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Movement speaks of culture:

A study focusing on women with depression in Taiwan

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Highlights
- The movement characteristics and the psychological constructs of women with depression in Taiwan are explored.
- Initial results show that women with depression use less sagittal movement than women without depression.
- Results also show that the distances between social roles and actual/ideal self are correlated to depression.
- The interpretation of the research results is that women with depression in Taiwan might experience difficulties in finding themselves while maintaining stressful social connections and striving to meet society's expectations on the social roles they are expected to play.

Abstract

Body, movement and mind are united. Depression can be embodied, and the movement of people with depression is often different from people without depression. This embodiment will most likely vary from culture to culture because depression is a condition that profoundly reflects cultural and social patterns. This article firstly explores a study which examined the movement characteristics and the

psychological constructs of women with depression in Taiwan. Secondly, interpretations of cultural meanings from the perspective of individualism/collectivism are made. Data gathering tools employed in this study are repertory grid technique from personal construct psychology and Laban Movement Analysis (LMA). Initial results showed that women with depression use less sagittal movement than women without depression. In addition, it was found that the distances between social roles and actual/ideal self were correlated to depression. The results might illustrate the difficulties these women experience in finding themselves while maintaining stressful social connections and striving to meet society's expectations on the social roles they are expected to play in a collectivistic culture such as Taiwan. The understanding of the connection between depression, culture and movement is beneficial for embodied psychotherapies such as body psychotherapy and dance movement psychotherapy. This awareness of cultural differences for therapists, and the corresponding therapy strategies, approaches and techniques can then be adopted.

Key words: Depression, Individualism/collectivism, Laban Movement Analysis, Repertory grid, Taiwan, Women

Introduction[1]

It is generally recognized that there are connections between depression, culture and movement. Research on the embodiment of culture can be found in some fields such as anthropology (Ness, 1992), phenomenology (Csordas, 1999), psychology (Krauss, Chen, & Chawla, 1996) and psychopathology (Ekman, & Friesen, 1974). The theme of culture and movement has captured the attention of sociologists for a long time (Mauss, 1973). In addition, the connection between culture and depression has also been extensively researched, such as the effect of cultural and social factors on the diagnosis, symptoms and perceptions of depression (Kirmayer, 2001; Matsumoto & Juang, 2016).

Nevertheless, research that focuses on the complex inter-connection between all three factors: depression, culture and movement, is far less common. The construction and development of our body and mind is undoubtedly influenced by the culture, society, and the environment in which we live. This research is especially crucial to dance movement psychotherapy (DMP) which is based on the strong belief there is a connection between body and mind. Dance movement psychotherapists intervene by engaging with the client's movement repertoire and qualities, and by exploring the personal meanings of the movement based on his/her knowledge and understanding of movement observation and analysis. By exploring the connection between culture, movement, and depression, dance movement psychotherapists are not only generally aware of the existence of cultural issues during therapy but are also able to actively provide effective treatment founded on the evidence-based exploration of culture.

In this article, the first author, living in Taiwan, chose it as the place to explore the connection between culture, depression, and movement. Results of the study have been compared with the existing evidence in the Western world. This comparison has been further interpreted with respect to the

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[1] This study is part of the author's PhD thesis, and some material herein have been introduced in the published work which is written by Cipolletta, Lin, Payne and Winter (2017) which focuses on the interpretation of movement qualities from the perspective of personal construct psychology. The design of the research with reference to recruitment, the details of the group intervention, the method of collecting the movement qualities are also addressed.

cultural differences between Taiwan and Western culture from the perspective of individualism/collectivism. In this article the interpretation is followed by a case study and a discussion of the therapeutic implications of this study, as well as suggestions regarding further research.

Depression and movement

Many researchers have noted that depression can be embodied. For example, Nummenmaa et al (2014) suggest that emotions can be embodied, and "play critical roles in emotional processing" (p.650). In addition, people with depression have different movement characteristics from people without depression (Stratou, Scherer, Gratch, & Morency, 2013). People with depression may move restrictively and with less variation, which may reflect psychiatric disorders. According to Davis (1981), people with "healthy movement" tend to move in more integrated and dynamic ways, and their movement is full of variation.

There are two main research methods of studying the movement of people with depression. The first method is the observation of the upper body and facial expression which is usually adopted in talking counselling and therapy settings due to the limitation of the clients' sitting posture. For example, Waxer (1974) proposed that clients with depression in talking psychotherapy sessions were found to have restricted facial expression, to avoid eye contact, and to look downward. Consistent with Waxer's results, Kazdin et al. (1985), Schneider et al. (1990), and Troisi and Moles (1999) indicate that people with depression tend to have constricted facial expression, social interaction, and motor activity.

