Relationship between Pain Catastrophizing and Perceived Wellness among Chronic Pain Patients

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ABSTRACT. One of the problems being addressed in the care of chronic pain patients is pain catastrophizing, an exaggeration of the threat of pain that results in a distorted perception of patients' quality of life. Literature has yet to explore the relationship between pain catastrophizing and the perceived wellness of chronic pain patients. This descriptive-correlational study explores the relationship between the pain catastrophizing of chronic pain patients and their degree of perceived wellness. Historical patient charts in a local physical therapy clinic were used to gather data. Male patients are significantly more likely to be non-catastrophizers. Clinically significant pain catastrophizing scores strongly correlated to lower perceived wellness [rs(33)= -0.626, p=0.000], while non-catastrophizing scores only moderately correlated to higher perceived wellness [rs(54)= -0.520, p=0.000]. Both correlations were statistically significant. The concomitance between psychosocial perceptions and chronic pain necessitates the creation of a pain counseling program by pain specialists and counselors to holistically understand and treat chronic pain patients.

1.0. Introduction

Chronic pain patients have their perception of pain (Fillingim, 2017) and own cognitive processes on their experience, and these can make them either catastrophizers or non-catastrophizers (Lonczak, 2020). Similarly, chronic pain patients (Jensen et al., 2018), having unique perceptions of pain, may have unique perceptions of their quality of health and illness. Some people may have some kind of disorder, but they may have a different view of their health in general.

Pain catastrophizing is a cognitive distortion where one overrates the threat or experience of pain (Lonczak, 2020) and can lead to negative outcomes in health (Suso-Ribera et al., 2017). Consequently, the care for chronic pain patients is made to be multidisciplinary (O'Sullivan et al., 2019), as pain catastrophizing can result in a lack of well-being and a distorted perception of their quality of life (Suso-Ribera et al., 2017).

In the province of Negros Occidental, health counseling ranks third as a challenge to improve patient satisfaction (Gerzon & Salugsugan, 2020), but it does not focus on improving wellness. For Filipino healthcare providers in the field of pain, pain clinicians must be wary of their diagnosis and perspective in seeing the kind of patient they have, like the type of pain catastrophizing, so that they may apply the appropriate treatment (Calimag, 2020).

Although pain catastrophizing has been studied to relate to health outcomes, limited literature exists on the association between pain catastrophizing and chronic pain patients' perceived wellness. This bridges an evidence gap for pain specialists to consider that a patient's pain catastrophizing influences their perceived wellness, and vice versa. This study provides pain counselors or therapists to realize that personal perceptions can influence their patients' chronic pain condition and that these perceptions are also necessary for clinical assessment.

This study determined the type of pain catastrophizing among chronic pain patients in a private physical therapy clinic between September 2022 - February 2023. Similarly, it reported the patients' degree of perceived wellness and psychological, emotional, spiritual, social, physical, and intellectual wellness. The findings of this study substantiated the creation of a pain counseling program in a private therapy clinic in Bacolod City.

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2.0. Framework of the Study

This study theorizes that pain catastrophizing has a relationship with their perceived wellness. This is supported by the biopsychosocial theory by Engel (1977), as cited in Smith (2002), and allows a person to examine human conditions through a holistic approach. This theory explains that the chronic pain of patients is a product of biological, psychological, and social factors that contribute to one's recovery or illness (O'Sullivan et al., 2019; Kusnanto et al., 2018).

In the context of this study, pain catastrophizing and perceived wellness allow a physical therapist or a pain counselor to practically confirm that pain conditions are not just biological, anatomical, or physiological alone but rather have psychosocial components that must be addressed. The concepts of pain catastrophizing and perceived wellness are elements under the psychosocial aspects (psychological and personal-social) of the biopsychosocial theory (Kusnanto et al., 2018). Through the perspective of this theory, the author can note that a chronic pain patient's perception of their wellness may be influenced by their catastrophizing thoughts and should be considered in understanding their whole case.

3.0. Methodology

Research Design. This study utilized a quantitative descriptive-correlational design. As a descriptive-correlational study establishes the relationship between variables, this study established the relationship between pain catastrophizing and perceived wellness. Furthermore, a correlational design establishes the relationship between pain catastrophizing and age, sex, family monthly income, and the number of therapy sessions.

