

Factors Influencing Chronic Non-Cancer Pain: A Comprehensive Review

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ABSTRACT

Aim and objective: The aim of this study was to examine the impact of a possible relationship between self-efficacy, symptom severity, pain intensity, depression, anxiety and catastrophizing on health related quality of life among chronic pain patients.

Background: Chronic pain (CP) is a universal medical problem. A concerning number of individuals experience and live with different types of physical chronic pain diseases. CP alters the lives of suffering individuals in various ways. Specially, in regard to experience of health related quality of life post diagnosis.

Findings: This research has discovered that, current treatment methods are insufficient, patients are unsatisfied with the current medical techniques, and that the GPs and PCPs are not perceived to be great at treating chronic pain diseases.

Methods: A theoretical review alongside the implementation of a small exemplary pilot study that was mainly undertaken to help confirm the results that were collected via review of literature. The data presented in the pilot study are drawn from purposive sampling and structured survey questionnaires. The participants were asked to explain about the potential challenges and limitations that having to live with chronic pain has created for them.

Participants of the pilot study: Thirty adults (>18 years) diagnosed and currently living with various kinds of chronic physical non-cancer pain in various parts of the world.

Conclusion: CP is a major health problem impacting the suffering individuals as well as their loved ones. Whys and wherefores surrounding the topic of chronic pain diseases are truly concerning and require more research.

Keywords: Chronic pain; Family; Treatment; Management

INTRODUCTION

This study aimed to understand the experiences of patients with chronic physical non-cancer pain diseases. Pain is agonizing, unpleasant, and is often explained as an emotional experience associated with potential or actual tissue damage [1]. Yearly Costs of CP is calculated to be \$635 billion which is substantially more concerning than the annual costs for Cancer, Heart Disease, and Diabetes (Institute of Medicine, 2018). Universality of CP makes this disease the foremost physical as well as psychological health care predicament world-wide [2]. Chronic pain (CP) considerably interferes with the normal functioning of the suffering individual's life [3]. Traumatic injury, surgery, and arthritis are

known as the most typical causes of the development of chronic non-cancer pain [4-6]. CP is known for being a potential source of emotional distress and too often causes depression, burn out, anxiety, fatigue and catastrophizing [7]. For concerning number of patients currently available methods of treatment appear to be insufficient and very much unsatisfactory [8-13]. In the course of the past ten years, there has definitely been a rapid increase in the field of research on chronic pain, practicing different approaches with regard to understanding it's set of causes, evaluation, and management [14-16]. However, this area of research has remained under-treated, under-assessed and not so well understood [2]. For the motives of this research, all chronic

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pain disorders outside of cancer pain or pain at end of life are all together titled “chronic physical non-cancer pain”.

The prevalence of pain

The widespread presence of chronic pain (CP) scopes approximately anywhere between 8% to 60% and higher [11,17-21]. Chronic pain of moderate to severe intensity was calculated to appear in approximately 19% of European adults, impacting their everyday undertakings and responsibilities in various ways. Most of whom had not sought and obtained professional pain treatment. In addition, 40% of those who had sought professional help, perceived the pain management techniques provided for them as insufficient and unsatisfactory [8].

Bio-psychosocial model of chronic pain and pain related disability

As stated by the bio-psychosocial outlook on pain, chronic pain is the outcome of interactions between biological, social, and psychological factors [2]. The bio-psychosocial model definitely presents us with a great structure for a better understanding of the pain-related disability as it is a combination of medical as well as the psychosocial model [22]. The biomedical disease model, mainly emphasizes on disturbances of physical functionings caused by fundamental physiological, anatomical, or pathological activities. Fundamentally, the bio-psychosocial model of pain which is also known as the most appropriate outlook on the phenomenon of chronic pain, as it looks at the concept of chronic pain disease from various aspects and takes various elements of the patients’ lives into account. In other words, the bio-psychosocial model consists of the dynamic of the relationship between bio, psycho and social constituents associated with the experience of pain. But, in order for this model to be effective in the treatment and management of chronic pain diseases, it needs to be constantly modified based on the ongoing developments in terms of knowledge and technology [2,16].