Facial expressions and upper body movement such as the above are researched extensively. The second method is the observation of the clients' whole-body movement, which is usually conducted by body-related psychotherapists. For example, Stanton-Jones (1992, p.232) suggested that patients with depression tend to have a "floating" quality, less various combinations of effort, restricted use of space and kinesphere, limited movement complexity, fewer postures and gestures, and neutral weight. Wilkes, Kydd, Sagar, and Broadbent (2017) proposed that people with depression have "slumped posture" (p. 143). Michalak et al (2009) analyzed gait patterns associated with depression to explore

4

the embodiment theory hypothesis that there is a reciprocal relationship between bodily expression and the way emotions are processed. Their results showed that depression/sadness is embodied with gait patterns characterized by reduced walking speed, arm swing, large lateral swaying movements of the upper body, and a more slumped posture.

Due to the development of technology, more and more researchers choose motion capture to observe movement. For example, Giraud et al (2016) found that people with negative mood tend to have limited variability and increased jerkiness. In addition, Shafir, Tsachor and Welch (2016) found that the emotion of sadness is highly connected to passive weight movements such as sinking and heavy movements. Another recent study indicated that compared to the healthy controls, patients with a psychotic disorder tend to show vertical rising and sinking dynamic of upper body, while sagittal direction of stepping is observed in their lower body (Meent, Cahn & Boute, 2018).

Recent research also adopting motion capture made similar observations that depression affects expressions via movement (Punkanen et al, 2017). People with depression tend to "move less, slower, with slow acceleration, and in more closed positions, and additionally changed the way they moved only slightly when expressing different emotions" (*ibid*, p.850). Based on the observations, the effectiveness of short-term dance movement psychotherapy to people with depression is examined, with positive results (Punkanen et al, 2014). Some other researches also suggest that dmp can improve depressed mood (Mala, Karkou & Meekums, 2012; Meekums, Karkou & Nelson, 2015).

Although there are many advantages to using motion capture such as obtaining more precise three-dimensional data, limitations do exist. For example, it is much more expensive and there is a lack of information about the context (Punkanen et al, 2017). Methods requiring observers and/or raters are still useful when assessing movement. For example, Koch, Morlinghaus, and Fuchs (2007) suggested that people with depression have a slower walking pace. Michalak, Troj, Schulte, and Heidenreich (2006) proposed that people with depression have less vertical movement. Michalak et al (2009, 2012) also found that participants with depression showed less vertical movement of the upper

body than never-depressed participants. Koch et al (2007) therefore assumed that encouraging patients with depression to do vertical movement can decrease their level of depression.

The research results discussed here meet their assumption. The contribution of this research is that the effectiveness of a particular movement quality to the treatment of depression is examined, which provides therapeutic implications of depression for body and movement-related psychotherapists. Although the research did not amplify the role culture plays, it inevitably exists. As Stanton-Jones (1992) noted, body and movement represent and concretize the processes of activities in the mind, and reflect "personality, culture, psychopathology, intra/interpersonal, and cultural patterns" (p.61).

Culture, movement, and depression

Generally speaking, culture refers to the inclusion of all "humanly constructed and transmitted dimensions of social life" (Patel *et al*, 2013, p.42). From the beginning of one's life, enculturation and socialization begin. The way one encounters the world is influenced by culture and at the same time construes the culture itself. Therefore, when talking about mental health, cultural background matters. Culture influences the formation of symptomatology, progression, results of disorders, and "helps the researchers to clarify the role of social and cultural factors in psychotherapy and treatment" (*ibid*, 2013, p.41).

The connection between depression and culture is greatly emphasized in existing research. Kleinman claimed that "depressive illness is a profoundly socio-cultural disorder, which relates to society, and suggests how society affects individuality" (Kleinman & Good, 1985, p.429). Therefore, studying culture may increase the understanding of the clients with depression, inspiring the method of intervention and to benefit the development of a therapeutic relationship. For example, Ko (2017) brought 'haan' into discussion (this is a cultural-related syndrome in Korea combining of depression, anxiety and psychosomatic pain), and explained how a Korean scarf dance can be an effective intervention for a Korean woman with haan.

A popular perspective from which to explore the connection between culture and depression is the cultural dichotomy of individualism-collectivism. Individualism is claimed to be highly connected to depression (Blazer, 2005; Sato & McCann, 1997). Individualism, which is proposed to be a characteristic of Western culture, is self-focused and highlights individual values rather than collective values (Triandis, 1996). Individualism can result in isolation; isolation can entail insufficient social support; and consequently, depression can be generated (Chen, Jiang & Lin, 2000; Way & Liebeman, 2010). On the contrary, collectivism is believed to be more socially oriented, and group interests are seen as more important than personal interests. Therefore, in collectivistic cultures such as Chinese culture, depressive population is less than their counterparts in individualistic cultures (Blazer, 2005).

This concept of individualization causing depression seems to be generally accepted and is applied to biological research in depression. According to some biological research, a so-called "depression gene" has been identified (Caspi et al, 2003; Luyten, 2013), and cultural factors are claimed to be the mediator between gene and depression (Way & Lieberman, 2010). This is to say that although the depression gene is more common in people in "collectivistic cultures" than those in "individualistic cultures," depressive symptoms are more easily exposed in Western cultures than in collective cultures. Chiao and Blizinsky (2010) suggest that this is because the collective culture plays a certain role in controlling the explosion of depressive symptoms.