Participants, Research Locale, Ethics. This study surveyed 91 chronic pain patients in a private physical therapy clinic in Bacolod City, Negros Occidental, Western Visayas, from September 2022 to February 2023. Patient identification (ID) numbers were encoded in a spreadsheet program that randomly generated the charts to be included in this study. This study followed the Philippine Health Research Ethics Board (PHREB) ethical guidelines, emphasizing informed consent and confidentiality.

Data Collection and Survey Instrument. Research enumerators extracted data from existing medical charts in a local physical therapy clinic. These data contain demographics and accomplished outcome measures accomplished during the initial evaluation of the research participants.

The Pain Catastrophizing Scale (PCS) by Sullivan et al. (1995) was used to quantify pain catastrophizing. The PCS is presently a public forum instrument; as such, no costs are associated with its use or duplication (Sullivan et al., 2001). It was found to have high concurrent validity (r = 0.72) as it relates well with other physical therapy outcome measures. Furthermore, it has been found to have good test-retest reliability (ρ = 0.88) and internal consistency (α = 0.92) (Wheeler et al., 2019). It also had an excellent internal consistency (α = 0.93) for local reliability. A score greater than or equal to 30 indicates clinically relevant levels of pain catastrophizing, while scores less than 30 indicate non-catastrophizing of pain.

The Perceived Wellness Scale by Adams et al. (1997) is a standard outcome measure in the public domain that quantifies the degree of wellness of an individual. It represents a person's perceived quality of life. Its domains are psychological, physical, emotional, spiritual, social, and intellectual wellness. It has acceptable concurrent validity (r = 0.76) and acceptable internal consistency (α = 0.87) (Kaveh et al., 2016). It also had an excellent internal consistency (α = 0.96) for local reliability.

4.0. Results and Discussion

Pain Catastrophizing among Chronic Pain Patients

The trend of clinically relevant pain catastrophizing moves towards females (f=26, 51.0%), younger ages [15-24 years old (f=10, 41.7%), and 25-54 years old (f=21, 38.2)], belonging to higher income categories of family monthly income [upper middle class (f=5, 62.5%), high income (f=2, 100%), and rich (f=3, 75.0%)], and have 1-3 sessions of physical therapy [1 (f=7, 41.2%), 2 (f=10, 50.0%), and 3 (f=9, 37.5%)]. Table 1 below summarizes chronic pain patients' pain catastrophizing by age, sex, family monthly income, and the number of therapy sessions. On the other hand, non-catastrophizers of pain take up a greater proportion of chronic pain patients. They comprise the majority of all age groups, the majority of men, the majority of lower income brackets (poor to middle class), and the majority of all sessions.

More working individuals with chronic pain went to the clinic for their condition. This explains how the data has younger ages compared to older ones. The family monthly income data also shows that the larger number of chronic patients

belong to the first three categories. Most chronic pain patients show that they receive therapy for about 1-4 sessions only.

Table 1
Pain catastrophizing among chronic pain patients

Variable	Catastrophizing		Non-Catastrophizing		Total
	f	%	f	%	
Age					
15-24 years (Early working age)	10	41.7	14	58.3	24
25-54 years (Prime Working age)	21	38.2	34	61.8	55
55-64 years (Mature Working age)	3	33.3	6	66.7	9
65 years and over (Elderly)	1	33.3	2	66.7	3
Sex					
Male	9	22.5	31	77.5	40
Female	26	51.0	25	49.0	51
Family Monthly Income					
Poor (Less than ₱9,100)	3	75.0	1	25.0	4
Low Income (Between ₱9,100 to ₱18,200)	5	23.8	16	76.2	21
Lower Middle Class (Between ₱18,200 to ₱36,400)	14	32.6	29	67.4	43
Middle Class (Between ₱36,400 to ₱63,700)	3	33.3	6	66.7	9
Upper Middle Class (Between ₱63,700 to ₱109,200)	5	62.5	3	37.5	8
High Income (Between ₱109,200 to ₱182,000)	2	100.0	0	0.0	2
Rich (At least ₱182,000 and up)	3	75.0	1	25.0	4
Number of therapy sessions					
1	7	41.2	10	58.8	17
2	10	50.0	10	50.0	20
3	9	37.5	15	62.5	24
4	4	28.6	10	71.4	14
5	3	37.5	5	62.5	8
6	2	25.0	6	75.0	8
Whole	*35*	*38.5*	*56*	*61.5*	*91*

