

Pain-describing Words and Linguistic Representation of Pain Experience

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ABSTRACT. The present paper is an interpretative research on Chinese “pain language”. The paper selects Chinese pain-describing words, analyzes their lexical characters, explains their role in pain expression as well as the way by which the “pain language” is used to express users’ experience and perception of pain. In the end, it stresses the necessity of medical linguistic research, including this research on the “pain language”, from a doctor-patient dialogue perspective.

Keywords: pain-describing words; pain-experience, pain language; medical linguistics; doctor-patient dialogue

1. Introduction. Pain is one of the most common human experiences. Medically, pain is a physiological and psychological reaction which is both objective and subjective. The IASP (International Association for the Study of Pain) defines pain as an uncomfortable sensory and emotional experience which is associated with actual or potential body organ injury [1]. Medico Psychology defines it as an individual feeling or experience which is generated by the interaction between real stimulation and stored experience [2]. Therefore, pain feeling is a physical and psychological experience. In daily life (especially in physician-patient dialogues), pain is a common topic. Communication centering pain experience generates pain language.

Pain language includes two parts: one is instant linguistic reactions to pain experience which include crying and groan (“啊[a] (ah)”, “哎哟[ai yo] (ow)”, “ouch”, etc.), and interjections triggered by pain (“我的妈呀[wo de ma ya] (oh my mother)”, “我的天呀[wo

de tian ya] (oh my god)", "Jesus", "damn it", etc.). The above are pure emotional expressions which mainly represent individual feelings. The other part is the descriptive language of pain experience, which is more rational. It is the main body of pain language and plays a major role in pain-related conversation and physician-patient dialogues. Therefore, it is the focus of this research.

This research involves selection of Chinese pain-describing words and analysis of their lexical characters, which leads to the further explanation of pain-describing words' role in pain expression as well as the way by which the "pain language" is used to express users' experience and perception of pain.

2. Literature Review. Many linguists have studied Pain expressions and pain language. Halliday (1998) regarded pain as an important human experience area, and it is only through language that pain experience gains meaning. In his view, language classifies pain experience as processes, participants and natures. In Halliday's research framework, pain recognition has three linguistic representations: the process embodies itself by verb phrase in clauses; participants are expressed by nouns and the environment is represented by adverbs or prepositional phrases; natures are often expressed in adjective phrases [3]. Lascaratou (2007) learned from Halliday's research framework. Through a self-established Greek pain language corpus, he described and analyzed pain expressions' linguistic features, especially the metaphors as well as cognition mechanisms generated by the grammaticalization of "pain" [4]. Halliday and Lascaratou explored pain expression grammar-vocabulary system by studying the linguistic structure of pain experience. In the end, they demonstrated the complicated relations among language, thinking, experience and individual.¹

Chinese researches of pain language mainly focus on literature review, corpus study, term standardization, and translation [1, 5-8]. Wang ling and her team conducted investigative research on Chinese pain-describing words with Linguistic data from medical workers. With the guideline of professional testing method (VAS pain measuring method), researchers of Wang Ling's team designed Questionnaires and handed them out to the Han people in Beijing. Researchers analyzed the linguistic data under terminology theory. They received 472 pain-describing or pain-relating words from 507 questionnaires, and the result was well sorted according to lexical meanings as well as answering sequence. The research conducted by Wang Ling and her team is medically and linguistically significant. The pain-describing word list derived from their research are valuable corpus, and thus serves as an important reference corpus of the present research.

Currently, domestic explanative researches on pain language are quite limited to fields like perception words, feeling words, emotion expressions. In Mou Yunfeng's (2005) research on the semantic development of adjective words relating to feeling expression, he, found that words like "ache" and "pain", which belong to cutaneous sensation, after development can be used in emotion relating expressions and other ways. This proves

¹ Sun Ju (2009) made comprehensive review on the pain language research of Halliday and Lascaratou.

perceptive projection phenomenon in lexical meanings [9].

3. Pain-describing words and their features

3.1. Pain-describing words and abstraction. Pain language developed various ways to meet its expression demand, which can be discussed on multiple levels like pronunciation, grammar, vocabulary, pragmatics, and rhetoric. In this research, we will focus on vocabulary.

