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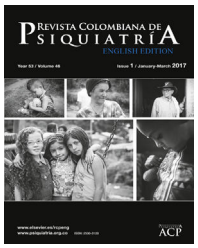

Review Article

Chronic pain and grief☆

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ABSTRACT

Introduction: The aim of this article was to conduct a systematic review in order to find information that enables a connection between chronic pain and the grieving process to be established, beyond the intuitive relationships that connects them.
Methods: The medical literature was reviewed in search of articles that provide some evidence of the connection between chronic pain and grief.
Results: The available information on both topics by themselves is profuse but there are very few publications that deal with both issues simultaneously.
Conclusions: The connection between chronic pain and grief has been mentioned intuitively as a condition taken for granted. However, little evidence of this relationship has been published, which suggests that this topic has not been widely researched.

Dolor crónico y duelo

Palabras clave:
Dolor crónico
Duelo

RESUMEN

Introducción: En este artículo se intenta encontrar, mediante una revisión sistemática, la información que permita establecer alguna conexión entre el dolor crónico y el proceso de duelo, más allá de las relaciones intuitivas que los conectan.
Método: Revisión de la literatura médica sobre los artículos que puedan mostrar alguna evidencia de la relación del dolor crónico y el duelo.
Resultados: La información disponible sobre ambos temas por separado es abundante, pero cuando se trata de informaciones que los relacionen, es muy poco lo que se encuentra.

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Conclusión: La relación entre el dolor crónico y el duelo se ha mencionado de manera intuitiva como una condición que se da por sentado. Sin embargo, se ha publicado muy poca evidencia de esa relación, lo cual es una muestra de que es un aspecto muy poco investigado.

Introduction

Pain is an important aspect in the medical field, as the vast majority of conditions produce some type of pain.

There is a very close relationship between pain and grief from an etymological perspective; both words mean pain. In Spanish, the term 'pain' is used in relation to physiological experiences, and the term 'grief' in relation to emotional experiences. With this in mind, the purpose of this article is to search in the medical literature for existing evidence on the relationship between the two subjects, chronic pain and grief, with the intention of providing useful information in order to understand how both experiences interact, beyond the intuitive statement that a relationship exists.

Methods

For this review, a search was carried out in the following databases: PubMed, SciELO, EMBASE and Lilacs. In PubMed, 151 articles were found with the following thesaurus entries (given that grief has three meanings in English, all three were used): Chronic Pain and Grief: 40 articles; Chronic Pain and Mourning: 42 articles; Chronic Pain and Bereavement: 71 articles. The search in SciELO did not produce any results with the same thesaurus entries. The search in EMBASE did not produce any results. A search was also performed in Lilacs, and did not produce results.

Of all the articles found, only four related chronic pain with grief in an inferential deductive manner, with no confirmation of the relationship between both subjects. The other articles did not present a direct and clear relationship between the two subjects. The connections are more circumstantial and highly tangential. In view of this, an additional search was performed in other areas of knowledge to complement the shortage of direct data on the subject. In view of the lack of information on the relationship between chronic pain and grief, a narrative-style review was conducted in an attempt to construct a relationship between both subjects. One possible search could have been oriented towards the relationship between chronic pain and loss; however, even when the loss (whatever its nature) originates in a grieving process, this search was not considered relevant because it would have deflected attention away from the objective of this review.

Acute pain versus chronic pain

From a medical perspective, pain is classified into two types: acute and chronic. Acute pain has a physiological meaning (with a significant neurovegetative involvement) of alert against tissue damage, which involves a pathological purpose of searching for a response for restitution and resolution. According to the International Association for the Study of Pain (IASP),[1] it refers to all pain that lasts for less than three months.

In the same vein, chronic pain is determined by a duration more than three months. It presents little neurovegetative involvement, and a psychological and behavioural deterioration of greater intensity than in acute pain; it does not have a pathological purpose of alert or warning about tissue damage, nor an adaptive or functional value.[2] It is expressed as mixed suffering, which involves the concomitance of physical pain and emotional pain. From the perspective of suffering, it expresses something more than physical pain and is related to existential experiences which have not been specified clearly in the medical literature. One of them is the grieving process which occurs as a result of a loss of a loved one, a job or any other significant circumstance for a person.

