

# ***Medical Application of Multi-Species Ethnography-- An Example of Empirical Evidence on the Effectiveness of Equine Therapy for Depression***

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**Abstract:** The reality of effective but scientifically ineffective equine treatment of depression is a concrete reality since biomedicine, which upholds scientific thinking in the medical field, is stuck in a dilemma for the treatment of psychiatric diseases. The emergence of multispecies ethnography brings a new way of thinking that originates from cultural thinking to help the medical field out of the dilemma. Using literature and textual analysis, this paper investigates the possibility of applying multispecies ethnography to the medical field by using multispecies ethnography to further demonstrate the effectiveness of equine therapy for depression. The study has shown that multispecies ethnography can be well applied to the field of medicine, introducing a multispecies way of thinking to the medical field. It also provides cultural evidence for the treatment of diseases and calls for the return of a primitive "integrated view of life" in the medical field, breaking the boundaries of thinking about life through scientific thinking.

## **1. The Emergence of Multispecies Ethnography**

The issue of global ecological crisis has attracted the attention of scholars in many different fields, and the emergence of multispecies ethnography is the anthropological response to the global ecological crisis [1]. Anthropology is keen on exploring the relationship between culture and nature, constantly exploring the boundary between culture and nature, and always keeping attention to the hot topics in daily life. In the context of frequent global ecological crises, these characteristics of anthropology have contributed to the rise of multispecies ethnography, and Eduardo Kohn has proposed an "anthropology of life[2]" reminding anthropologists to expand their research horizons to include life. Anthropological research should not only be limited to humans alone, but pay attention to other living organisms and their entangled relationships with each other. The writing of multispecies ethnography is the concrete practice of this idea. Ethnography in many species of animals, plants, microorganisms have become a hero like humans possess the same status and

weight, it provides people with a look at the world, a more broad perspective, to the world stage the baptism of a decentralized. In the new stage, human beings are no longer "leading dancers", but have been intertwined with other species for the "dance". Multi-species ethnography produces situated knowledge by caring for the "contact zone" between multiple species and "situated knowledge [1, 3] "by means of "untying", "tracing" and "laying out". In this "situated knowledge" we can see how human microbes work with people to maintain "common health" [4], and the extent to which the migration of sandhill cranes affects the fate of people. Multispecies ethnography breaks the human disdain for nature, and is a method and tool to explore the interaction and culture among multiple species. Currently, it is mainly applied to Zoonotic diseases; Veterinary anthropology; Agriculture and Food production. The four research fields of animal therapy help people rethink the relationship between humans and non-human species and explore the possibility of "transboundary symbiosis" on the scarred Earth [3].

## **2. The Biomedical Approach to Depression is in Trouble**

"Scientific thinking" and "cultural thinking" are two important ways of thinking about human life and the world. However, with the development of the times, there is a growing tension between these two types of thinking, that is, splitting and opposing, which is very obvious in the medical field. In this field, biomedical science with scientific thinking has an absolute say, while cultural thinking is often absent. In the diagnosis and treatment of diseases, biomedicine is usually in the form of data and discount graphs to determine whether a person has a disease or whether a treatment is effective. However, as society evolves, it is found that the mechanical, traditional, and simple view of disease in biomedicine exposes increasingly problems. Disease is a multidimensional problem involving biology, psychology, and society. Mental diseases not only show the symptoms of physical symptoms but show serious social diseases such as disorder of social relations. However, biomedicine is difficult to diagnose and treat these social diseases in patients. The lack of cultural thinking has made the medical field focus on the disease itself, but it is easy to ignore the living people and stories behind the disease, which also makes the diagnosis and treatment of many diseases, especially mental diseases, into a dilemma. Depression (MDD) is a kind of mental disease that causes serious harm to human beings. It destroys patients' psychology and body at the same time, and brings great pain to patients, but also causes serious burden to the family and society. What we commonly call "depression" comes from the definition given by psychiatry and is typically a symptom or phenomenological diagnosis. In order to facilitate the communication of medical scientists, this kind of mental state, that is, in low mood for a long time, decreased interest, reduced activity, and even negative suicidal thoughts and behaviors, is collectively referred to as depression. In the field of biomedicine, all similar diagnoses are unscientific. At present, the most widely used means for depression treatment are medication and psychotherapy. However, medication will cause great damage to the patient's body. Psychotherapy will bring certain psychological pressure to the patient, which is easy to make the patient feel inferior. From the biomedical perspective, both the pathogenesis and the inducing factors of depression are heterogeneous and complex, which is a mystery that makes people feel afraid, unexplored, and difficult to deal with. Therefore, the diagnosis and treatment of depression in biomedicine is in a dilemma.