CP and its impact on health related quality of life

Generally, HRQoL depends on an individual’s physical wellbeing, psychological well-being, and the dynamic of their family and their social relationships. A person’s quality of life in terms of psychological and physical aspects is another way to determine the potential negative effects of pain [4]. Various studies conducted on CP patients with Fibromyalgia, Rheumatoid arthritis (RA), and low back pain have demonstrated that, these ailments are likely to substantially worsen the sufferer’s experience of quality of life [23]. Each one of these chronic diseases not only impact the sufferer physically but, also the magnitude of their mental impact appears to be severe, which will consequently lessen the extend of HRQoL experienced by the patients particularly, in more severe diseases e.g., Fibromyalgia, RA, CFS, etc. [24]. To look at this phenomenon from an economic point of view there are absolutely no questions that, the rough calculations of economic encumbrance caused by chronic pain is not sufficient for a fair justification of the magnitude of the distress and diminished

health related quality of life that is experienced by chronic pain patients. In addition, it was not the financial consequences but, rather the immense sufferings caused by chronic pain that resulted in pain relief being considered as a universal human right [25].

Additionally, in another assessment when the score of HRQoL was compared between acute pain patients, CP patients, and a group of pain-free individuals, CP patients scored the lowest in all elements of HRQoL. Several studies suggest a strong connection between the degree of pain and extent of HRQoL in pain patients indicating that, severity of pain is associated with lower HRQoL [26-28]. Various research indicate that, CP patients with severe and recurrent pain episodes have dwindled quality of life, when compared to patients with less severe, and less frequent episodes of pain. In addition, the pain level of patients with more severe conditions appears to have a much more pronounced impact on them psychologically than physically [4].

CP and physical impact

Numerous studies have examined the impact of CP on the daily life of the sufferer, drawing attention to the strong association connecting this condition with lessened physical activity [29,30]. It is evident that severity, time span, and/or spot of pain have considerable impact on somatic capabilities of the individual. These factors appear to reduce the physical activity and are possibly also a leading factor in disability, and this could potentially influence different aspects of the patient’s day to day life [31]. In a survey study that was conducted within Europe, most of the participants had experienced limitations in various aspects (diminished ability to carry out physical exercises, simple walking, carrying out domestic tasks, lack of interest in social activities, etc.) [4,8].

Interestingly, it is not uncommon for CP patients to over-evaluate the extent of their activities meaning that, in cases that they feel the level of their activity is adequate, they are likely to feel demotivated and lose interest to change their attitudes in terms of physical activity [32]. An aim or eagerness to make adjustment appears to be an important determinant of future behavioral alterations based on the suggestions of current theoretical models [8]. This perhaps is the main reason why it is essential for CP patients to be aware of their actions as a way for them to manage to incorporate a healthier lifestyle, increase their daily level of physical activity, and possibly to lessen the potential occurrence of pain related disability.

CP, social and work related impact

The impact of pain in the workplace is a crucial matter that needs to be examined in CP sufferers. Several studies conducted in various parts of the world demonstrate that, more often than not CP patients experience work related complications that prevent them from consistent presentism at work. It is not unheard of for CP patients specially, those who suffer from more advanced diseases to experience frequent change of occupation, and possibly also loss of employment due to unmanageable symptoms of their pain [8,11,30,33-36]. In Spain, 24.4% of CP patients had appealed for sick leave in 2014 and

12% had left their jobs voluntarily or were asked to leave due to their chronic conditions [37]. Furthermore, in circumstances that a CP patient voluntarily chooses to not take the necessary time off from work to rest there will be an inevitable decrease in their effectiveness and productiveness [4,32]. An outcome that will be additionally intensified as the degree of pain becomes more severe [4,36]. Another work related issue is that, in some circumstances partner and relatives of the CP patient may also attempt to prevent the patient from going back to work. Hence, patient's family may every so often have a role in discouraging the patient from returning to work mostly due to apprehensiveness related to reoccurrence or advancement of pain or the occurrence of a new work-related impairment.