Chronic pain as a multidimensional experience

Referring to the physiology of Guyton,[3] pain is a protective corporality mechanism; it always happens when a tissue suffers an injury. It prompts the individual to react in a reflective manner to remove or prevent the stimulus which causes it. In this sense, pain acts as a useful and functional alarm which serves as the body's protective reaction, and enables the detection, localisation and identification of events or processes that may generate pain in the body. In the words of Casal,[4] the absence of pain or its silence may lead to a lack of bodily reactivity, with fatal consequences.

Chronic pain as a subjective experience has a clearly physiological base, but it is fuelled by a context which is constituted as the framework where it is articulated as a life experience. It is characterised as being a pathological pain that is not very consistent from a neurovegetative perspective, that does not have a clear physiological purpose, or an adaptive or functional value, but that generates a series of psychological and behavioural disorders.[5] Life with chronic pain promotes an existential restructuring, with relearning, adaptations and some degree of disability that involves inevitable grief, as stated by Dysvik et al.[6] This is manifested in a feeling of body fragmentation, visible as lack of control of some part of the body. However, in the different articles reviewed, the reflection that grief in itself, as an emotional pain experience, may be the origin or concomitance for the expression of chronic pain, is not given.

As a result, it generates dichotomous experiences of despair and hope, a gap in the understanding itself as a "painful phenomenon", which is not subscribed to an

acceptable explanation, as argued by Furnes et al.[7] Is it possible to think of a circular relationship between both? Does chronic pain generate grief and grief generate chronic pain?

Responding to these questions requires, in principle, the consideration that if acute pain is a response to a harmful stimulus, chronic pain lacks a clear external stimulus. Nevertheless, those who suffer from them recognise and experience both types of pain (acute and chronic) as a threat to the body's integrity. Therefore, it is not uncommon for patients with chronic pain to struggle to understand that the mind, emotions or psyche are involved in their manifestation as a request for help, a form of aggression, an expiation of blame or failure to adapt to a loss.

Swanson[8] considers that pain is an affective and emotional state that can lead indefinitely to emotions, when it is not possible to find a more economic way of expression, through their verbalisation. It is, according to this author, a primary neurophysiological event that is in the same category as anxiety and depression, and that, like them, would have a neurochemical correlation.

From a constructivist perspective, Gil et al.[9] consider that chronic pain is organised in an individual in connection with a framework of social structures (groups we belong to, categories that we use to read the world, social classes, institutions, beliefs, etc.). In this sense, the authors consider that chronic pain may be a body response when faced with these structures or an emergency of these whose influence and presence determine how, when and where one feels chronic pain. One study performed with terminally ill patients by Strassels et al.[10] shows that the experience of chronic pain varies in people depending on the clinical characteristics of the suffering and, to a large extent, on the demographic characteristics of the patients. This shows the significance of cultural and family aspects and of beliefs, such as covering, which shelter the affected individual from the experience of living with chronic pain.

Katz et al.[11] show in their study that the onset of chronic pain after surgical procedures is influenced by genetic and biological factors. In turn, they consider that the transition of acute pain to chronic pain is also influenced by psychological and social factors such as previous anxiety, introverted personality, fear of the operation, the experience of surgery as a catastrophic loss, strategies to confront pain and, in particular, the request response and postoperative care, carried out by others which may reinforce the experience of chronic pain.

In the opinion of the authors, chronic pain arises when interacting with other people and is expressed and interpreted in the subjective dimension of the individual, with the power of obtaining certain concessions from the surroundings to behave in an unusual manner, as it would not be acceptable in another manner. Patients' responses to pain depend on how family, social and work contexts react to their complaining as a communication of suffering. Sometimes the overload of requests from the carers may generate an exacerbation of the painful complaining and form a vicious circle, in which the context collaborates tacitly in the maintenance of pain and chronicity.

This continues to have consequences in the medical field, given that medical practice is in reality a cultural way of generating meaning in complaints and symptoms, nourished by social and historical contexts and processes to which chronic pain is not subtracted, as White says.[12] Medicine emerges from an interdisciplinary, social and economic dialogue. It is a relational process which means that chronic pain as a symptom is embedded in a cultural and symbolic dimensions warp that connect the self to the body with senses that keep pace with social and cultural transformations, as DelVecchio et al.[13] state. Therefore, in the face of chronic pain, it is necessary to always carry out a multidisciplinary approach.[10] In particular, when individuals get closer the end of life, it should be interdisciplinary and coordinated, due to the chronicity that it has acquired and due to the emotional impact that the closeness of death produces in all individuals involved: family, medical and non-medical personnel, as Momen et al.[14] emphasise.