However, if individualism leads to depression and collectivism can be a mediator, it is difficult to explain why there is a population of people with depression in the countries that are seen as collectivist such as Korea, Japan, China, and Taiwan. These figures have risen during recent decades, and the suicide rate is even higher in Eastern cultures than in Western cultures (Liu, 2017). In addition, there are criticisms of the individualism-collectivism dichotomy because it might fall into the danger of cultural essentialism. Cultural essentialism means that "assuming there are some underlying meanings or defining features that imply that social categories are discrete, have intrinsic meaning" (Fischer, 2011 p.769). It divides cultures into a black-or-white separation and might encourage people

to compare the cultures with a good-bad construct (Sinha & Tripathi, 1994, p. 123). Voronov and Singer (2002) also criticized that this dichotomy is not sufficient to explain the complexity of a culture.

Under the influence of globalization, it is hard to hold the position of essentialism. In addition, it needs more evidences to explain the phenomenon that there are many populations with depression in Asia. Nevertheless, localization interestingly gets stronger when together with globalization whereby cultural differences still exist (Voisey & O'Riordan, 2001). For example, Lu and Yang (2005) found that people in Taiwan are still more socially-oriented than individually-oriented in the modern time. She proposed the term 'composite self' to explain Chinese people's self which combines both individually-oriented and socially-oriented selves in modern time. She also found that this composite self is particularly obvious in Taiwan than other Mandarin-speaking areas *(ibid).* Other psychologists have similar opinions based on the empirical studies. For example, Yang (1996), Yang et al (2010) and Lu et al (2008) found that some core values in Chinese culture do not change over time.

It is hard to explain this phenomenon. One possibility is that Taiwan is a place which has consistently been rejected and excluded by most international organizations such as the World Health Organization and the United Nations, and this difficult situation of exclusion might stimulate the development of locality in Taiwan (Voisey & O'Riordan, 2001).

Therefore, individualism/collectivism will still be adopted to identify cultural differences in the modern time in this research, but a more communicative way of addressing the differences between East and West is crucial. The complicated influence of globalization on Taiwanese culture and the formation of individualism/collectivism is unable to be addressed here, which is a limitation of this article.

Recent research attempts to further explore cultural differences based on individualism-collectivism but avoids the default of the dichotomy (Varnum et al, 2010). For example, Gorodnichenko and Roland (2012) found that people in collectivistic cultures tend to think in a more holistic way. They focus on connections and consider the context of situations. Those individualistic

cultures tend to think by separating the elements and take matters in their own hands. According to Gorodnichenko and Roland's study, the two types of cultures differ from each other in ways of thinking. The two cultures are no longer two different distinctive ones which are completely uncommon to each other, but two cultures which have the same concerns, although the way of thinking are different. This perspective makes communication between two types of culture possible. Due to the above consideration, the division of individualism/collectivism will still be used in this article. It is not to say that globalization does not influence the formation of culture; however here we attempt to focus on the differences of the cultures. The role of globalization plays in the changes of the nature of collectivism/individualism can be further researched and discussed in another article.

It is advantageous to use movement as a tool for researching the issues of culture and depression. Everyone has a body, and his/her own unique movements, and the variances of one's body and movement in different cultures will not yield a "black and white" or "good or bad" division. Varying frequencies of the use of movement qualities may illustrate differing characteristics between cultures, rather than producing "yes-no" or "none-all" divisions. In addition, varying movement qualities just mean "different" rather than "good or bad." Although some researchers have noted the connection between culture and movement (Matsumoto, 2006), less research exists that explores the cultural dichotomy from the perspective of movement qualities.

This study

This study attempts to explore how depression has been embodied in women Taiwan from the perspective of the cultural dichotomy of individualism/collectivism. Firstly, it examines the movement characteristics and psychological constructs for Taiwanese women with and without depression. It then compares the results with Western literature, followed by an interpretation of the results from a cultural perspective

9

Methodology

Sample

The data collection was conducted in Taipei, Taiwan. There were two groups. Group 1 contained female patients with depression (from mild to moderate recurrent depressive disorder) who had no other symptoms, such as psychotic symptoms or mania. Group 2 contained female participants without depression. There were 12 women in Group 1 and 12 women in Group 2. Both groups' mean age was 34 years old. The participants in Group 1 were referred by a psychiatrist who holds a clinic in Taipei. For the recruitment of Group 2, the method of snowball sampling (Goodman, 1961) was adopted. Recruitment was via an advertisement on Facebook.