## **3. Research on the Medical Application of Multispecies Ethnography**

As mentioned above, biomedicine is helpless in the diagnosis and treatment of depression, but people never stop exploring depression treatment methods, and in the continuous exploration, new methods of treating depression, equine therapy by integrating exercise and animal-assisted therapy

are gradually promoted and welcomed by people. Both in myths and legends and in the network we can see people riding in the treatment of depression in the texts of the effectiveness of recognition and affirmation. However, there is still a lack of sufficient scientific evidence to prove its effectiveness from a biomedical perspective, which is the real-life limitation of applying purely scientific thinking in the medical field. As an effective tool to explore interspecies relationships and cultures, multispecies ethnography may provide a new way of thinking based on cultural thinking to prove the effectiveness of equestrian treatment for depression.

### 3.1 Practical Effectiveness and Scientific Ineffectiveness of Equestrian Therapy

The origins of equine therapy can be traced back to Greek mythology, where Aesculapius, the god of healing, placed incurable diseases on horseback for spiritual comfort. There is also a legend in Greece that horses were used to rehabilitate wounded soldiers. Equestrian therapy has been documented since 600 B. C. Hippocrates, the father of Greek medicine, spoke highly of the practice in 400 B. C. It was popularized in Germany, France, and Italy between the 15th and 19th centuries. The modern use of equestrian therapy dates to the 1950s, when Liz Hartel, partially paralyzed by polio, won a silver medal in dressage at the 1952 Olympics in Helsinki, Finland, competing against other healthy athletes [5]. After Liz Hartel's story shocked the world, a campaign was launched in the UK to promote "horse riding to cure the disease"[6]. Later, from the 1960s to the 1990s, equestrian therapy spread to Europe, North America, Australia, and New Zealand, where it became increasingly popular, and its practical effectiveness was also increasingly recognized by people.

The history of scientific research on equestrian therapy is a process of continuous attempts to apply equestrian therapy to various diseases and to prove its effectiveness. As early as 1997, Heine found that equestrian therapy could be used for the intervention of neuromuscular diseases [7]. In 2002, Starke developed a complex test system to check balance ability and applied it to patients in neurological rehabilitation centers to test the effectiveness of equestrian therapy. In 2005, Liptak proposed the idea of equestrian therapy as a complementary and alternative therapy for cerebral palsy[8]. Since 2007, the intervention research on equestrian treatment has gradually expanded to more diseases, such as spinal cord injury, cerebral palsy, down syndrome, etc [9-11]. In 2010, in order to promote and apply equestrian therapy, better, researchers began to design and study therapeutic mechanical horses and simulators[12]. The 2011 study by Cerino brought equestrian therapy into the field of mental illness [13]. The 2012 study by Borion focused on the effects of equestrian therapy on the psychological and social performance of adults with intellectual disabilities [14]. Since 2013, since 2013, there has been a relatively stable research trend in equine therapy. Scholars have paid attention to the intervention of equestrian therapy on the morbidities of special populations such as adolescents [15, 16], the elderly [17, 18], and the treatment effect on common diseases such as attention deficit [19], cerebral palsy [20], autism [21], and physical function defects [22]. And constantly carry on the development and improvement of equestrian therapy simulator [23, 24]. Up to now, a large number of literature has been published on the therapeutic role of horsemanship in human medicine, which has designed different scientific experiments to provide evidence that animal-assisted therapy including horsemanship therapy can help people in different environments, but the sample sizes remains small in the experimental process. Lack of randomization or control group (or insufficient), selection bias, poor generalization, and other obvious defects, the results of different researchers also differ, because some external factors (such as other therapies) may have changed the results during the experiment [25, 26]. In the process of experimental design, many problems are difficult to solve. For example, we can't stop the subjects from other treatments in order to prove the effectiveness of equestrian treatment for depression. Although the practical therapeutic effects of equestrian therapy are recognized, there is

insufficient scientific evidence to conclude that it is scientifically effective [27].

### 3.2 A Multi-Species Ethnographic Empirical Study on the Effectiveness of Equestrian Treatment for Depression

Few more species ethnographies are now being applied to specific practices in the medical field, however, there are many written accounts of equine therapy for depression on the internet, with texts describing equine therapy for depression and describing the stories of many patients who have fought depression through equine therapy, and this paper is a rendering of a microscopic scenario for human-horse interaction. The author collected these texts, regarded them as multispecies ethnography records on equestrian treatment of depression in a certain sense, and processed and analyzed them to explore the possibility of using multispecies ethnography to demonstrate the effectiveness of equestrian treatment for depression.