Pain and expression

When the chronic pain of a patient is examined, it is sought to specify it in the patient's own words, with the aim of locating it in the body's geography, determining its intensity and describing its characteristics. In this sense, chronic pain may be stated as an intense, rapid, electric, sharp, whiplash, blow, electric-shock pain or as a slow, burning, nauseous, dull, piercing, permanent pain. All of these are symbolic expressions which verbalise a painful experience process, in accordance with the cultural ordinariness of the historical point in time.[2] Three hundred years ago, it was not possible for someone to describe their pain as electric. It is common for pain to be expressed according to instruments, pain like a stab can only be expressed in this way if it is known what a knife is; an electric or electric-shock pain, if it is known what is meant by electricity. Carlson[15] says that pain can only be defined by a withdrawal reaction that exposes it or by expressions of complaint that are specified in defined verbal manifestations (words) or undefined manifestations (groans). It always has a strong subjective component: "Activity induced in the nociceptor and nociceptive pathways by a noxious stimulus is not pain, which is always a psychological state, even though we may well appreciate that pain most often has a proximate physical cause".[2]

For this reason, patients with chronic pain generate a lot of doubt. Are their complaints the expression of a real somatic lesion? Chronic pain syndromes have the characteristic that they are between physical, psychological and social discomfort. They are an expression of the patient and their world which makes their approach difficult. Their scope goes beyond the limits of the patient's corporality. In this sense, the definition that the IASP made[1] as a sensory and emotional experience associated with a present or probable tissue lesion makes it possible to reveal three dimensions of pain:

- The experience of chronic pain as a unique and non-transferable individual experience.
- The emotional tone derived from this experience is expressed in a sensory dimension of pain perception, which generates a certain emotion and is inscribed as a

psychological value and registered in the memory as an effective and necessary content for survival.
- Independently of the presence of verifiable tissue damage, chronic pain continues to be pain, whether it is somatic or psychogenic.

In any case, it should be kept in mind that chronic pain is, in general, a differentiated condition and is apparently disconnected from the possible triggering processes and without doubt difficult to approach.

Blanquer[16] states that chronic pain is a phenomenon which presents four aspects: (a) sensory and discriminative, due to the neurophysiological mechanisms of pain perception; (b) emotional, which unites emotion to sensory perception; (c) cognitive, which elaborates the understanding of the painful experience in itself, and (d) behavioural, which is manifested by the actions and attitudes against pain. These aspects emerge in acute pain in a disintegrated, erratic manner and without an apparent symbolic content that supports them. Chronic pain has a symbolic component. It is always something more than pain alone; it has a general meaning, a contextual meaning and an individual nuance.

Grief as an existential experience and predecessor of chronic pain

Etymologically, grief has the same origin as pain. In reality, they are synonyms; in fact, the word 'grief' comes from the Latin '*dolus*', which means 'pain'. According to the Real Academia Española de la Lengua [Royal Spanish Academy of Language],[17] grief is the expression of "pain, pity, distress or sorrow" that is felt for the death of someone. It is an emotional and psychological process, and, like all processes, it has a beginning and an end.

Both emotional pain, represented by grief, and chronic pain, which is a physical and psychological experience of loss of health and of body disintegration, are an unpleasant experience. Grief is expressed in an emotional disturbance and can result in somatic expressions, which can sometimes include sporadic pain of a nonspecific nature, just as also happens with depressive disorder (which frequently occurs with chronic lumbar pain, cervical pain, nonspecific muscular pains). Grief starts with the experience of loss of someone or something and, therefore, is in principle an experience of breakdown. Its development has the objective of the reintegration of the individual, this time without the lost object, for a new adaptation to reality.

Chronic pain becomes an experience of loss (health, peace of mind, etc.) and requires the development of a process of grieving, although it is not common to think it. Supporting this, Furnes et al.[7] state that grieving after the establishment of chronic body pain becomes a route towards reintegration of the damaged body. Both chronic pain and grieving are multidimensional processes that involve cognitive, emotional, somatic and behavioural aspects. This multidimensionality becomes apparent, in particular when the prognosis of incurability of a suffering has been made explicit. Meza et al.[18] state that these people unconsciously start a process of adaptation (preparatory grief) to the new situation, anticipating their demise by sharing their emotions, feelings and expectations with the people around them, as a way of carrying out anticipatory grief.