Procedure

Before the groups started, each of the participants signed a letter of consent and completed a repertory grid interview. Each group participated in a group workshop over 12 sessions each lasting for two hours. TBMA, (Payne, 2009) a methodology derived from dance movement psychotherapy (DMP) was adopted as the treatment. Dance movement psychotherapy is an approach which has been found to be beneficial to people with depression (Meekums, Karkou & Nelson, 2015; Pylvänäinen, Muotka & Lappalainen, 2015). TBMA is specifically designed for people in primary care in the UK with medically unexplained symptoms (MUS) who have co-occurring depression and/or anxiety. The two groups were facilitated by the same facilitator external to the research team who had been trained and certified in both DMP and TBMA. She provided the same activities to address the chronic medically unexplained bodily symptoms and session structures in both groups as indicated in the TBMA manual. The two groups were held in a performing arts rehearsal room with a wooden floor, situated in the north of Taipei. One group was held in the morning, and the other was held in the afternoon; therefore, members in the two groups did not meet each other.

Data collection

The repertory grid interview

At the beginning of the study, participants were asked to complete the Taiwanese Depression Scale. For the repertory grid (Kelly, 1955) interview, ten elements were chosen: "me as a mother" (If I were a mother), "me as a wife," "me as a daughter," "me as a woman," "ideal self" (how I would like to be), "how other people would like me to be" (father, mother, and a normal person).

All of the elements listed above were written on flashcards and were presented in groups of three to each participant in the same order. Elements number 1 to 3 were the first group to be presented, and the participant was asked to answer the question: "Could you please find an important way in which two of them are alike and thereby different from the third?" This was to identify the emergent pole of the construct. The participant was then asked to think of the opposite of the emergent pole of the construct, so that the implicit pole was elicited. The element that had been chosen to be the third one, which was different from the other two elements, was removed and substituted by element 4. This procedure was repeated until ten constructs were obtained.

Once the ten constructs were obtained, the participants were then asked to rate each element on a scale of one to seven for each construct. The closer the rating was to one, the closer the element was to the emergent pole of the construct; the closer the rating was to seven, the closer the element was to the implicit pole of the construct.

Movement recording and analysis

Laban Movement Analysis (LMA) (Laban, 1947) is designed to examine movement characteristics. Four categories of movement are examined in LMA: Body, Effort, Space, and Shape. Four qualities are particularly explored in the existing research: coordination, variation, kinesphere, and movement dimension. Coordination responds to Body, variation responds to Effort, and kinesphere and movement dimension respond to Space. Subcategories of the Body element are: isolated movement and coordinated movement. The subcategories of Effort follow Laban's design, and include: time, weight, space, and flow. The category of Space is divided into two categories: kinesphere and dimension. Kinesphere is divided into small, medium, and large, while dimension is divided into vertical, horizontal, and sagittal movements. For Shape, 'modes of shape change' was chosen, in which shape flow, direction, and carving are categorized (see Table 1).

In order to observe and record the movement two cameras were set up at two sides of the room before each group session started. Time-sampling was adopted as the method of collecting movement data (Altmann, 1974). The entire process of the group was videotaped.

The group session lasted for 120 minutes. The first 30 minutes at the beginning and 30 minutes prior to the end of the session were excluded from the movement analysis, as these 60 minutes were most likely spent in verbal sharing. During the remaining 60 minutes of the session, the videotape was analyzed for one minute in every 10 minutes. The researcher chose the minute randomly in the following manner: The numerals 1 to 10 were respectively written on ten sheets, and folded. The researcher picked one sheet and analyzed the minute of the number that had been picked. Consequently, there are six segments of analysis for each participant (Cipolletta, Lin, Payne, and Winter, 2017).

To code and analyse the movement data a dance movement therapist qualified as a Laban Movement Analyst in Taiwan was employed. The coding sheets, video, and a sheet identifying the analyzed minutes were posted to the coder, and she posted the coding sheet and video back to the researcher after she completed the analysis.

The coder watched each segment (one minute) of the video before recording which movement qualities addressed on the coding sheet she found. For example, if she found both vertical and horizontal movements in the first segment, she had to write down "0" and "1" in the column of the "first minute" under the category of dimension in the coding sheet. The total frequency of each number (2, 1, 0) for the two groups was then calculated. In addition, the most frequent movement qualities between both groups were compared.

The most commonly used movement characteristics in Group 1 and Group 2 were also analyzed. This aimed to identify the differences of the characteristics of the movement qualities between the two groups. The total amount and the percentage of each movement quality which had been coded in both groups was calculated. For instance, in the first session, the rater coded only one "yes" when she noticed isolation movements, and the maximum times that a participant can be coded "yes" in terms of isolation movements are four, due to four analyzed minutes in total. Hence, the first rater coded "yes" for isolation movements 39 times in Group 2, and the maximum times the participants can be coded as demonstrating isolation movements are 48 (4 coded minutes $\times$ 12 participants); consequently, the percentage is 81.25% (39÷48) $\times$100.

Add Table 1 Coding sheet for movement analysis here

Results

Repertory grid interview

Two variables with statistical significance correlating to depression were found: the distance between "actual self" and "ideal self" (r=.441, p=.031) and the distance between "ideal self" and "me as a mother," "me as a daughter," and "me as a wife" (r=.419, p=.041). In addition, the correlation between depression and the distance between "actual self" and "me as a mother/daughter/wife" is almost statistically significant (r=.403, p=.051) (see Table 2). This result means that the more the "ideal self" is perceived as being at a distance from the "ideal self," the higher the depression level. In addition, distances of the self from the elements relating to social roles that the individual takes on were also associated with depression. The larger the distance between self and social roles the higher the level of depression.