#### 3.2.1 Word Cloud Analysis of Multi-Species Ethnography on Equestrian Treatment of Depression

Table 1: Select multispecies ethnographic text details table

number	title	source	author	release time
1	Suffer from anxiety and depression? Horse therapy can help	China News	Not specified	Jul 14, 2016
2	Horseback riding increases the levels of happiness hormones, which can help with depression and mania	Jinri Toutiao	Qi Qixingshan Horse Farm in Shenyang	Apr 2, 2020
3	The Benefits of Riding -- All "healing" that riding brings	Equestrian online	admin2	Apr 28, 2020
4	Low confidence, anxiety, depression? Animals can help you heal	China News	Xingjing	Sept 9, 2019
5	How does riding achieve rehabilitation and psychotherapy	Tencent news	Equestrian online	Mar 1, 2020
6	Are you anxious? Irritability? Get on a horse and forget about time. Riding can cure your anxiety	Sohu News	Equestrian workshop	Aug 29, 2019
7	Mexico recovers from earthquake trauma through equestrian psychotherapy	Xinhua	Not specified	Nov 27, 2017
8	How does a horse become a doctor for humans? Horse healing helps you get rid of depression	Sina sports	Equestrian Micro College	Feb 26, 2016
9	There is no depression that can't be solved by riding a horse. If there is, keep riding!	Sina sports	Martin	Apr 12, 2019
10	Riding on horseback cured my depression	Zhihu	Daniel	Jul 6, 2019
11	It was the drugs, the daughter or horsemanship that cured my depression	Sohu News	Laoshen	Sept 21, 2016
12	You can learn how to deal with depression from "Riding Skills"	Baidu baijiahao	Psychology of alpha	Sept 26, 2019
13	Horse riding, or horse ownership, can treat autism (part), depression (part).	Sohu News	Hangzhou Youth Honghua Society	Jul 9, 2017

In the era of big data, the Internet has become an important channel for information transmission, which brings convenience for people to obtain information, which enables us to collect more information about equestrian treatment of depression. Word cloud is a technology that uses linguistic analysis technology to analyze the word frequency of big data and generate visual images

[28], which can help us obtain effective information faster in the era of big data. There is a lot of information about equestrian treatment for depression on the Internet, and the word cloud tool is conducive to combing and analyzing this information. The author first collected relevant information about equestrian treatment of depression from the whole Internet and selected 13 relevant texts (see Table 1) after screening as the original samples of multispecies ethnography for the study.

After the original samples are exported and further processed (removing irrelevant information such as advertisements and website information), the original text data is obtained, and then the professional word cloud is generated using the tool "micro Word cloud" to process the original data, to obtain a series of word cloud map and word frequency tables. Since the purpose of the analysis is to explore the effectiveness of equestrian treatment for depression, the nouns, verbs, and adjectives in the text are selected for analysis.

The noun is processed separately to generate the noun word frequency cloud diagram (Figure 1) and the noun word frequency Table 2.



Figure 1: Noun frequency cloud image

Table 2: Table of noun frequencies

Number	Word	Frequency
1	Equestrian	60
2	Riding	39
3	Animal	19
4	Psychology	18
5	Emotion	18
6	Therapy	15
7	Method	15
8	Problem	13
9	Psychological treatment	12
10	Infantile autism	12

From the noun word frequency cloud diagram, we can see that "equestrian", "riding", "animal", "psychological", "emotional" and other words are clearly prominent. The text analyzes more varieties related to equine therapy for depression, and the ethnographic text focuses on the good effects of equine therapy on human spirit and emotions, and is an explanation of how equestrian sports can be a therapeutic tool, with a corresponding introduction to the practice of equine therapy applied to psychotherapy and autism treatment.

Verbs were processed separately to generate a verb word frequency cloud map (Figure 2) and a verb word frequency Table 3.



Figure 2: Verb frequency cloud diagram

Table 3: Verb frequency list

Number	Word	Frequency
1	Treat	40
2	Promote	18
3	Need	16
4	No	14
5	Can	12
6	Get rid of	12
7	Intervene	11
8	Reach	10
9	Know	12
10	Cure	10

From the verb frequency cloud diagram, we can see the obvious prominent words, such as "treat", "promote", "need", "no" and "can". Textual analysis of equestrian treating depression related species ethnographic text mainly introduced the equine therapy "treatment" for several aspects that are depression "intervention", meet a variety of "needs" of the patient, also made a lot of "no" before, now "to" contrast argument, the paper also mentioned many times for the equestrian sure effectiveness of the treatment of depression.

The adjective word frequency cloud diagram (Figure 3) and adjective word frequency table 4 were generated by separate processing of adjectives.