Degree of Perceived Wellness among Chronic Pain Patients

As a whole, chronic pain patients report a slightly high degree (M=3.70, SD=0.98) of perceived wellness. They also have a slightly high degree of psychological (M=3.88, SD=1.08), social (M=3.89, SD=1.04), spiritual (M=3.90, SD=1.18), and intellectual (M=3.78, SD=1.14) wellness. In contrast, chronic pain patients have a slightly low degree of emotional (M=3.48, SD=1.20) and physical (M=3.46, SD=1.35) wellness. Tables 2A. and 2B below summarizes the degree of perceived wellness of the study.

Chronic pain patients in this study have a slightly high degree of psychological and social wellness because they most likely receive psychological and social validation from friends and relatives (National Library of Medicine, 2021). According to Adams and Salomons (2021), psychological and intellectual wellness are supposedly low among chronic pain patients. However, this is most likely because their study is composed of Canadians. Being more resilient, Filipinos tend to be optimistic in the face of a medical condition (Camitan & Bajin, 2021); hence, a slightly high degree of psychological and intellectual wellness was found in this study. Chronic pain patients also tend to move towards spirituality (Hasenfratz et al., 2021), and culturally, Filipinos tend to be strong in their faith (Macaranas, 2021). This explains the slightly high degree of spiritual wellness among the patients in this study.

Chronic pain patients have a slightly low degree of physical and emotional wellness, as chronic pain reduces physical function and emotional well-being (Suso-Ribera et al., 2017; Zhaoyang et al., 2020; Petrini & Arendt-Nielsen, 2020). These patients seemed to recognize these and could report their perceptions as other studies would expect them to report.

Those 65 years and older report a high degree of psychological wellness (M=4.39, SD=0.92) and a low degree of physical wellness (M=2.56, SD=1.40). These findings are expected as age naturally comes with a sense of accomplishment (Orenstein & Lewis, 2022) but also degeneration of body structures and physiology. Bae et al. (2017) and Zhaoyang et al. (2020) also reported that older people have reduced physical well-being.

Table 2A
Degree of Perceived Wellness

Variable	Psychological			Emotional			Social			Physical		
	M	SD	Int	M	SD	Int	M	SD	Int	M	SD	Int
Age												
15-24 years	3.96	0.89	SHD	3.51	1.39	SHD	4.21	0.77	SHD	3.60	1.11	SHD
25-54 years	3.76	1.15	SHD	3.39	1.13	SLD	3.67	1.09	SHD	3.42	1.47	SLD
55-64 years	4.20	1.16	SHD	3.83	1.29	SHD	4.28	1.24	SHD	3.65	1.17	SHD
65 years and over	4.39	0.92	HD	3.83	1.01	SHD	4.33	0.50	SHD	2.56	1.40	LD
Sex												
Male	4.17	0.91	SHD	3.81	1.22	SHD	4.14	0.96	SHD	3.77	1.59	SHD
Female	3.64	1.15	SHD	3.23	1.14	SLD	3.70	1.07	SHD	3.22	1.08	SLD
Family Monthly Income												
Poor	3.04	0.34	SLD	3.00	1.25	SLD	3.38	1.00	SLD	3.50	0.93	SLD
Low Income	3.98	1.09	SHD	3.52	1.20	SHD	3.93	1.04	SHD	3.75	1.90	SHD
Lower Middle Class	4.09	0.94	SHD	3.70	1.18	SHD	4.13	0.91	SHD	3.68	1.06	SHD
Middle Class	4.00	1.20	SHD	3.48	1.44	SLD	3.85	0.96	SHD	3.19	1.39	SLD
Upper Middle Class	3.62	1.14	SHD	3.19	1.26	SLD	3.73	1.32	SHD	2.75	1.11	SLD
High Income	2.00	0.00	LD	2.17	0.00	LD	1.83	0.47	LD	2.00	0.47	LD
Rich	3.04	1.61	SLD	2.67	0.49	SLD	3.17	1.11	SLD	2.38	0.25	LD
Number of Therapy Sessions												
1	4.05	0.90	SHD	3.66	1.16	SHD	4.00	1.00	SHD	3.70	1.24	SHD
2	3.36	1.10	SLD	3.14	1.22	SLD	3.47	1.01	SLD	3.46	1.90	SLD
3	3.95	1.09	SHD	3.67	1.33	SHD	3.87	1.12	SHD	3.56	1.11	SHD
4	4.54	0.68	HD	3.58	1.20	SHD	4.32	0.62	SHD	3.32	1.28	SLD
5	3.77	1.36	SHD	3.13	1.01	SLD	4.10	1.29	SHD	3.31	0.96	SLD
6	3.52	1.17	SHD	3.58	1.14	SHD	3.85	1.15	SHD	3.06	1.28	SLD
Type of Pain Catastrophizing												
Catastrophizer	3.09	1.14	SLD	2.65	0.91	LD	3.13	1.07	SLD	2.70	0.80	SLD
Non-Catastrophizer	4.37	0.68	HD	4.01	1.07	SHD	4.37	0.67	HD	3.94	1.41	SHD
Whole	*3.88*	*1.08*	*SHD*	*3.48*	*1.20*	*SLD*	*3.89*	*1.04*	*SHD*	*3.46*	*1.35*	*SLD*