Add Table 2   Correlations between variables (two-tailed) here

Movement analysis

Only four minutes were randomly chosen and coded. The reason for the decrease of the coded minutes from six to four was that only 40 minutes were spent moving; therefore, only four minutes were coded.

Results (see Table 3) show that members in Group 2 (people without depression) used statistically significantly more strong (t=-4.11, p<.001), sustained (t=-2.64, p=.016), free (t=-2.343, p=.03), and large (t=-2.539, p=.02) movement than those in Group 1; in addition, movement variation (t=-2.11, p=.048) in Group 2 was higher than that in Group 1. Moreover, the participants in Group 2 used statistically significantly more sagittal movement than those in Group 1 (t=-3.843, p<.001). There is no statistically significant difference between the two groups on the remainder of the movement qualities, including coordination, lightness, carving, etc.

The most common three movement qualities between the two groups are shown in Table 4. From this it can be seen that both groups used light movement most often. Apart from light movement,

participants in Group 1 (women with depression) used shape flow and a small kinesphere most often, while participants in Group 2 frequently used direct and sagittal movement.

The discussion of these results appears in the next section.

Add Table 3: The comparison of the movement qualities between Group 1 and 2 here

Add Table 4: The three most commonly used movement qualities in Group 1 and Group 2 here

Discussion

As discussed above, depression is often embodied, and the bodily movement of people with depression can be quite different from the movement of those without depression. This study elucidates those differences. However, some of the results of this study are consistent with existing research conducted in the West whereas others are not. This inconsistency might be regarded as the influence of culture, which will be addressed here.

Consistent with previous research, people with depression in this study show less movement variation (Davis, 1981; Giraud et al, 2016; Stanton-Jones, 1992), less strong and free effort qualities (Stanton-Jones, 1992; Wilkes, Kydd, Sagar, & Broadbent, 2017). Limited use of strong movement might indicate that women with depression possess less self-confidence and exhibit a sense of guilt, which has been identified as a characteristic of depression (Cipolletta, Lin, Payne & Winter, 2017).

In addition, consistent with Stanton-Jones's propositions (1992), people with depression also have a smaller movement kinesphere and used more shape flow movement than those without depression. A small kinesphere, referring to movement close to the body, may represent one's low self-confidence, restraint in social interaction and personal reserve (Amighi, 1999). The use of a small kinesphere is connected to shape flow movement. Shape flow refers to a stream of movement which is self-motivated and can be presented as habitual actions such as biting nails, shivering and shrugging (Konie, 2011). The use of shape flow movement might represent that they were self-conscious and were less willing to interact with other participants (Davis, 1981), which echoes the research that people with depression have limited social interaction with others (Kazdin et al., 1985; Schneider et al., 1990; Troisi & Moles, 1999).

The results of this study which differ from the West studies and previous research are as follows: People without depression used statistically significantly more sustained and sagittal movement than

their counterparts with depression. In consideration of the fact that the p-value for the latter is strong (p<.001), only this result will be discussed.

As mentioned above, the use of vertical movement can be seen as a characteristic differentiating people with depression from those without depression in Western culture (Michalak, Troj, Schulte, and Heidenreich, 2006; Michalak et al, 2009, 2012; Koch et al, 2007). Nevertheless, vertical movement is replaced as sagittal movement in this research.

Sagittal movement develops after vertical movement in human development. Children progress from vertical to sagittal movement around the age of two (Amighi, 1999). While the vertical dimension is more related to the development of a sense of self, the sagittal dimension is more related to the development of self-confidence, and the ability of "go(ing) out into the world and yet return(ing) to find connections with self" (*ibid*, p.122). Therefore, the use of sagittal movement can be seen as a symbolized action attempting to go back and forth between connecting to the world and connecting to self. The decreased use of sagittal movement in the women with depression might reveal their difficulty in connecting to both self and the world i.e. interaction with others.

Vertical movement is associated with self-development, while sagittal movement is more often associated with social connection, and this seems to correspond to individualism and collectivism. In collectivists, social events are more related to depression, while achievement-related events are more related to depression in individualists (Tafarodi & Smith, 2001). This is not to conclude that social connection is not important to individualists or that self-achievement does not matter to collectivists. Research shows that lack of social support and social loss are connected to depression in individualistic culture (Brown & Harris, 1978; Lin & Dean, 1984; Paykel, 1994), while people in collectivism are also eager to pursue self-achievement (Carraher, Buchanan & Puia, 2010; Stankov, 2010). This study seems to echo what Gorodnichenko and Roland proposed about the differences between the two cultures (2012), people in collectivistic cultures tend to focus on connection and the context of

interpersonal situations, while people in individualistic cultures tend to take matters in their own hands and are more focused on self-achievement.