Figure 3: Adjective word frequency cloud diagram

From the adjective word frequency cloud diagram, we can see the obvious prominent words such as "depressed", "anxious", "different", "manic" and "happy". Combined with the original analysis, the relevant multispecies ethnographic texts on equestrian treatment of depression show the "difference" of patients before and after equestrian treatment, from "depression", "anxiety" and "mania" to "happy" and "healthy".

Table 4: Adjective word frequency list

Number	Word	Frequency
1	Depressed	32
2	Anxious	17
3	Different	13
4	Manic	12
5	Happy	12
6	Nervous	8
7	Easy	8
8	Healthy	7
9	Important	6
10	Annoyed	5

After processing and analyzing nouns, verbs, and adjectives in the text, the data are summarized and analyzed, regardless of the part of the speech, and the summary word frequency cloud map (Figure 4) and summary word frequency Table 5 are obtained.

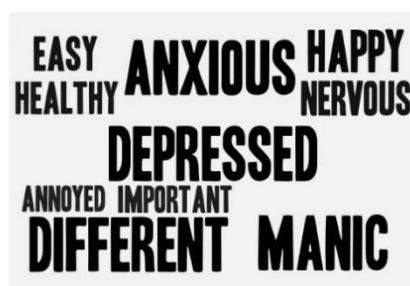


Figure 4: Summary word frequency cloud diagram

Table 5: Summary word frequency list

Number	Word	Part of speech	Frequency
1	Equestrian	Noun	60
2	Treat	Verb	40
3	Riding	Noun	39
4	Depressed	Adj.	32
5	Animal	Noun	19
6	Psychology	Noun	18
7	Emotion	Noun	18
8	Promote	Verb	18
9	Anxious	Adj.	17
10	Need	Verb	16

From the summary word frequency cloud map, it can be seen that "equestrian", "treatment", "horse riding", "depression" and "animal" are clearly prominent. The web text related to equine therapy for depression reads that during equine therapy, patients feel close to "animals" in the practice of riding, satisfying various "needs", eliminating many negative "emotions", relieving or curing the symptoms of depression, and "elevating" physical and mental health.

### 3.2.2 Text Analysis of Multispecies Ethnography on Equestrian Treatment of Depression

By 2017, 24 countries around the world had participated in the development of equestrian treatment. As early as 1975, China established the first equestrian treatment center in Asia -- Hong Kong Injury Health Riding Association Co. LTD. To this day, equestrian treatment has been increasingly recognized in our country, and has been promoted and applied in the form of public welfare activities. "Under the Same Blue Sky" equestrian rehabilitation, public welfare activity for disabled children has been successfully held for many years. In 2021, this activity was held in Wenjiang District, Chengdu City on October 14. A total of 20 students from Wenjiang District Special Education school participated in this equestrian rehabilitation course. The whole course lasted for more than three months, with a total of 13 periods. The Chengdu Equestrian Rehabilitation Association for the Disabled, the co-organizer of the event, followed the children's participation in equestrian therapy in the form of text and images on its official WeChat account.

In the first course, the official account recorded such a passage:

In this course, many children are the first time to contact the horse, from the beginning of the timid fear to the final reluctance to dismount ..... some of the recipients, who had attended equestrian rehabilitation courses organized by the association before the outbreak, were particularly confident. Parents of children who attended the course for the first time expressed excitedly that they would like to let their children participate in the equestrian course more in the future to cultivate and exercise their children's comprehensive ability.

In the short text, we can see some children in equestrian treatment in a rehabilitation program for the horse attitude from "afraid" to "do not want to leave", see have been involved during children's "confidence" in particular, as well as seeing child and parents participating in the equestrian treatment process for the equestrian treatment effect.

In the notes of the third class, a particular description is given by a child who named Nono:

Before class, waiting for the rain kept shouting and her mother-in-law said that today child mood is not very good, thinking that she could not in class today, in the rain can sit on a horse by the moment, just like in a child she calmed down, and started murmuring in a low voice talking to the horse, glad it up at once and have been reluctant to dismount from class.

This transcript documents the horse's emotional comfort to the child during equestrian therapy. The horse seems to have magic to pull away the child's negative emotions, talking to the child in a low voice like a friend. The content of their conversation is a secret no one knows, except that the child "suddenly brightened up. "

In the record of the fifth session, a girl named Yanyan stands out:

Yan Yan is a quiet obedient girl all time, but she has autism almost difficult to express her joy. In the past, she would complete the contents of the loading rack under the guidance of the trainer. She was not afraid of the horse, but she was rarely seen getting overly excited. During this session, she performed some basic horseback balancing exercises, as demonstrated by the instructor, and did so well that she smiled and even cheered softly.