Furthermore, Mystakidu et al.,[19] in relation to this preparatory (or anticipatory) grief, state that it is not so useful and that is even harmful. In patients with terminal cancer, regardless of gender, they observed that it increased the possibility of despair, anxiety and depression and it was even associated as a risk factor for metastasis. It is a symptom of poor adjustment, due to the possibility of generating rumination, an alteration of the content and of the dynamics of thought that consolidates the individual in sadness and depression.

From this perspective, grieving is a process which cannot or should not be anticipated; culture and the type of society generate specific rituals and ceremonies to prepare for grieving. It has its time, and hastiness before the events occur causes a behavioural paradox and forces the individual to act as if the loss had happened before it has occurred, as Pascual et al.[20] mention.

There is no clear establishment of the time necessary for grieving, when it should start and when it should end, although a period of between 6 and 12 months is considered as normal, according to Echeburúa et al.[21]

With regard to the content of the grieving process, there are different descriptions of the signs and symptoms that may occur, organised into phases or stages depending on the author that presents it. It is not strictly necessary that a person goes through the process in the same order or with all the stages exactly as described. Variability is very extensive, and the sequence of the process has a highly personal nature.

From the point of view of Kübler-Ross,[22] grieving is a process with five phases: denial, anger, bargaining, depression and acceptance, which do not necessarily need to take place in this order. Despite this, these phases will be experienced at some point. Bowlby,[23] for his part, establishes four phases of grieving: numbness, which is characterised by a state of shock, bargaining, anger and non-acceptance; yearning and searching, in which the individual feels a deep yearning and has constant thoughts about the deceased; the disorganisation and despair phase, where the force of the reality of the loss is incorporated with all the symptoms and the grief is imposed, and the reorganisation and recovery phase, in which the individual starts to emerge from the grief, is incorporated into life and the healing memory which internalises the loss is established and integrates it to the self.

Worden[24] proposes grief in four stages orientated as tasks: accept the reality of the loss; work through the pain of grief; adjust to an environment in which the deceased is missing; and find an enduring connection with the deceased while embarking on a new life. O'Connor[25] projects grief as four stages which progressively advance in a chronological order: the first stage, of breaking with old habits that last from the death until the eighth week; the second stage, which starts the reconstruction of life and goes from the eighth week up to 12 months; the third stage, in which the individual starts a search for new emotional relationships, and goes from the first year to the second year, and, finally, the fourth stage, which is the phase of finalisation of the adjustment and starts after the second year.

Brown et al.[26] describe grief as a set of somatic, cognitive and emotional symptoms, in a highly personal combination in each individual, which occurs in three stages: an initial shock phase, a second anxiety phase and a third resolution phase. In the case of Markham,[27] grief occurs in a process that, from the first phase of disbelief and denial, a second phase of resentment follows, then a third of remorse, a fourth of concerns, a fifth of resignation and a sixth of tranquillity. Finally, Parkes[28] suggests five phases of grieving, which start with a stage of alarm in which a stress reaction predominates; the second of shock in which numbness is the emotional content; the third of apprehension in which the individual starts the search for the deceased; a fourth stage of depression with a profound sadness and, finally, a fifth stage of recovery, in which a repair process for the loss occurs, thanks to the symbolic reconstruction.

Another author, Hanus[29] presents grieving as following the loss of a loved one, but also as a process that can be triggered by the loss of a loving relationship or a significant activity for the individual. In his perspective, grieving consists of two phases which occur linearly, but may overlap during the process. The first is the impact phase, which is triggered at the time the person receives the news. An internal emotional stress is established and the mourning and feelings of anger surface. The depression phase, characterised by the nostalgia of the loss, sadness, the effort to accept and resign to the experiences related to the lost object are now part of the past. There is a withdrawal from the surrounding world, the person feels a deep inner and piercing pain, the intensity of which varies depending on the significance of the lost object. The recovery or grief resolution phase produces a gradual return of interest towards their surroundings and the world. This is accompanied by the desire to establish new relationships. The pain starts to dissolve into everyday life and the memory is incorporated.

Grief does not always follow an expected course. It may become a pathological process, which Parkes[30] classifies into three types: unexpected loss syndrome, in which the stage of bewilderment is very long and lasting, generally when the death of a child occurs; ambivalent grief syndrome, which occurs when the person does not know if they are pleased or saddened by the loss and which has many feelings of guilt, and chronic grief syndrome, when the process is prolonged much more than expected. It is at this time when the pain is established as a physical expression, manifesting the impossibility of the grief and its incorporation which develops into chronic pain.