Taiwan is deeply influenced by Confucianism, which is seen as collectivism. Even though globalization has hit Taiwan over recent the decades, collectivistic values still seem to be stronger than those of the individualistic in the modern time (Lu & Yang 2005, Lu et al, 2008, Yang 1996, Tang et al 2010). A possible reason has been addressed above. The typical characteristics of collectivism are: keeping the group harmonious, group values are more appreciated than individual values, and self is interdependent with other members in the group (Triandis, 1996). In a collectivistic culture such as in Taiwan, social relationships are tighter than in individualistic cultures, and personal boundaries are blurry (Fei, 1948). Therefore, maintaining harmonious social relationships while keeping a strong connection to oneself might be a challenging task in a collectivistic culture.

An efficient way for a person in a collectivistic culture to maintain harmonious social relationships is to play his/her social roles "properly" or "correctly"; whether they are being played properly or not depends on whether social expectations are met (Lin, 2016). In Book XII Yen Yuan in Confucian Analects, Confucius said: "Good governing obtains only when all the relative duties are maintained . . . there is government, when the king is with kingship, and the minister is with ministers; when the father is with father-ship, and the son is with son-ship". For a government to run well, everyone must play his/her role properly. Even though it is hundreds of years after the time of Confucius, the expectations regarding playing social roles "properly" are rather rigid in Taiwan, and these social expectations are internalized (Chen & Chung, 1994; Lee, 2003).

Individuals could have two possible reactions to the rigid social expectations in Taiwan. First, playing social roles "properly" to meet social expectations could become more important than meeting self-needs. The exploration of actual self and one's expectation of one's self might not seem that important (Liu, 2017). Individuals might try very hard to meet social expectations regarding social roles. Consequently, their true selves could be intentionally ignored, and their social roles might be

18

quite disparate from their authentic selves. Second, they might remain isolated in their own world and decrease social contact in order to keep social interactions harmonious. These two possible reactions both illustrate the incapability of connecting to one's self and the world spontaneously.

Therefore, the decreased use of sagittal movement by people with depression in this study might reveal this incapability. People with depression in this study exhibited more shape flow and small kinesphere movements, which might illustrate that they felt more isolated, more highly self-aware, and that they stayed in their own world.

Nevertheless, due to all participants in this study having been female, it is also important to consider whether the anxiety and difficulty regarding connecting to both self and the world falls particularly on women. Vulnerable people such as individuals with depression and women are more strictly expected to meet social expectations in Chinese society than in Western society. This can result in people with depression expressing their emotional needs through somatization; and somatization is even more prevalent in women with depression than in men (Kleinman, 1977).

The results of the repertory grid interview in this study echo the results of the movement observation. The distance between social roles and ideal self is positively correlated to depression. In addition, the distance between social roles and actual self is almost statistically significantly correlated to depression. The connection between depression and the distance between social roles and self are not shown in previous studies in personal construct psychology (PCP). For example, Ashworth, Blackburn, and McPherson (1985) indicate that depression is not correlated to roles.

There are similar previous studies indicating the correlation between depression and the distance between self and social roles outside the field of PCP. For example, playing social roles well (Baruch & Barnett, 1986) and experiencing balanced social roles (Marks & MacDermid, 1996) improves wellbeing. In addition, Donahue et al (1993) indicated that the greater the distance between the social roles one experiences, the more depressed one may become. Research on authenticity also shows that being authentic in life is a key to wellbeing (Reinecke & Trepte, 2014; Voronov & Singer, 2002).

Sheldon et al (1997) further point out that psychological authenticity while playing social roles is crucial to mental health. The definition of psychological authenticity is similar to the element in the repertory grid of "actual self." However, the connection between depression and the distance between self and social roles is not particularly indicated in the above studies.

Nevertheless, it is worthy to note that the distance between actual self and ideal self is correlated to depression in this research, a result consistent with research in the West (Winter, 1994). As in Western research, the larger the distance between these two psychological aspects of self, the higher the depression levels and medically unexplained symptoms is generated (Sanders, 1996). People with depression tend to perceive their actual self as distant from their ideal self. This result also shows that people with depression in Taiwan struggle with their psychological selves in a similar way to their counterparts in the West. People in collectivistic cultures still perceive self-development as having importance.

Moreover, it is interesting to note that both movement groups in this study used a light movement quality most often, and this is not found in the researches conducted in the West. In addition, the results showing that participants with depression used less sustained movement than those without depression seems to contrast with the previous results in which people with depression tended to move more slowly (Cipolletta, Lin, Payne, & Winter, 2017). These inconsistent movement qualities might indicate cultural characteristics; however, there is insufficient evidence and very small numbers to make a conclusion. Because all participants in this study were women, further research would be needed to determine whether sex/gender played a significant role in the results.

Conclusion

To conclude, the results of this study generate a reflection responding to the connection between individualism/collectivism, movement, and depression. First, in a collectivistic culture such as Taiwan, social interaction could be experienced as a source of pressure. People in Taiwan do have more social interaction with others than people in Western cultures; however, when social interaction includes

fewer personal boundaries and rather rigid social expectations regarding social roles, the intensive social interaction might result in a high level of social pressure, and depression might be associated.