According to Wang Ling's research, there are 472 words that can describe or relate with pain. The 472 words fall into four categories: “words describing the nature of pain” (like “刺痛[ci tong] (stabbing pain)”, “胀痛[zhang tong] (swelling pain)”, etc.), “words describing the intensity of pain” (like “剧痛[ju tong] (sharp pain)”, “不疼[bu teng] (not painful)”, etc.), “words describing emotional reaction and judgments” (like “痛不欲生[tong bu yu sheng] (too pain to live with)”, “不舒服[bu shu fu] (not feeling well)”, etc.), “other words relating to pain” (like “头晕[tou yun] (dizzy)”, “呲牙咧嘴[ci ya lie zui] (grimace in pain)”, “弥漫的[mi man de] (permeating)”). Among them, “words describing the nature of pain” describe pain characters and play the core part. Semantically, they can also be divided into 38 small groups. Words describing the nature of pain are our research object, and they can also be called as “pain-describing words”.

Pain-describing words are words that describe natures and characters of pain. They are rational expressions of pain bears subjective feelings. Based on relevant studies, we have summarized more than 230 pain-describing words.²

3.2. Structure and semantic features of pain-describing words. Pain-describing words are not technically “words”. Most of them are word groups or phrases. They are in a structure of “pain nature/ character+ ‘痛[tong](pain)’”, like “刺痛[ci tong] (stabbing pain)”, “钻心痛[zuan xin tong] (cardiac pain)”, “冷痛[leng tong] (cold pain)”, “脉冲样痛[mai chong yang tong] (impulsive pain)” etc. This structure is easy to be understood and developed.

“Pain nature and character” constitutes the main body of pain description, playing a leading part in meaning expressions. Therefore, in order to analyze the semantic character of pain-describing words, we need to focus on this part. In this research, we isolated this part of the structure and found those pain-describing words mainly come from:

- ✧ Nouns indicate objects: for example: 刀[dao] (knife), 针[zhen] (needle), 锥[zhui] (cone), 电[dian] (electric), 火[huo] (fire), 雷[lei] (thunder), 石[shi] (stone), 蚊[wen] (mosquito), 虫[chong] (insect), 气[qi] (chi);
- ✧ Verbs indicate actions: for example: 刺[ci] (stab), 压[ya] (press), 挤[ji] (squeeze), 撑[cheng] (near to the point of bursting), 胀[zhang] (inflating), 肿[zhong] (swelling), 绞[jiao] (twisting), 揪[jiu] (hold tight), 拧[ning] (wring), 掐[qia] (pinch), 跳[tiao] (jump);

² The selection of “pain describing vocabulary” also referenced relevant researches of Yu Peng (2004) and Yu Weizhong (2010). See [7, 8] for details.

◇ Adjectives indicate states: for example: 干[gan] (dry), 僵[jiang] (stiff), 硬[ying] (hard), 冷[leng] (cold), 热[re] (hot).

Among the three categories, verbs are the most representative. Verbs and nouns, as well as adjectives make up verb-object construction (like “触电[chu dian] (get electric shock)”, “钻心[zuan xin] (cardiac pain)”), verb-complement structure (like “撕裂[si lie] (tear apart)”, “胀满[zhang man] (turgor)”), and attribute-center structure and derive much more abundant descriptions listed as following table:

TABLE 1. THE CLASSIFICATION OF PAIN-DESCRIBING WORDS

<i>Class</i>	<i>Examples</i>
Verbs	刺[ci] (stab), 压[ya] (press), 挤[ji] (squeeze), 撑[cheng] (near the point of burst), 肿[zhong] (swelling), 胀[zhang] (inflating), 绞[jiao] (twist), 揪[jiu] (hold tight), 拧[ning] (wring), 掐[qia] (pinch), 跳[tiao] (jump), 剜[wan] (scoop out), 坠[zhuì] (drop), 钻[zuan] (drill), 抽[chou] (pump), 叮[ding] (sting), 痉挛[jing luan] (cramp), 蠕动[ru dong] (wriggle), 撕裂[si che] (tear at), 撕裂[si lie] (tear apart), 胀破[zhang po] (inflating to burst), 胀满[zhang man] (turgor), 刺痒[ci yang] (itchy), 憋闷[bie men] (suffocate), 过电[guo dian] (electric shock), 揪心[jiu xin] (anxious), 切肤[qie fu] (cutting skin), 酸胀[suan zhang] (acid swelling), 重压[zhong ya] (heavy load)
Adjectives	干[gan] (dry), 僵[jiang] (stiff), 硬[ying] (hardness), 锐[rui] (sharp), 钝[dun] (blunt), 冷[leng] (cold), 热[re] (hot), 火辣辣[huo la la] (burning), 火烧火燎[huo shao huo liao] (feeling terribly hot), 迁移性[qian yi xing] (mobility), 游走性[you zou xing] (migration), 转移性[zhuan yi xing] (transitivity)
Noun	刀[dao] (knife), 针[zhen] (needle), 锥[zhuì] (cone), 电[dian] (electric), 火[huo] (fire), 雷[lei] (thunder), 石[shi] (stone), 蚊[wen] (mosquito), 虫[chong] (insect), 气[qi] (chi)