For the record, we can see a girl who is suffering from autism treatment during the breakthrough, "smile" and "cheers" for a child with autism is isolated from the world by the iron door to open a small gap of light, although small, but very precious.

At the end of the course, the relevant person in charge of the event organizer said:

Equestrian sports not only improve the special children's sense of balance, build muscle strength, but also improve their coordination of limbs. The 13 times of equestrian rehabilitation courses helped the special children overcome their fear of animals, enhanced their perception and love for animals, and helped them maintain higher concentration.

The presentation by the event director formally recognized the effectiveness of equine therapy



and the beneficial physical and psychological interventions that it brings to patients. The multispecies ethnographic text depicts the microscenes of multiple disabled children interacting with horses in a practice course of equestrian therapy, and records in detail the changes of children's "mood improvement", "confidence improvement", "smile unfolding" and so on. It also records the recognition of parents and officials on the effectiveness of equestrian therapy.

### **3.2.3 Multi-Species Ethnographic Evidence of the Effectiveness of Equestrian Treatment for Depression**

One of the typical social symptoms of depression is that the person may perceive themselves as a burden on society, a useless presence in society and thus may eventually cut off their ties to society by committing suicide. In the practice of equestrian therapy, the physical and emotional connection between human and horse is entangled, and the human-horse relationship is a part of the overall social network of human beings. The benefits achieved in the interaction between human and horse can be brought to human beings through the human-horse relationship. The joy and happiness generated by the interaction between children and horses in equestrian therapy courses can be transferred to the relationship between children and equestrian coaches, between children and parents, and even to the deeper depths of children's social networks, which can regulate the disturbed social relationships of depressed patients. As shown by many species of ethnography of word and text analysis can be seen that many species ethnography can be generated for these in the benefits of relationships - the horse and its transmission scenario to capture, record and analysis, to prove the equestrian culture basis was provided for the effectiveness of the treatment of depression, perhaps more species ethnography can record information and provide basis for is limited. However, if a certain amount of accumulation is achieved, a large information base will be formed, condensing into a strong cultural evidence chain, which can demonstrate the effectiveness of equestrian treatment of depression.

## **4. The Medical Application Value of Multi-Species Ethnography**

### **4.1 Introducing a Multi-Species Way of Thinking to Medicine**

In the multispecies ethnography, a new image of human is emerging. In fact, humans were previously seen as a mixture of human and microorganisms, fungi, viruses, and other species, and human growth itself is a process of multispecies effort [29]. Ethnographic present people with more species of microbes inside and outside of the animal body partners is how to implement "common health" efforts to fight diseases of vivid scene, it had to force people to have a way of thinking about more species to rethink many problems in the field of medicine, but also for many sedimentary brings new ideas on the solution of the problems. It is in this multispecies mindset that "interspecific relationship" becomes a key unit of analysis and is included in the scope of investigation in the medical field [30], making it possible to explore the effectiveness of empirical equestrian treatment of depression from the perspective of human-horse relationships when the diagnosis and treatment of depression in biomedicine is in difficulties.

### **4.2 To Provide a Cultural Basis for Disease Diagnosis and Treatment**

Disease is a complex problem involving physiological, psychological, social, and other aspects, which also determines that the response to the disease must be a multisided effort. The scientific diagnosis and treatment of diseases in biomedicine provides a scientific guarantee for people's health, but this is clearly not enough. The social symptoms of diseases need to be examined from

the perspective of society and culture, and cultural methods should be used to deal with them. Unlike biomedicine, which observes the rise or fall of an indicator, multispecies ethnography provides a cultural basis for the diagnosis and treatment of diseases by presenting a specific situation in a specific context. The recording and interpretation of a multispecies ethnography may be scattered and fragmented, but once a sufficient amount of accumulation is achieved, all scene fragments will converge into a cultural base to make up for the shortcomings and gaps in scientific diagnosis.

### 4.3 It Calls for the Return of "Comprehensive View of Life" in the Medical Field

When using scientific thinking to think about life, classification and systematization will be used, and everything will be divided into different fields, "but primitive people's view of life is comprehensive, not analytical" [31]. The primitive people saw the world in a "comprehensive view of life" : life was not categorized, but was a continuous whole, with no particular distinction between different domains of life[32]. Primitive man, perhaps in some ways more "intelligent" than modern man, had already begun to write multispecies ethnography in the process of worshiping animal totems or painting his animal deities. The application of multispecies ethnography in the field of medicine calls for the return of a primitive man's "comprehensive view of life" to break the shackles of using scientific thinking to think about life[33].

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