Hence, the assumption that collectivism reduces depression is questionable. Strong social support is a key to decreasing depression in both collectivistic and individualistic cultures (Kazdin et al, 1985; Schneider et al, 1990; Waxer, 1974). However, while individualistic values might generate isolation and depression in the West, these same individualistic psychological characteristics may potentially decrease depression in Taiwan, as they help individuals to confront social pressures and set personal boundaries regarding playing social roles (Lin, 2016; Rin, 2007).

While vertical movement relating to the sense of self might be more effective in indicating depression in the West, movement in the sagittal dimension relating to social interaction and the pressure of playing social roles might be more effective in indicating depression in Taiwanese women. The issue of playing social roles "properly" appears to be crucial in Taiwan, and women in this culture seem to experience more struggle in the search for self in society than women in Western cultures.

There are three points to be addressed in this conclusion. First, this research shows that universalizing Western research can be dangerous. Even though culture may not have been directly considered in a particular study, it is appropriate to keep in mind that culture still plays a role. Many researchers have reflected on the danger of generalization; they propose that much research chooses to focus on Western participants who are white and highly educated, and these results are then generalized (Chiao & Cheon, 2010). Therefore, not only the researchers, but also the practitioners in therapeutic settings need to be aware that their clients are influenced by their culture, and a corresponding proper adjustment needs to be made.

Second, this research shows the role culture plays in the connection between body and mind. As seen by the previous conclusion, movement, psyche, and the connections between them can perform differently in different cultures. It was found that women in the group with depression in Taiwan

performed less sagittal movement than the women in the group without depression, which might reflect social withdrawal in a collectivistic society in which social interaction is intense and social pressure is high. This differs from Western society, in which people with depression used vertical movement less frequently, and in which the cultural factors of depression tend to exhibit as decreased social interaction and a sense of isolation from society. This might indicate that the development of self is more emphasized in an individualistic society.

Third, exploring the way that culture influences the mind in psychotherapy by observing movement can help researchers avoid the default of essentialism. For example, sagittal and vertical movements were used by all female participants in the research, but sagittal movement was used statistically significantly less by those with depression. From this perspective, individualistic and collectivistic cultures are not completely distinct from each other. Individuals in a collectivistic culture still consider self-value to be important. It can be concluded that women in both types of cultures have concerns about the connection between self and society, but women in a collectivistic culture seem to suffer more pressure when searching for self-identity in society than women in an individualistic culture.

Finally, the results of this study benefit the dance movement psychotherapist in two ways. First, as mentioned above, it is important to be aware that research conducted in the Western world cannot always be generalized to other cultures. Second, this research provides an example that amplifies a possible connection between movement, culture, and mental illness, so therapists can be aware of this connection, particularly for those clients coming from/living in collectivistic cultures. Although most therapists are trained to be aware of cultural differences in the process of therapy sessions, dance movement psychotherapists have less evidence-based references relating to movement to consult regarding the connection between movement and culture (Chang, 2009). Moreover, this research helps the indigenization of dance movement psychotherapy in Taiwan. The localization and

indigenization movement in psychotherapy has been proposed in Taiwan for decades. For dance movement psychotherapy, exploring therapeutic power from local and/or traditional movement-related rituals and activities could be employed more than the adaptation of Western dance therapy theories and techniques. This research provides a reflection of the latter, discussing the adaptations, alterations, and implications to dance movement psychotherapy itself.

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Table 1Coding sheet for movement analysis

Number of the participant:			1st min	2nd min	3rd	4th	Total	Total
Shape		Carving None (0) Yes (1)					(0): (1):	
		Directional None (0) Arc-like(1) Spoke-like (2)					(0): (1): (2):	(0): (1): (2):
		Shape flow None (0) Yes (1)					(0): (1):	
Space		Dimension Vertical (0) Horizontal (1) Sagittal (2)					(0): (1): (2):	(0): (1): (2):
		Kinesphere Small (0) Large (1) far reach (2)					(0): (1): (2):	
Effort		Flow Neutral (0) Bound (1) Free (2)					(0): (1): (2):	(0): (1): (2):
		Space Neutral (0) Direct (1) Flexible (2)					(0): (1): (2):	
		Weight Neutral (0) Strong (1) Light (2)					(0): (1): (2):	
		Time Neutral (0) Sudden (1) Sustain (2)					(0): (1): (2):	
Body		Body usage Isolations (0) Whole body-coordinated movement (1)					(0): (1):	(0): (1): (2):

Table 2   Correlations between variables (two-tailed)

Depression	Actual and ideal self	Actual self and roles	Actual self and me as woman	Actual self and others	Actual self and mother
	r=.441 p=.031*$_a$	r=.403 p=.051	r=.299 p=.155	r=.330 p=.127	r=.362 p=.090
Depression	Actual self and a normal person	Ideal self and roles	Others and roles	Ideal self and others	Actual self and father
	r=-.143 p=.505	r=.419 p=.041*	r=.325 p=.122	r=.361 p=.083	r=.369 p=.083