We find that those words are mostly daily used words supplemented with technical words. Daily used words involve objects and concepts that we often run into, which are ready to be used to describe our pain experience, for example: “针刺痛[zhen ci tong] (needle prick)”, “针[zhen] (needle)” is a daily used object and quite usual people would get hurt from it. Therefore, using “针刺[zhen ci] (needle prick)” to describe a pain type can be easily understood. On the other hand, the use of technical words is inevitable. With the development of medical science and the improvement of medical standardability, many terms appeared in patient and physician dialogue, such as “游走[you zou] (migration)”, “迁移[qian yi] (move)”, “脉冲[mai chong] (pulse)”, “放射[fang she] (radiate)”, “散射[san she] (radio scattering)”, “辐射[fu she] (radiation)”. Those are professional and specific expressions of pain experience.

The image and color meaning of pain-describing words are also very characteristic. This paper explores relevant nouns’ distribution in different classifications in terms of their

lexical meanings. A Thesaurus of Modern Chinese serves as the frame of reference of this research. Results show that pain-describing nouns mainly come from natural matters (natural objectives, weather, and insects), daily appliance, and basically they are dangerous and disruptive, like “刀[dao] (knife), 针[zhen] (needle), 锥[zhui] (cone), 电[dian] (electric), 雷[lei] (thunder), 石[shi] (stone), 蚊[wen] (mosquito), 虫[chong] (insect), etc. They are comparatively dangerous things in daily life and can lead to injury as well as pain feeling. It is natural that those nouns are used to describe pain. Actions and states associated with those images are strongly negative, like “刺[ci] (stab), 压[ya] (press), 绞[jiao] (twist), 剜[wan] (cut out), 钻[zuan] (drill), 叮[ding] (sting), 触电[chu dian] (get an electric shock), 过电[guo dian] (experience an electric shock)”, “干[gan] (dry), 锐[rui] (sharp), 钝[dun] (blunt), 冷[leng] (cold), 热[re] (hot), 火辣辣[huo la la] (burning), 火烧火燎[huo shao huo liao] (feeling terribly hot)”. Obviously, pain experience is unpleasant. Medically or psychologically, pain comes from physical and psychological experience, or rather say, an inner experience. But pain-describing words are ways to externalize pain expressions, which means inner pain experience are usually described as attacks from outside world.

We are interested in the cognitive process during pain-describing words express pain. In what ways do those words connect individual experience with general experience and what factors will influence this kind of expressions? We will discuss those issues in the following parts.

4. Representation Pattern Analysis of pain-describing words

4.1. “Container metaphor” of pain expressions and “externalization” representation.

Cognitive linguistics shows that metaphor is an important way for people to perceive. Similarly, metaphor plays an important role in the cognition of pain experience. Starting from cognitive semantics, Lascaratou (2007), in his analysis of structural expression of pain-describing nouns, illustrated that the linguistic realization form of metaphors as well as the choice of single word’s framework are triggered by human’s conceptual structure of image schema (or container image schema/source-path-target schema).

In light of Lascaratou’s research, we believe that “container metaphor” does trigger the choice of linguistic realization form in pain language and try to establish “container metaphor” model pattern (see Figure. 1)

First we should know the difference between “outside” and “body area”: Outside world serves as a cognitive area that connects human as individuals with their surroundings. There is an “encroachment-resistance” relation between human and environment, for example, there are interactive relationships like “fire will burn body, people should avoid being burnt by fire.”, “knife will cut fingers, be careful when using knives.” When dealing with this kind of relationship, people get objective experience of “烧痛[shao tong] (pain caused by fire)”, “刀扎痛[dao zha tong] (pain caused by knife cutting). Body area is a cognitive field where people know about themselves. Take the body as a kind of space, it does not only contain our organs, but also contains foreign matters, which renders it as a project of outside world.