CP and families

Now let's take a look into the relationship between the experiences of chronic pain within the dynamic of the patient's family. Aside from all the potential physical and social constraints, CP evidently appears to have consequential impact on the social interactions and relationships of the sufferer. As expected, at least half of the CP patients report experiencing impediments in terms of social activities and family relationships [38]. Correspondingly, roughly half of CP patients seem to have minimal communications with other members of their family as an outcome of their pain symptoms [8]. Based on the findings of various research it has been reported that, family and partner of individuals with chronic pain disorders are likely to feel helpless, distanced, emotionally tormented and isolated. What's more, their emotional responses can directly impact the dynamic of the relationship they have with the chronically unwell member of the family [39,40]. The drastic alteration of roles that are often experienced by the members of the family will additionally impact the dynamic of the family [41]. A survey of 4611 individuals with chronic non-cancer pain conducted by Smith et al. [42], has reported clear adverse connections between chronic pain and employment, basic day to day activities, and all measurable dimensions of a person's general health. Clearly, chronic pain has immense impact on all dimensions of an individual's life [43].

THE EXEMPLARY PILOT STUDY

Aim

The aims of this small exemplary pilot study were to explore the essence of chronic physical non-cancer pain disorder, and to explore the potential impact of chronic physical non-cancer pain disorders on the sufferers. Additionally, this study integrated the views, concerns, and experiences of the participants to help further examine the theoretical findings that were collected via the review of literature.

Method

Data was collected through structured surveys. The questionnaires were of approximately 10–15 minutes duration. Participants were asked to explain about the potential challenges and limitations that their chronic pain disease has created for them. Surveys consisted of questions aiming to understand the

various repercussions of chronic physical non-cancer pain on the suffering individual. To be included in the research, participants were required to be over the age of 18, and currently receiving medical treatment for any type of chronic pain not related to cancer or terminal illness.

Findings

- Participants (n=30),
- Period of diagnosis ranging from 2 years to 40 years,
- Participant's age ranged between 18 to 68 years,
- 10 of the 30 respondents were men.

Participants' diagnosis

- Juvenile rheumatoid Arthritis,
- Rheumatoid arthritis (RA),
- Failed back syndrome (Post laminectomy),
- Penile pain prostatitis (Urogenital pain),
- Herniated disc in the back, neck and knee,
- Fibromyalgia,
- Chronic fatigue syndrome,
- Chronic bronchitis,
- Shoulder bursitis,
- Dysmenorrhea,
- Endometriosis cyst,
- Sciatica pain,
- Migraine,
- Pain in the Scapular, leg, muscles, arm, elbow, lower back, entire back, chest, heel, and wrist.

Ineffectiveness of treatment techniques

What's so clear is that, majority of patients most have hoped to feel better post obtaining a proper and correct diagnosis. But, that does not seem to be the case with CP ailments. Several participants have talked about experiencing disappointment post diagnosis. Patients have stated that, the only solution and management method suggested to them is taking pain killers. Which makes them feel unwell and dizzy. And, has adverse effects on their productivity and energy level throughout the day. Based on the findings of the sample study and the extensive review of literature it appears that, in majority of the cases the severity of pain and intensity of pain related symptoms are directly connected with consumption of prescribed painkillers. For as long as we know, the use of medication has been the most common method of treatment for the management of chronic pain. Taking into considerations, the amount of analgesic medications that are globally available, the scope of categories of these medications, their possible psychoactive elements, the potential risk of occurrence of interactions and chemical accidents between different categories of drugs, and the overall cultural issues associated with the administration or misuse of drugs, it is no wonder why CP patients have many issues related to their use of medications. Data collected from various studies that have made use of urine toxicology screens report that, 36% of patients with chronic non-cancer pain disorders appear to be non-adherent with their prescription regimens [44]. Clinical

experiences propose that, CP patients too often do not take their prescribed medications as precisely as advised, every so often they may take more, and they may also attempt to take less or take it inconsistently. It can be concluded that, patients' issues related to use of prescribed medications play a major part in their non-precise administration of their drugs.