This presentation of the different concepts of the grieving process was carried out to demonstrate the complexity that is involved in relating it to chronic pain. The different authors express various phases of grieving, but information which makes it possible to correlate in which grieving phase chronic pain develops was not found, except in the study by Parkes.[30] It is therefore considered necessary to implement studies in this line of research, which would make it possible to carry out preventive work during the grieving process.

Chronic pain as a relational expression

Chronic pain is a holistic experience which involves physiological, psychological and social processes that generate a particular existential context. In this sense, as Ferrell et al.[31] express, grief is a factor that, with its emotional, cognitive and motivational components, intervenes in the physical condition and maintains the subsequent disability. This is very closed linked to pain, etymologically, physiologically and psychologically ("my soul hurts", "I feel pain that I don't know where to place", etc.). It has many emotional, cognitive and behavioural meanings that translate into body manifestations and expressions.[7] Morse[32] states that people tend to put up with chronic pain to suppress emotions that they are not willing to come to terms with. There is a profound relationship between chronic pain and grief. They make up a feedback loop, according to Dyswik et al.,[6] to the point where chronic pain is based on inconclusive pain, as a somatic expression of this, in certain circumstances.

Sigmund Freud[33] in *Inhibitions, Symptoms and Anxiety* made a pioneering reflection by comparing the reactions of a person with chronic pain to those which occur during grieving. Chronic pain, in some part of corporality, has a surreptitious intent of displacing the sadness of the loss of an object towards another one which replaces it. Generally, one part of the body assumes and expresses a moral pain, by means of persistent pain, due to the loss of an object. This pain of the loss established in the body becomes a vivid, intense experience, which arouses the attention of others. In this way, the pain becomes chronic, to the extent that the grief is not understood and resolved, which, once achieved, may transform the chronic pain into a conscious moral pain.

More recently, Blanquer[16] said that "the pain in their body represents the unconscious nostalgia of a beloved and lost object, but one that the patient cannot or does not want to renounce". The patient "has" a pain, their body hurts "them". The pain possesses the patient and, at the same time, the patient possesses a pain. It is sometimes surprising in daily practice to observe how the patient has learned to live with their chronic pain to the point that some therapeutic attempts to release them from it which are too "energetic" end up with the onset of side effects. For the author, chronic pain is incorporated, invading life, with the patient adapting to its existence. It acquires a multifunctionality in the patient, making it easier for them to request help, pay attention to their surroundings, and be in contact with their conscious or unconscious guilt and achieve a certain peace to not face up to themselves and their conflicts. It connects the individual with the possibility of developing a certain capacity of compensatory suffering against loss, a subtle masochistic attitude. In the face of loss and feelings of guilt, they need to have the possibility of compensating the pain of the loss with a target which they can direct their frustration and aggression towards, and there is nothing better than their own body.

In this perspective, grief brings together a relational nature (therefore, social) which is expressed in individual variabilities and contributes to the construction of chronic pain as a body expression of existential impossibility in light of the loss

of a beloved object or another significant dimension for the life of an individual, such as the loss of health. The experience of chronic pain is not easy to symbolise and express. As Wittgenstein[34] said, "Whereof one cannot speak, thereof one must be silent", and, in the case of chronic pain, it is difficult for words to embrace it. When chronic pain is imposed, linguistic speech becomes silent. Chronic pain evokes the finite nature of whoever suffers from it, puts them into the deepest solitude, given that there is no way of sharing it. This is similar to grief; it is difficult to express.

It is a post-sensory experience, but also a preconceptual experience. It appears as a personal, private and always subjective phenomenon.[35] It is modulated by sensory, psychological and sociocultural aspects which are the base from which the particular painful experience that the patient will try to communicate is formed. Therefore, there is a communicative intent that needs to be interpreted. This is why chronic pain is a qualified narration that the patient delivers and it is listened to by the doctor. It is a construct which draws on beliefs and gender, as shown by a study by Nayak et al.[36] which compares the role of the philosophical differences and of spirituality of the culture in India and the United States in relation to the response of tolerance and intensity in the face of pain. The findings of the study show that the perception, expression and tolerance of pain depend on cultural and gender aspects. Indian males, subjected to the same degree of pain, showed a greater pain tolerance than American males and females and females from the same culture. Furthermore, the way of dealing with pain also differed between males and females from both cultures.