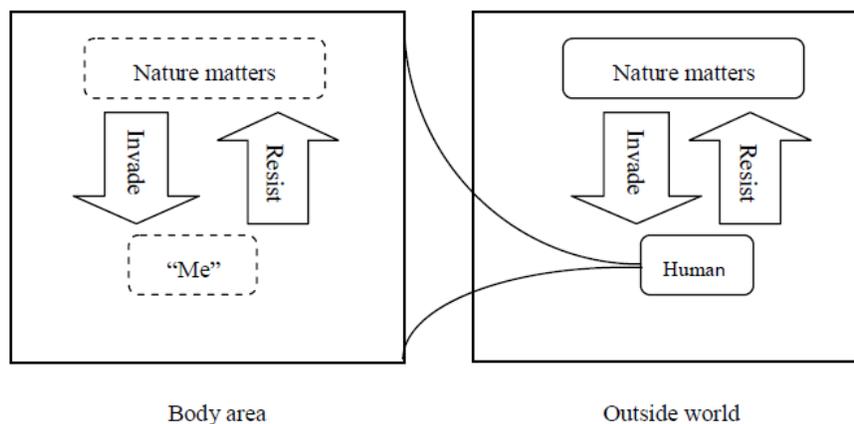


FIGURE 1. “CONTAINER METAPHOR” MODEL OF PAIN EXPRESSION

When the body generates pain experience physically or psychologically, there is no real outside influence. In this way, body is a projection casted by the outside world in this metaphor. There is an “evasion-resistance” relationship between “me” and hypothetical “nature matters”, which is the same between human and nature. In other words, this is an externalization of inner experience. It has obvious embodiment among pain-describing words. Expressions like “针刺痛[zhen ci tong] (needle pricking pain)”, “刀割痛[dao ge tong] (knife cutting pain)”, “虫咬痛[chong yao tong] (pain like an insect bite)” do not necessarily mean there are “needle” “knife” or “insect”, but to externalize some inner feelings to similar ones. There are other words though, which do not have clear action performers, all indicate that there are outside influence, like “掐痛[qia tong] (pain as pinched)”, 跳痛[tiao tong] (throbbing pain), 剜痛[wan tong] (as pain as carved out), 坠痛[zhui tong] (bearing-down pain), 挤压痛[ji ya tong] (squeezing pain), 火烧火燎样痛[huo shao huo liao yang tong] (as pain as fire-baked).

This model explains how we use “container metaphor”, and how to use exterior experience to describe inner feeling by externalization. However, as each individual has his or her own cognitive process, there can be different externalization operations with a variety of metaphor objects, which may cause mismatches in language expression. In other words, “how would I know that the pain you are talking about is what I am experiencing now?”

4.2. Inter-subjectivity of pain-describing words. Based on the sensory division of Tye (1995), Liang Ruiqing (2012) divided sensory vocabulary into different categories like physical sensations, inner feeling, visual experience, hearing experience, auditory experience, smell experience, touch sensation, gestation experience [10]. Pain-describing vocabulary belongs to physical sensations category. According to Liang Ruiqing’s study, sensory words have phenomenal meaning. The so-called phenomenal meaning refers to speaker’s psychological phenomenon to properties of sensory experience. The phenomenal meaning is not a purely subjective sense, but should be inter- subjectivity.

We analyzed the “container metaphor” mode of pain-describing vocabulary. One describes his/her experience through outside world experience, which is just a purely cognitive relation between subjectivity and objectivity. If pain experience can only be expressed in this way, problems like “how would I know the pain you are talking about is what I am experiencing now?” will surface. Thus, we also believe that lexical meaning of pain-describing words are inter-subjectivity. When we consider the relationship between subjectivity and objectivity, we also need to consider those constructed by other subjects to reach a consistent cognitive structure among subjects.

One cannot define an exclusive pain, because in that case, he cannot communicate with others about this feeling. People can have relevant communications only after they have found common ground for one feeling, and reached agreement on the externalization. “Pain expression” is not a separate behavior, it is social activity. Pain language is a branch of language with sociality that serves communicative need of social life.

Different people can reach a common understanding of the pain experience and expression. Generally speaking, this can be comprehended from two aspects³: On the one hand we have roughly the same neurophysiological properties, which enables us to have a certain commonality in the perception and experience of the external field and the body field. Thus we can have similar experience toward body stimulation brought by outside subjects as well as sensory feeling of mental and physical statement; On the other hand, we have a much similar social life form, which enables us to pick same subjects as metaphor pain experience. We can use the same language to express pain experience to reach the purpose of communicating individual experience and collective experience.