GPs lack of training in diagnosing CP diseases

Obtaining the correct diagnosis has been discussed as a major challenge. Several of the participants have discussed experiencing uncertainty and confusion throughout their long journey of being misdiagnosed till they finally obtain a correct diagnosis. Patients have discussed that, it is not unlikely for patients to seek diagnosis from several doctors and spend several years just so they can obtain a correct and definite diagnosis. International association for the study of pain has reported that, approximately 20% of the world's population are currently impacted by chronic pain still, for whatever reasons not that many physicians are trained and specialized in the field of pain medicine world-wide [45].

Majority of chronic pain patients seek pain related treatment from primary care providers. The first concern that comes to mind is that, primary care physicians (PCPs) are not required or obliged to achieve formal training related to the management and treatment of chronic pain disorders. First and foremost, this study is in no way intending or attempting to doubt or question the medicinal knowledge, clinical training, or abilities of PCPs. As they are expected to have acquired a wide range of knowledge and skills throughout the course of their training. Though, the main challenge in regard to a primary care physician's treatment of a chronic pain disease is that, they are not likely to have the necessary skills, knowledge and experience to treat specific diseases such as chronic pain diseases. Due to the fact that, the sphere of their education and clinical expertise is very dissimilar to the training that is expected to be attained by a specialist or expert in a specific domain of medical practice (e.g., a chronic pain specialist). In spite of the fact that, treatment and management of pain is perceived to be the most important aim of primary care providers it is difficult to deny the strong evidence and confirmation that suggests, pain is not being given adequate care and supervision in practically all aspects and stages of medical learning [46]. In fact, many studies suggest that, management and handling of pain is evidently not being adequately instructed to medical practitioners, doctors in training and health care providers. Furthermore, frustrated chronic pain sufferers are unlikely to talk nicely of their doctors. The relationship between patients and primary care providers is reported to be unfriendly, not so pleasant, and certainly not so satisfactory. It almost seems that the doctor visit is not something that patients necessarily look forward to as it seems almost like a burden, just a task to be completed for the sake of formality and possibly receiving refills. It appears that, majority of patients do not necessarily trust their care providers, as it seems that they often feel a severe lack of empathy, interest and understanding from their primary care providers. Patients don't believe their primary care providers have the necessary knowledge to handle them. In addition, brief and quick doctor appointments are reported as uncomfortable, too fast, and not

enough time to allow for personal connections or initiate friendly interactions. Patients often feel rushed and stressed and they don't feel that they can ask many questions.

Self-awareness and self-acquired knowledge are key factors

Awareness of the self is reported to be perceived as an essential factor, and is associated with earlier diagnosis. The change in self-awareness appears to provide the patients with greater ability to understand their bodies' signs and how they feel about themselves and their wellbeing. Self-education, familiarity, and being well informed appear to be crucial components in obtaining early diagnosis, experiencing less psychological distress, and having much better treatment outcomes. It appears that, CP patients with longer periods of diagnosis have delineated that, their new found awareness of their personal needs and their potential constraints has helped them manage to learn their new limits and new boundaries. In addition to that, they have managed to incorporate their new limits into their lives by means of achieving substantial knowledge of the self. As it is not uncommon for chronic pain sufferers to endure agony in terms of finding the correct diagnosis and proper methods of treatment. It is not unheard of for CP patients to experience feeling lost, frustrated, disappointed, and confused while in the midst of exploring numerous physicians, and being passed around by being referred from one GP to another one. Therefore, self-education, being familiar and well informed appears to be essential components in obtaining early diagnosis and possibly experiencing a less stressful journey. It is stated that, chronic fatigue syndrome is often misdiagnosed and/or late diagnosed perhaps due to its ambivalent nature. It truly is concerning and frightening to wait several years just to receive a correct diagnosis. All the time, money and energy that could be used to help the sufferers in terms of treatment to stop the progression of the disease will be lost. Additionally, it is described that chronic diseases that do not show signs on blood test are a lot more challenging to be diagnosed.