Chronic pain, as a physiological experience, generates a sense of partial loss and, therefore, the grieving process is less obvious and evident, something that limits support. Neither the patient nor others seem to be very conscious of the losses resulting from chronic pain. However, for Bistre[37] chronic pain hurts the conscience, penetrates into the identity and puts it in crisis, incorporating a loss of self-esteem, a lack of hope and, in particular, aggression towards surroundings which is expressed by chronic pain. It is an experience of loss which it has not been possible to construct conceptually, and for which symbolic expression capable of containing it does not seem to have been found. What is not clear is whether grief can be involved in the origin, in the maintenance or exacerbation of chronic pain.

In a study carried out by Dysvik et al.,[38] it is considered that grief due to loss (death) of a loved one and grief due to chronic pain have aspects that are shared and overlap. On the one hand, in grief due to loss and in grief due to chronic pain, a process of relearning of the world and adaptation is started, independently of either of the two circumstances. In addition, both situations also share feelings of difficulties of existential control and reduction in the predictability of life. This is accompanied by reduced hope, well-being and skills to cope with life. Grief, loss and chronic pain generate some reactions which overlap into an experience of existential vacuum that the authors break down into three characteristics: emptiness, vulnerability and exhaustion. To face up to these difficulties, they designed a group intervention based on cognitive behavioural therapy, which finally delivered positive results, and hope, acceptance, universality, altruism, ease of expressing emotions, self-understanding and interpersonal learning increased in both types of patients (loss and chronic pain). This makes it possible to infer that the development process of grief facilitated by therapy contributed to an improvement in the suffering generated by both experiences.

Zisook[39] finds a connection between grief and chronic pain, years after the experience of the loss; unresolved grief is expressed in the form of visions, anguish, guilt and, very often, some form of somatic pain, generally of a chronic nature. In this regard, Gibes[40] shows, in a very short article, that chronic pain of the foot of a patient is related to the loss and disappearance of a child.

Park et al.[41] contribute to this perspective by showing that positive emotions have an improving effect on health conditions, the ability to face up to life, social activities and even on the evolution and improvement of chronic pain. They state that the development of grief is a process of reconstruction of positive emotions that favours the response of improvement in the face of chronic pain and not developing grief is part of a context of negative emotions that worsens the response against chronic pain. Rodríguez et al.[42] consider that the patient with chronic pain becomes a "difficult patient" because the health system does not interpret that chronic pain may be the expression of symbolic aspects that exceed mere corporality, but that are expressed in it. And as long as certain emotional aspects are not resolved, the pain will persist as a complaint from which the surreptitious elements which feed it and are in the emotional sphere of the experience of loss that is not resolved by a grieving process are not seen, and that can even drive the patient to suicide. While Strain et al.[43] also relate chronic pain as the main driving factor for suicide in the first year in elderly people who were widowed. For Turk,[44] the consultations attended by patients with chronic pain assemble people with unresolved grief, accumulated throughout life and in a state of hibernation. Therefore, the therapeutic approach becomes redundant, and the person who suffers from it escapes from and avoids confronting the painful losses of the past. They experience them in an intensely guilt-apportioning, persecutory and punitive way. For this reason, they tolerate physical pain more easily than mental pain, and, in this context, chronic pain is an excellent shield against grief.

As this author states, losses from the past not elaborated on by means of grief remain non-integrated in present times and acquire a threatening dimension. The way of invoking them effectively is giving an absolute dimension to the present, and this is achieved with the presence of chronic pain. In the face of current pain, the past is diluted and loses relevance. Chronic pain is an expression of the temporary distortion of the individual which affects the integration of their psychic and bodily self. Occasionally, the patients verge on psychosis, and a delirious tone is observed in their chronic pain.

Chronic pain: physical-physic confluence

Chronic pain tells us that something is wrong, not only in the body of the person, but also in their life. Therefore, it is a complex alarm and has great usefulness to orientate efforts not only towards the patient's body, but also towards their

existential context. Otherwise, pharmacological approaches will fail. We know that chronic pain is a wake-up call about chronic suffering, generally hidden for the patient. Backache, headache, etc. are subtle expressions of life pains and the display of a difficulty to live life in another way, of tolerating psychic suffering, of supporting limitations, failures, frustrations and their grieving. This generates controversies. In a study by Tomas et al.[45] which tried to determine risk factors for prolonged grieving in carers of patients with cancer, the possibility of pain as a predictor or as a consequence is not contemplated. However, a study by Walter et al.[46] related chronic pain with post-traumatic stress. It argues that psychological trauma generates greater vulnerability. Therefore, trauma associated with sexual violence, such as rape, humiliation or accumulated obscene insults generate abdominal pain, headache, pain when urinating and kidney pain, both in males and in females. By way of explanation, they propose that a trauma cannot be dealt with immediately. Therefore, the intense emotional activity that it generates acts internally and cannot be transformed into actions that facilitate the coping and its resolution, generating an emotional implosion. This leads to feelings of guilt and depression which finally are referred towards different processes of chronic pain. A study by Meluk[47] based on a wide number of ex-hostages (more than 100) corroborates the relationship between post-traumatic stress syndrome and chronic pain in victims, fundamentally expressed as headaches and chronic chest pains.