4.3. Semantic granularity of pain-describing words. According to the characters of pain, pain-describing words can be classified as “刺痛类[ci tong lei] (tingling class), 胀痛类[zhang tong lei] (swelling pain), 酸痛类[suan tong lei] (aching pain), 烧灼痛类[shao zhuo tong lei] (burning pain), 绞痛类[jiao tong lei] (colic pain), 跳痛类[tiao tong lei] (throbbing pain), 钝痛类[dun tong lei] (dull pain), 坠痛类[zhui tong lei] (bearing down pain), 痉挛痛类[jing luan tong lei] (cramps), 挤压痛类[ji ya tong lei] (squeezing pain), 刀割痛类[dao ge tong lei] (sharp pain), 钻心痛类[zuan xin tong lei] (cardiac pain)” and so on. If we go through all the pain-describing words under each category, we can find many overlapping words, for instance, “酸胀痛[suan zhang tong] (sore and turgid)” both belongs to swelling pain and aching pain. Some categories are much quite close, like “刺痛类[ci tong lei] (stabbing pain)”, “锐痛类[rui tong lei] (sharp pain)” and “钻顶样痛类[zuan ding yang lei] (drilling pain)”. Thus we can see descriptions of pain are not isolated from each other rather are inter-related. There is a prototype for each pain type. Prototypes overlap with each other and form semantic field to meet the demand of specific pain description.

Pains of every type have a typical prototype, which is a reflection of “consensus cognitive construction”. Although not everyone can feel the difference between “针刺样痛[zhen cha yang tong] (needle pricking pain)” and “刀刺样痛[dao ci yang tong] (knife

³ We have also made reference to research of Liang Ruiqing (2012). See [10] for details.

stabbing pain)” (the two belong to “刺痛类[ci tong lei] (stabbing pain)”), or “蚊叮样痛[wen ding yang tong] (mosquito biting pain)” and “蚁咬样痛[yi yao yang tong] (ant biting pain)”. (the two belong to “咬样痛[yao yang tong] (biting pain)”), we do have fundamental consensus toward “刺痛[ci tong] (pricking)” and “咬痛[yao tong] (biting pain)”. This is because pain experience belong to experience continuum, which is continuous and exquisite. Discreteness of language means pain experience cannot be seamlessly expressed. So we can only manage to make representative “spot” mark on the continuum of pain experience.

Thus, semantic meanings of pain-describing words are different in terms of their granularity. “痛[tong] (pain)” is a most general expression. If we can say “刺痛[ci tong] (stabbing pain)”, “抽痛[chou tong] (throbbing pain)” or “跳痛[tiao tong] (jumping pain)”, then the granularity degree is low. If we can refine it to “锥刺样痛[zhui ci yang tong] (cone pricking pain)”, “抽搐痛[chou chu tong] (tic pain)” “脉冲痛[mai chong tong] (pulse pain)”, then the granularity degree gets higher. As the degree of granularity increases, the description of pain character becomes more specific and detailed. From medical diagnosis perspective, the more specific of symptom description, the better. Therefore, the degree of granularity relates to the result and accuracy of diagnose. Systemize and differentiate pain-describing words will serve medical diagnosis.

4.4. Influence of medical common knowledge, life experiences and cultural backgrounds in the expression of pain. In the above sections, we mainly analyzed pain expression from human cognition perspective. In the following part, we briefly discuss influence of medical knowledge, life experience, and cultural backgrounds to pain-describing words.

Pain description derives from summary of cognitive experience but also goes beyond it. As medical terms, they have been professionalized and systematized. This is reflected most clearly in those highly specialized vocabulary. To some extent, the master of pain expression is a reflection of medical knowledge. The more one understand those common knowledge, the more accurately can he or she choose words to describe pains. Those common knowledge comes from the accumulation of experience. “久病成良医[jiu bing cheng liang yi] (long illness makes patient a good doctor)”. It can also be acquired from learning medical knowledge.