Accepting one's limited capacity

Acceptance of the new body and understanding the new limits are beneficial for patients in terms of helping them with incorporation and adjustment. Some of the participants have discussed that, at the early stages of their diagnosis they had experienced a lot of stress, fatigue, physical pain, emotional discomfort, resentment, and a severe lack of ability to cope with their illness and illness related symptoms. Though, throughout the course of the time patients have managed to come into peace and acceptance with their new normal. Being diagnosed with a chronic illness often occurs unexpectedly, and it usually has drastic impact on various aspects of the patients' lives including their personality and their outlook on life [47]. Patients are likely to reassess their ways of living and consequently, they may make alterations in regard to their priorities. Generally, post diagnosis with a chronic disease patients are likely to experience mixed feelings and various negative emotions although, this phase is subjective in nature and cannot be predicted, as it is experienced and processed differently by each individual. Some patients receive their

diagnosis without too much difficulty; they manage to accept their new condition with a strong determination to fight with potential disability. And, some patients may feel so immensely traumatized due to their diagnosis that may not be able to manage to come into an understanding with their new condition [47]. That being said, acceptance does take time and is not supposed or expected to happen immediately after a major diagnosis, and it depends on various factors e.g., environment, family support, social relationships, perceived self-efficacy, etc. Acceptance of a chronic disease is of significant importance as it is beneficial for the patients and their loved ones in various ways. It can accommodate the patients to manage to maintain the normalcy of their lives, and possibly continue to carry out their daily duties regardless of all the potential constraints and difficulties associated with health and normal functioning [47]. Current research propose that, greater degree of acceptance post diagnosis is connected with more positive attitudes among patients, more likelihood that they'd trust their treatment regimens and they will be more likely to be cooperative by taking part in the treatment process [47-52].

Making priorities and setting boundaries

Several of the participants particularly, those who have lived with their illness for a much longer period of time have talked about setting boundaries and making priorities. Evidently, the progressive nature of chronic ailments will not allow the patients to be the same person and live the same lifestyle that they may have used to live prior to their diagnosis. Consequently, it is essential for patients to come into understating with their new identities post diagnosis, and possibly try to redesign their lives around their "new normal". It is essential for CP patients to learn to feel positive in regard to their level of activity, and capabilities post diagnosis regardless of all the potential limitations and barriers that they may experience as an outcome of their chronic illness. Many of the participants in this study have been living with their illness for several years, with 40 years being the longest period since diagnosis. In other words, they have come into a correct realization of their present self by means of obtaining knowledge of their new boundaries, strengths, weaknesses, and available resources (e.g., supportive partner, caring family members, supportive friends, available monetary means, etc.). It appears that, a successful management of learning the new limits among CP patients may also be an outcome of alterations in their ways of thinking. Through great examination and observation of their environment and modification of their thinking patterns they may manage to fully incorporate their 'new self' into the core of their characters, and by doing so they can manage to not push themselves too much by respecting their boundaries, and most importantly they may manage to not feel too overwhelmed when they face difficulties (e.g., when they feel a lack of support, days that pain is more severe, days that they cannot be productive, etc.).

Importance of emotional and social support

Receiving love and support from family and partner are discussed as positive, beneficial and very much helpful. Being emotionally balanced seems to be an important factor, as balance of the psyche is very much connected with the

experience of health related quality of life post diagnosis with a chronic pain disease. Participants have discussed that, having supportive family members who are understanding and nonjudgmental toward their needs, and are willing to step up and take over some of the responsibilities and duties of the patient is comforting and of great significance for them. Perceived or received social support appears to have significant impact on the association between pain and suffering. It appears that CP patients who believe to have high levels of social support and marital satisfaction are less likely to suffer from anguish or severe pain [53,54]. Based on the current theoretical concepts related to stress and coping, perceived social support appears to increase psychological well-being, and specially, lessens the potential impact of life stressors [55]. Perceived supportive relationships seem to lessen the occurrence of negative states of mind directly, and via diminishing the potential adverse outcomes of pain on emotional state. During an study conducted by Feldman et. al. [56], in the following days post participation, respondents continued to report greater extent of received and perceived social support, they all appeared to have less indication of depression, lessened anger, and generally less negativity in terms of mood. Their outcomes demonstrate beneficial impact of social support for CP patients. Additionally, perceived social support also controlled the impact of pain on overall negative mood and depressed mood. Meaning that, the overall effect of pain on negative mood and depressed mood was decreased at the time that the participant reported having satisfactory supportive relationships. The findings simply demonstrate the importance of the responsibility and the beneficial impact that family members and social groups could possibly offer to CP patients in terms of assisting them to manage their conditions. Current studies suggest that, those CP patients who acquire greater social support not only are less likely to suffer from depression but, they may also experience less severe types of pain, and this will in turn lessen the occurrence of functional impairment, and will consequently improve functional status.