Mean Scale: 1.00 – 1.82=Very Low Degree (VLD), 1.83 – 2.65=Low Degree (LD), 2.66 – 3.50=Slightly Low Degree (SLD), 3.51– 4.34=Slightly High Degree (SHD), 4.35 – 5.17=High Degree (HD), 5.18 – 6.00=Very High Degree (VHD)

Women report a slightly low degree of perceived wellness (M=3.50, SD=0.96), while men report a slightly high degree of perceived wellness (M=3.96, SD=0.95). This confirms an implication of a cultural or gender role expectation for men, where they are expected to be more resilient and optimistic in life (Xiao et al., 2020). Men having a higher degree of perceived wellness than women support the findings of Matud et al. (2019) and Yalcin-Siedentopf et al. (2021).

Upper-middle-class (M=3.39, SD=1.04) and rich (M=2.95, SD=0.90) income earners report a slightly low degree of perceived wellness. Furthermore, consistently throughout the domains of perceived wellness, high-income earners (M=2.02, SD=0.13) report a low degree of perceived wellness. Among chronic pain patients, as income increases, there seems to be a pattern of reducing wellness. This can be because they were used to a comfortable lifestyle, but having chronic pain has disturbed their normal way of living. A lack of positive expectations in life, self-esteem, purpose in life, social support, and intellect have led high-income earners to lack perceived wellness. Higher-income populations have more cases of anxiety and depression (Shahbazi et al., 2022), which can result in the presentation of pain catastrophizing among high-income chronic pain patients.

Chronic pain patients with two physical therapy sessions have a slightly low degree of perceived wellness (M=3.36, SD=1.07). They also have a slightly low degree of perceived wellness throughout all domains of perceived wellness. This is because the second session includes the progression of exercises that reduce their good expectations for recovery. Also, those that finish two sessions are mostly pain-catastrophizing patients. On the other hand, the rest of the sessions report a slightly high degree of wellness. Collectively, finishing more physical therapy sessions demonstrate patients reporting a slightly high degree of wellness.

Catastrophizers (M=2.92, SD= 0.86) have a slightly low degree of perceived wellness, while non-catastrophizers (M=4.19, SD=0.70) have a slightly high degree of perceived wellness; and consistently across different domains of perceived wellness, catastrophizers scored lesser