NOTE: a. Statistical significance: *p < .05

b. "Roles" refers to the three elements: "me as a mother/daughter/wife"

c. "Others" refers to the element: "how other people see me"

33

Table 3: The comparison of the movement qualities between Group 1 and 2

Movement categories			Group 1(N=11)	Group 2 (N=12)	t-test (2-tailed)
Body	Isolation		m=3.273, SD=1.191	m=3.250, SD=1.055	t=.049, p=.962
	Whole coordination		m=1.182, SD=1.328	m=1.417, SD=1.240	t=-.439, p=.666
Effort	Time	Neutral	m=2.364, SD=.809	m=2.167, SD=1.467	t=.393, p=.698
		Sudden	m=2.364, SD=1.362	m=2.25, SD=1.288	t=.206, p=.84
		Sustained	m=1.909, SD=1.136	m=3.083, SD=.996	t=-2.64, p=.016*
	Weight	Neutral	m=.364, SD=.674	m=.083, SD=.289	t=1.317, p=.202
		Strong	m=.727, SD=.905	m=2.083, SD=.669	t=-4.11, p<.001**
		Light	m=3.818, SD=.603	m=4.00, SD=.000	t=-1.047, p=.306
	Space	Neutral	m=.091, SD=.302	m=.417, SD=.669	t=-1.482, p=.154
		Direct	m=3.364, SD=.674	m=3.667, SD=.651	t=-1.096, p=.286
		Flexible	m=1.909, SD=1.136	m=2.000, SD=.739	t=-.230, p=.822
	Flow	Neutral	m=.546, SD=.934	m=.250, SD=.622	t=.900, p=.378
		Bound	m=3.00, SD=1.265	m=2.417, SD=1.730	t=.916, p=.371
		Free	m=2.546, SD=1.293	m=3.583, SD=.793	t=-2.343, p=.030*
Space	Kinesphere	Small	m=3.364, SD=1.027	m=2.917, SD=1.311	t=.904, p=.376
		Large	m=1.818, SD=1.168	m=2.917, SD=.900	t=-2.539, p=.020*
		Far reach	m=2.091, SD=.831	m=2.583, SD=.793	t=-1.454, p=.61
	Dimension	Vertical	m=2.728, SD=1.104	m=2.583, SD=.996	t=.329, p=.746
		Horizontal	m=2.455, SD=1.368	m=2.583, SD=1.311	t=1.230, p=.820
		Sagittal	m=3.000, SD=.632	m=3.833, SD=.389	t=-3.843, p<.001**
Shape	Shape flow		m=3.455, SD=.688	t=3.333, SD=.888	t=.364, p=.720
	Directional	Arc-like	m=2.636, SD=1.120	m=2.417, SD=.900	t=.521, p=.608
		Spoke-like	m=2.091, SD=1.136	m=3.000, SD=1.128	t=-1.924, p=.068
	Carving		m=.182, SD=.405	m=.333, SD=.492	t=-.802, p=.432
Movement variation			m=53.42, SD=9.773	m=60.504, SD=6.08	t=-2.11, p=.048*

NOTE: a. t-test, two-tailed.

b. a. Statistical significance: *<.05, ** <.001

Table
4: The three most commonly used movement qualities in Group 1 and Group 2

frequency	Assessment		
	First	Second	Third
Group 1 depression	Light (95.5%)	Shape flow (86.4%)	Small kines. (84.1%)
Group 2 no depression	Light (100%)	Sagittal (95.8%)	Direct (91.7%)

35

Appendix 1: Taiwanese depression scale (English and Chinese versions)

		Rarely 0	Sometimes 1	Often 2	Always 3
1	Tendency to commit suicide				
2	Disinterested in everything				
3	Thinking negatively				
4	Feeling guilty				
5	Feeling useless				
6	Feeling unable to achieve anything				
7	Feeling pressure				
8	Bad tempered				
9	Worried and/or disturbed				
10	Fear and/or scared				
11	Wanting to cry				
12	Feeling low				
13	No appetite or eating too much				
14	Not sleeping well				
15	Physically tired				
16	Unable to concentrate				
17	Feeling unwell				
18	Forgetful				
19	Socially inactive				
20	Do not feel like talking				
21	Preferring to stay indoors				
22	Having few friends				

		很少如此	偶而如此	經常如此	總是如此
1	有自殺的念頭				
2	對甚麼事都失去興趣				
3	凡是往壞的方向想				
4	有罪惡感				
5	覺得自己很沒用				
6	無力感				
7	有壓力				
8	發脾氣、生氣				
9	擔心、煩惱				
10	害怕、恐懼				
11	想哭				
12	心情低落				
13	胃口不好(或暴飲暴食)				
14	睡眠狀況不佳				
15	身體疲憊				
16	無法專心做事				
17	身體不舒服				
18	記憶力不好				
19	不想與他人往來				
20	少說話(或不太愛說話)				
21	不想出門				
22	生活圈小				