Both circumstances, post-traumatic stress and chronic pain, share aetiological and maintenance factors: high levels of anxiety, emotional activation and a similar cerebral involvement, as Chen[48] shows in a neuroimaging study where both share the primary sensory cortex, insula, anterior cingulate cortex, periaqueductal grey matter and frontal cortex. They share sensory, emotional and cognitive areas. As support for this approach, Bischof et al., cited by Walter et al.,[46] show that the expectation of pain involves a similar psychological reaction which happens in the event of a short stimulation of pain in the face of an acute nociceptive stimulation. Otis et al.[49] show that, when frequent pain presents in a post-traumatic stress situation, one of its consequences tends to be that it generates an expectation of new pain arising. This circumstance generates a vicious circle that consolidates the relationship between both conditions. This connects it to another finding by Sawamoto et al.,[50] who state that the expectation of pain during a non-painful stimulation produces a pattern of excitation, which is similar to that caused by the painful stimulation itself.

The shared relationship of post-traumatic stress and pain is known with regard to the deregulation that both can produce in the noradrenergic system.[51] In the same article, it is stated that the confrontation of a traumatised person with their experiences increases the activity of endogenous opioids, which allows them to affirm that continuous stress caused by a trauma that has not been processed induces a deregulation of the endogenous opioids, which facilitates hypersensitivity or hyposensitivity to pain or even fluctuations between both extremes. A study by Saporta et al.[52] is added as confirmation: when some patients with post-traumatic stress disorder are exposed to a stimulus related to trauma, they react with an increase in endogenous opioids corresponding to around 8 mg of morphine. The author interprets this finding as a connection between numbness and emotional paralysis and body pain, which would have a common origin. Chronic pain and negative emotions are processed in the same neuronal matrix, which is fundamentally based in the right hemisphere.[48] Post-traumatic stress disorder brings about a poor relationship with the body itself and drives the individual towards the search for solutions, and one of them is self-harm, which would have the purpose of generating endogenous opioids that would eventually contribute as self relief in the face of the impact of the trauma.[46]

O'Connor et al.[53] shows that people with prolonged grieving, when subjected to remembering a loved one that has passed away, activate nucleus *accumbens* neurons and the brain's gratification centres as if with that they are looking to relief the emotional pain that the memory causes them with a compensatory pleasant physiological experience.

These findings make it possible to establish a connection between the grief and the chronic pain, given that post-traumatic stress is an expression of the difficulties and the failure to develop appropriate grieving from a traumatic event. There is no pain without suffering.[54] All pain has an emotional meaning; it is the expression that translates the shift from a physiological situation to the person's conscience. Chronic pain, in the words of Smadja,[55] with its incapacitating baggage, would only be psychically understandable as a component of self-soothing processes that are paradoxically exciting and manage to bring out the "I" from possible falls into depression and narcissistic debacles. This is an aspect that Porte[56] also highlights: chronic pain to a large extent sets aside the attention and concentration of the individual from other unthinkable and intolerable psychological traumas for the conscience, such as abandonment, separation from a loved one, loss of identity, loss of physical integrity and others. In a sense, some components of chronic pain could be interpreted as substitutes of the grieving process in the face of loss understood by Harvey,[57] a personal and highly subjective experience of a reduction in symbolic and physical resources which a person is granted. In a case reported by Roy,[58] the patient presented headaches as a substitute for grief due to the death of his spouse, in the face of difficulties enabling him to symbolise his experience of loss.