Table 2B
Degree of Perceived Wellness

Variable	Spiritual			Intellectual			Perceived Wellness		
	M	SD	Int	M	SD	Int	M	SD	Int
Age									
15-24 years	4.11	1.13	SHD	3.72	1.10	SHD	3.85	0.81	SHD
25-54 years	3.79	1.20	SHD	3.75	1.19	SHD	3.58	1.05	SHD
55-64 years	4.00	1.31	SHD	4.11	1.12	SHD	4.01	1.06	SHD
65 years and over	4.11	0.69	SHD	3.94	0.96	SHD	3.86	0.77	SHD
Sex									
Male	4.20	0.96	SHD	3.95	1.17	SHD	3.96	0.95	SHD
Female	3.67	1.28	SHD	3.66	1.12	SHD	3.50	0.96	SLD
Family Monthly Income									
Poor	3.00	1.16	SLD	3.54	1.12	SHD	3.25	0.88	SLD
Low Income	3.92	1.12	SHD	3.76	1.17	SHD	3.75	1.10	SHD
Lower Middle Class	4.16	1.07	SHD	3.97	1.07	SHD	3.92	0.85	SHD
Middle Class	4.11	1.30	SHD	3.93	1.25	SHD	3.76	1.01	SHD
Upper Middle Class	3.56	1.19	SHD	3.52	1.30	SHD	3.39	1.04	SLD
High Income	1.92	0.12	LD	2.17	0.24	LD	2.02	0.13	LD
Rich	3.21	1.42	SLD	3.21	1.24	SLD	2.95	0.90	SLD
Number of Therapy Sessions									
1	4.09	1.03	SHD	3.95	0.92	SHD	3.83	0.98	SHD
2	3.36	1.23	SLD	3.50	1.17	SLD	3.36	1.07	SLD
3	3.95	1.29	SHD	3.76	1.19	SHD	3.76	1.01	SHD
4	4.38	0.70	HD	4.08	1.18	SHD	4.04	0.73	SHD
5	3.96	1.24	SHD	3.65	1.35	SHD	3.65	1.02	SHD
6	3.85	1.39	SHD	3.81	1.24	SHD	3.60	1.05	SHD
Type of Pain Catastrophizing									
Catastrophizer	3.01	1.19	SLD	2.97	1.05	SLD	2.92	0.86	SLD
Non-Catastrophizer	4.46	0.75	HD	4.29	0.87	SHD	4.19	0.70	SHD
Whole	*3.90*	*1.18*	*SHD*	*3.78*	*1.14*	*SHD*	*3.70*	*0.98*	*SHD*

Mean Scale: 1.00 – 1.82=Very Low Degree (VLD), 1.83 – 2.65=Low Degree (LD), 2.66 – 3.50=Slightly Low Degree (SLD), 3.51– 4.34=Slightly High Degree (SHD), 4.35 – 5.17=High Degree (HD), 5.18 – 6.00=Very High Degree (VHD)

than non-catastrophizers of pain. Catastrophizers have lesser perceived wellness than non-catastrophizers because they tend to be less physically fit, irrational in thinking, and have naturally poor mental well-being. Suso-Ribera et al. (2017) and Petrini and Arendt-Nielsen (2020) support the claim of this study that the wellness of catastrophizers of pain is relatively lower than non-catastrophizers of pain.

Relationship between Pain Catastrophizing and Demographics

There was no significant relationship between pain catastrophizing and the following variables: age [$\chi^2(2) = 0.239$, $p=0.887$], family monthly income [$\chi^2(4) = 8.231$, $p=0.083$], and the number of therapy sessions [$\chi^2(5)=2.382$, $p=0.794$]. There was a significant relationship between pain catastrophizing sex [$\chi^2(1) = 7.683$, $p=0.006$]. Table 3 summarizes the statistical analyses.

Though age, family monthly income, and the number of therapy sessions show a descriptive trend with pain catastrophizing, the statistical analyses show no statistically significant associations. This means that those trends are inconclusive. Only sex has significance when it comes to pain-catastrophizing behaviors, whereas male patients (77.5%) are more likely to be non-catastrophizers.

Pain catastrophizing has no significant predilection to sex. It is established that female patients who do pain catastrophizing are more sensitive to painful stimuli than men (Staikou et al., 2017) and are more likely to experience higher levels of pain due to the sex hormones of estrogen and progesterone in women (Basaria

et al., 2015). Likewise, men do not undergo the same levels of suffering when it comes to pain compared to women. Women are more likely to catastrophize since women have more tendencies for anxiety and depression than men (Hou et al., 2020). Naturally, women just tend to catastrophize more than men (Grundström et al., 2020).