Since pain expressions are realizations and metaphors in the interaction between individual body and outside world, and interactions come from life experience, so life experiences are bound to affect pain expressions. For example, a person who had never experienced electric shock probably will not know exactly what “触电样痛[chu dian yang tong] (electric shock-like pain)” it feels like, and it is difficult for him or her to use this word to describe a corresponding pain. However, some words also show that not all pain-describing words are from real life experiences, such as “雷轰样痛[lei hong yang tong] (thunder-like pain)” came from people’s imagination of the pain experience. After all, almost no one can express how such experience feels like. But this kind of imagination has

foundation, it is generated from people's observation of this natural phenomenon. From this point, it is still built on life experience.

Some pain-describing words come from traditional Chinese medical terms, such as “气痛[qi tong] (chi pain)”, “空痛[kong tong] (empty pain)”, “风痛[feng tong] (wind pain)”, “痹痛[bi tong] (impediment pain)”, “冷痛[leng Tong] (cold pain)”, “紧痛[Jin tong] (tight pain)”.⁴ “气痛[qi tong] (chi pain)” is because of “气聚三焦[qi ju san jiao] (stagnation of the circulation of energy in three warmers)”; “空痛[kong tong] (empty pain)” it is due to the weakness of vital energy and blood; “风痛[feng tong] (wind pain) is a result of “邪风内淫[xie feng nei yin] (the invasion of pathogenic air)” ; “痹痛[bi tong] (impediment pain)” is caused by “疏泄失调[shu xie shi tiao] (imbalance of catharsis)”; “冷痛[leng tong] (cold pain)” is caused by “寒邪阻络[han xie zu luo] (blocked by cold pathogen)”; “紧痛[jin tong] (tight pain)” is regarded as a result of “外感风寒[wai gan feng han] (catch a cold)”. All the concepts involving “气[qi] (chi)”, “滞[zhi] (stagnation)”, “虚[xu] (weakness)”, “邪风[xie feng] (pathogenic air)”, “寒邪[han xie] (cold pathogen)” and “风寒[feng han] (wind cold)” are concepts from traditional Chinese medicine. Only with a Chinese medical background can one know precisely what those words mean, and it is under this cultural background that they are most commonly used.

5. Postscript: Understanding “Pain Language” and Medical Linguistic Research.

Greek physician Hippocrates once said, "There are two things a doctor can use to cure people, one are drugs, the other one are words." We can see people have long recognized the important role of language in medicine. In the 1970s, doctor-patient communication was officially established as a broad research field internationally. Wang Xiaojun (1987) published an article, proposing to strengthen "medical linguistics" [11]. Pain is the most common theme in doctor-patient conversation and also an important focus of diagnostics. Thus our research toward pain-describing words has certain medical linguistic value.

Based on our discussion above, we can see pain-describing words have close relation with patients' expression of their own pain experience. Medical common sense, living environment and cultural background all have impact upon pain expression at different levels. Doctor-patient communication is a mutual way. Patients' pain expression and doctors' perception on that can influence the effect of doctor-patient communication. As different causes of pain have different characters, the accuracy of pain symptoms can help diagnosis and improve medical treatment performance.

Although our research of pain-describing words focuses on lexical semantics, we have tried to explain its relevance medical linguistics. Given the practical value of medical linguistics, this study can be further explored in the following way: for instance, with the knowledge of diagnostics, we can establish a “Pain-Describing Vocabulary for Diagnose” to make doctor-patient communication more effective. At the same time, we can advance relevant medical linguistic studies, elaborate pragmatic features of doctor-patient communication from syntactic and semantic aspects, and explore complicated linguistic

⁴ Yu Peng generally systemized and analyzed pain terms in traditional Chinese medicine. See [7] for details.

factors that would influence doctor-patient communication. We can also conduct researches in areas like language-based psychological treatment, doctor-patient communication, term standardization of medical work, term etiquette, and apply linguistics to practical use.

6. Conclusions. In this research more than 230 pain-describing words are summarized based on relevant studies. Pain-describing words are not technically “words”. Most of them are word groups or phrases. They are in a structure of “pain nature/ character+ ‘痛 [tong](pain)’”. We find that daily used words involve objects and concepts that we often run into, which are ready to be used to describe our pain experience, and pain-describing nouns mainly come from natural matters (natural objectives, weather, and insects), daily appliance, and basically they are dangerous and disruptive. Pain-describing words are ways to externalize pain expressions, which means inner pain experience are usually described as attacks from outside world. Lexical meaning of pain-describing words are inter-subjectivity and different in terms of their granularity. Pain-describing words have close relation with patients’ expression of their own pain experience. Medical common sense, living environment and cultural background all have impact upon pain expression at different levels.

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