Furthermore, chronic pain is also gone through as an experience of loss, a negative circumstance that generates long-term cognitive, relational and social setting changes. Gatchel et al.[59] state that chronic pain forms an experience of secondary loss. It is a traumatic event in itself that is perpetuated in the form of consequences such as depression[60–62] and incapacity to cope with problems. We can infer from the above a relationship between chronic pain and grief, given that depression to a large extent is a failure of any type of grief. Despite the fact that there are no clear references in the literature, it is possible to establish a circular relationship between chronic pain and grief; they are given feedback mutually and this circular causal relationship would be in the centre of the refractoriness which chronic pain entails. In one study,[63] individuals who suffer prolonged grief need to have contact with thoughts that generate an increase in their experiences of psychological pain and loss as a way of confronting these experiences in order to be able to cope with life. Paradoxically,

this increases the vicious circle of grieving, and the question at this point is whether at any time during the prolonged grieving process the psychological pain in the face of failure to resolve the process is replaced by a chronic physical pain that would consolidate the failure of the grieving, but that in some way would achieve a reduced level of adaptation in the form of the disabilities that it may generate.

Chronic pain, grief and disability

Chronic pain can generate limitations in the functionality of the person as it restricts mobility and, therefore, modifies the quality of life of whoever is suffering from it. It causes restrictions, due to the fact that activities of daily living start to become reduced, confining the range of motion only to points in which pain is not felt. In this way, people feel less able to carry out activities and they feel that pain invades their everyday lives, meaning that participation in activities that they enjoyed before or needed to carry out becomes uncomfortable or impossible.

In the study by Lerman et al.,[64] more than half of the patients with chronic pain had symptoms of depression or anxiety. And such symptoms can cause chronic pain and disabling pain. In contrast, chronic pain or disabling pain does not tend to be a predictor of anxiety or depression. Nevertheless, it has been possible to establish that when pain is difficult to manage, people report greater stress and difficulties in their physical and social functioning.[65]

Disability implies a series of losses, resulting in whoever suffers from it constantly bearing grief, while limitation is experienced in participation, especially when this is established progressively. This can occur in cases of individuals who suffer from degenerative conditions, who need to adapt to carrying out their daily activities with less ability and require greater support or depend on technological elements. Dysvik et al.[66] found that grief is an essential part of chronic pain, as well as that grief occurs after a traumatic event, and patients report that their pain subjects them to processes of adaptation and relearning and a significant change in their idea of the body, of themselves and society, which needs to be reconstructed in the face of the fragmentation that they experienced due to the chronic pain.

Conclusions

The idea that chronic pain has some degree of connection with difficulties in the grieving process is quite widespread. However, after carrying out a systematic search of information with regard to the objective of the review, sufficient evidence of this direct connection was not found in the medical literature available in different databases.

It can be said that the information available shows a neurobiological connection between chronic pain and grief, to the extent that they share some neurological locations and some neuronal circuits.

This makes one think that the relationship that exists between chronic pain and the grieving process responds to clinical perceptions of an empirical and intuitive nature of common use. Perhaps the fact that the existence of a connection has been taken for granted has ignored the need to explore and investigate the subject more. Nevertheless, it is possible to draw some conclusions with regard to the relationship between chronic pain and grief:

- Grief and chronic pain are related on a symbolic level to speech; both concepts have a common etymological origin.
- Some authors state that there is a circular feedback relationship between chronic pain and grief. Chronic pain is a body expression of the difficulties of a person to renew their existence in the face of the loss of a beloved object or another significant aspect of their life, such as the loss of health, and represents the inability of the individual to symbolise and express the mental suffering that the experience of grieving involves.
- Chronic pain and grief share psychological aspects in their process and evolution; both have a communicative intent that needs to be understood in connection with the context of the individual. In both cases, the individual is involved in the process of relearning the world and readaptation to a situation that exceeds their current processing ability.
- The literature shows that unresolved grief is expressed in somatic pain which becomes chronic. The development of grief contributes to bringing back positive emotions which improve chronic pain, and the difficulties in the development of grief increase the negative emotions which result in chronic pain.
- Chronic pain and grief share neurological locations, neuronal circuits and the production of endogenous opioids. Chronic pain and negative emotions like the experience of grief are processed in neuronal matrices located in the right hemisphere, such as the primary sensory cortex, the insula, anterior cingulate cortex, the periaqueductal grey matter and frontal cortex.
- Chronic pain, as a generator of disability, results in the production of grief, and unresolved grief results in somatisation, of which the most common is chronic pain.
- From this review, it is considered necessary to open up a field of research into the subject, to the extent that it has implications in various areas of the health field, such as treatment of pain, pharmacological costs on analgesia, the employment field, disability, palliative care, psychosomatic medicine, psychology and psychiatry.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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