DISCUSSION

This study believes that, due to the complex nature of chronic pain diseases and the unpredictable and highly potent nature of the opioid prescription drugs that are commonly being used as a method of pain management to treat pain it is rather crucial for CP patients to seek pain related treatment from specific pain specialists particularly, one specialist that can possibly get to know them on a personal level. As this study believes, the most important factor that in many cases appears to be overlooked by many patients and practitioners is to stick with one specific pain specialist throughout the course of the treatment.

This study would like to assert, personal elements, history of patient, family background, whether a patient lives solo or if she or he has a partner and/or family members that could look after them should play significant parts in the management of pain and doctors' decisions with regard to recommending and prescribing medications. The recent escalations related to the commonality of opioid drugs have substantially added to the old problem of chronic pain by making the treatment more concerning and more complicated than ever. Due to the nature

of the opioid drugs and the potential misuse and abuse that seem to occur quite a lot specially, among patients with more severe diseases, primary care providers are unlikely to be able to correctly evaluate chronic pain [57]. As this study has attempted to draw attention to, it is no top secret that, PCPs and GPs do tend to misdiagnose, over-evaluate and under-evaluate the nature and severeness of physiological oriented chronic pain diseases quite a lot. As discussed by several participants throughout the surveys, in many cases it may take up to several years for a patient to finally obtain a correct diagnosis. The main problem is that, as we know, chronic pain (CP) is inclined to grow and develop throughout the course of the time consequently, it's progressive nature will additionally increase the possibility of advancements of various fundamental pathologies and associated complications. In circumstances that, a chronic pain disease is left undetermined, under-assessed, and unmanaged the neuroplastic alterations that appear to subscribe to the advancement of pain are likely to become irreversible, and in the long term unresponsive to treatment. All facts and aspects taken into account, it is very much crucial for the health care providers as well as the chronic pain patients to be well concerned about the urgency and importance of the early diagnosis, and potential benefits of starting the treatment recommendations as early as possible. The outrageously high widespread presence of CP, and it's potential medical and non-medical outcomes simply represent the importance of precise and proper decision making practices of the health care practitioners. CP evidently has concerning outcomes for patients as well as for their loved ones, and the dynamic of their social and professional relationships, creating a drastic decline on the experience of health related quality of life for patients as well as their family. Therefore, there certainly is an urgent need for us to draw attention to a necessary demand to acquire an extensive and multidisciplinary converge in an attempt to help ameliorate the chronic pain patients' circumstances. The evaluation of the impact of chronic pain disorder on patient's day to day activities and it's possible adverse outcomes on patient's family and work environment as presented in the examination of the results presented in this study, should be predominately received and reviewed as measures to help enhance the experience of CP patient and family's health related quality of life post diagnosis. According to the results of the current research, it can be suggested that greater familiarity with pain related symptoms can considerably ameliorate the extent of health related quality of life among chronic pain patients.

CONCLUSION

Evidently, chronic pain (CP) is a major health problem impacting the suffering individuals as well as their loved ones. Despite its concerning wide-spread presence, longevity, potential co-morbidity with mental health disorders, and destructive nature the currently available methods of treatment are evidently not adequate. As this study has aimed to examine whys and wherefores surrounding the topic of chronic pain diseases are truly concerning and require more research. For the purpose of attaining better outcomes and much easier pathways for the suffering patients and their loved ones this study would like to draw special highlights on the essential importance of

awareness and education for the CP patients as well as their partner and family. Furthermore, this study believes that, application of an interdisciplinary approach for the treatment and management of chronic physical non-cancer pain is essential.

LIMITATIONS

The small size of the sample has been at the cost of practicality of the extent of the scientific scope to which these findings can be generalised to the chronic pain population at large.

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