in 2011. Amelioration of patients’ sufferings is attained by the art introduced to patients and by the presence of materials and artists. It is, thus indicative that the bonding and interaction between the patient and healer has a crucial role in the ef-

fect of art therapies. It is also noticeable that art therapies utilize the five senses, i.e., sight (visual, ophthalamoception), hearing (auditory, audioception), taste (gustaoception), smell (olfacoception) and touch (tactioception) very effectively. Thus, activity of the five senses in art therapies may lead to the concept that spiritual healing may be mediated via the reward system of the brain.

Activation of the Reward System via the Five Senses

By the favorable stimuli to individuals the reward system provides the feelings of pleasure and satisfaction to the brain that motivates them to repeat such behaviors inducing pleasurable sensations. The main structure of the reward system is located in the limbic system, a set of primitive structures in the human brain.¹⁶ The nuclei and relating parts of the limbic system include the hypothalamus, amygdala, hippocampus, septal nuclei, anterior cingulate gyrus, and limbic striatum including the nucleus accumbens, ventral caudate nucleus and the putamen. The major pathway of the reward system is the mesolimbic and mesocortical pathway. The mesolimbic pathway goes from the ventral tegmental area via the medial forebrain bundle to nucleus accumbens, the primary release site for the neurotransmitter dopamine. The mesocortical dopaminergic system extends its fibers to the prefrontal, cingulate and perirhinal cortex. These two systems are overlapped, and are collectively referred to the mesocorticolimbic system or the dopamine reward system. The dopamine reward system is activated in a variety of learning and experiences as well as sexual and eating drives.

The feelings which may lead to pleasure and satisfaction can be sensed at the different parts of the cerebral cortex depending on the five senses. The thalamus processes incoming information from the five senses, and relays sensory information to the amygdala which processes emotional experiences and reactions. The amygdala which has intimately connected to the hypothalamus and close connection to and from the prefrontal cortex judges the emotional significance of incom-

ing information. Then, the acquirement and processing of pleasure, joy, fear, anger, flight and defense are prompted in the hypothalamus followed by a number of sympathetic nerve reactions depending on emotions induced by stimuli. In addition, stimuli reach to the frontal cortex or forebrain, the thinking center of the human brain. Interconnection among the brain system influences the dopamine reward system and several of its afferent and efferent functions each other. Linking the reward system and the frontal cortex may be one of the reasons why intellectual activities such as a dignity therapy induce healing in spiritual sufferers. Thus, once our brain feels pleasure either from the five senses or from intellectual activities of the forebrain, the reward system motivates individuals to repeat that pleasurable sensation.

Furthermore, dopaminergic nerves stimulate secretion of neuropeptides such as oxytocin and vasopressin at the paraventricular nucleus.¹⁷ Since oxytocin receptors are present in the reward system of the brain including the amygdala and nucleus accumbens, released oxytocin influences and reinforces the survival activity like nutrition and reproduction. Animal studies and human sociological research indicates that these neuropeptides, especially oxytocin reduces stress reactions, fear and anxiety, while enhances positive social behaviors like intimate social interactions, trust, rapport and attachment.¹⁸

Spiritual Healing through the Five Senses and the Reward System

Thus, the pleasure sensed by the five senses through art therapies stimulates the reward system and induces secretion of oxytocin and vasopressin. These neuropeptides play a critical role in formation and maintaining bonding and generating positive social attitudes and feelings in humans.¹⁸ As Kan-ami suggested, art offers happier time by inducing pleasure to all people including patients with spiritual pain. The afferent and efferent nature of the mechanisms involving the five senses and the reward system with neuropeptides promotes social attachment and facilitates happiness and love, in other words

secular spiritual healing.

Oxytocin may also mediate the benefits attributed to therapies such as hypnosis or meditation. Among the religious care, meditation has been used extensively for overcoming stress-related conditions by inducing sympathetic/parasympathetic nerves harmony and relaxation through suppression of stress hormones like adrenaline. The mechanisms of meditation may be applicable to other body-mind techniques such as mindfulness, Yoga and even some religious cares.¹⁶ This is not to say that neurotransmitters and neuropeptides explain everything on social bonding and attachment or spirituality. Indeed, as the brain grows larger, factors outside chemicals and genes contribute greater part for social development and activity of animals.¹⁹

Conclusive Summary

Spirituality is one of the essential domains in healthcare. Although healthcare professionals may not be able to provide religious support put forward in the Declaration of Lisbon entailing the rights of the patient, there is ethical obligation to provide at least secular spiritual care. Indeed, secular spiritual care is factually equivalent to narrative-based medicine, which is essential in medicine together with evidence-based medicine.⁵ And the importance of spirituality in end-of-life care has gained broad acceptance among medical society. The vulnerability of patients and a wide variety of their religious and spiritual backgrounds urge to take their preferences into account for any patient care.

Secular spiritual care has its foundation on the reward system and neuropeptides in the brain. Art therapies enhance and facilitate spiritual healing via the five senses with the reward system. Spiritual care induces mutual effects to both providers and receivers of care. As people feel safe in connection to others, everyone has some spiritual needs. Therefore, tools for spiritual care will give healing and satisfaction not only to patients and care providers but also to the general public.

Epilogue

The lecture could not extend beyond the overview of art therapy, reward system and neuropeptides. Relevant issues such as hope and love are left untouched. Negative implications of happiness such as booming happy pills in the U.S. for enhancement have not been explored either. Probably too much pursuit of happiness should be discussed in conjunction with the suggestion of happiness as a psychiatric disorder.²⁰

Life is beautiful, and it is an end in itself. Moreover, life is happier by enjoying arts as Kan-ami suggested. One of the roles of bioethics is to promote understanding on problematic issues in medicine and life. Then, the deep consideration on spirituality and spiritual care may have complied, to a certain extent with the need of students who asked the author to deal with happiness in bioethics education.

Conflict of Interest

The author states no conflict of interest.

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