Pain catastrophizing has no significant predilection to age. This is because old patients have blunted sensory function (Lautenbacher et al., 2017), while younger patients have lesser development in their somatosensory system. This study also agrees with the claims of González-Roldán et al. (2020), who found that age does not significantly relate to pain catastrophizing. Dong et al. (2020) and Zhaoyang et al. (2020) found that older patients tend to have risk factors for pain catastrophizing. However, the lack of these risk factors may explain why the older age group in this study find no tendency toward pain catastrophizing.

Pain catastrophizing has no significant predilection to the family's monthly income. The results of this study disagree with Yu et al. (2020), Dahlhamer et al. (2018), and Atkins and Mukhida (2022), where these studies find an inverse relationship between pain tendencies and family monthly income. However, in this study, the descriptive results found that having greater income seems to associate with more pain catastrophizing. This may be due to the number of participants, in contrast to those in the studies mentioned, where they have a larger sample size. Hence, this author claims this finding is inconclusive since no significant relationship was found based on the correlation testing.

Pain catastrophizing has no significant predilection to the number of physical therapy sessions. This means that pain catastrophizing is too unique of an experience for every person to say that the number of therapy sessions influences it. Additionally, these are physical therapy (PT) sessions, and PT only addresses the physical rehabilitation needs of chronic pain patients and cannot address or treat cognitive-behavioral problems.

Table 3
Relationship between pain catastrophizing and demographics

Variable	χ^2	df	p
Age	0.239	2	0.887
Family Monthly Income	8.231	4	0.083
Sex	7.683*	1	0.006
Number of therapy sessions	2.382a	5	0.794

Note: *the relationship is significant when $p \leq 0.05$

Table 4
Relationship Between the Pain Catastrophizers' and Non-catastrophizers' Scores and Perceived Wellness

Variable	rs	df	p
Catastrophizer			
Pain Catastrophizing x Perceived Wellness	-0.626**	33	0.000
Non-Catastrophizer			
Pain Catastrophizing x Perceived Wellness	-0.520**	54	0.000

Note: *the relationship is significant when $p \leq 0.05$

Relationship between Pain Catastrophizing and their Perceived Wellness

There was a significant relationship between the catastrophizers of pain and their perceived wellness [$r_s(33)=-0.626$, $p=0.000$]; and between the non-catastrophizers of pain and their perceived wellness [$r_s(54)=-0.520$, $p=0.000$]. Table 4 summarizes the correlation analysis for pain catastrophizing and perceived wellness.

Both relationships are negative, meaning that as one variable increases, the other is reduced. A strong correlation is found between

catastrophizers of pain and their perceived wellness, while a moderate correlation is found between non-catastrophizers pain and their perceived wellness. This implies that chronic pain patients with clinically relevant pain catastrophizing perceive their wellness to be at a slightly low degree. Indeed, pain catastrophizing influences the perception of wellness. Simply, exaggeration of the experience of pain can result in low perceptions of wellness. Contrariwise, non-catastrophizers, despite their condition, perceive a slightly high degree of wellness.

Both relationships can support the literature of Sturgeon et al. (2017), where it can be implied that pain catastrophizing is related to perceptions of a lower quality of life. Pain catastrophizers perceive that their pain hinders them from functioning daily (Suso-Ribera et al., 2017). Catastrophizers of pain have negative perceptions of their psychosocial life (Galvez-Sánchez et al., 2020).

5.0. Conclusion

There is a strong negative correlation between pain catastrophizing and perceived wellness among catastrophizers of pain. Hence, pain catastrophizing behaviors play a role in the perception of wellness among chronic pain patients under the biopsychosocial theory. The concomitance between psychosocial perceptions among chronic pain patients warrants the creation of a pain counseling program by pain specialists and counselors to holistically understand and treat chronic pain patients.

6.0. Limitations of the Findings

This study recognizes that its sample size, the six months of data gathering, and having only one source of medical charts are limitations of the findings. With a quantitative descriptive-correlational design, this study cannot claim the cause-and-effect relationship between pain catastrophizing and perceived wellness, and the depth of explaining the results of this study becomes limited.

7.0. Practical Application

Mental health professionals, which include psychologists and guidance counselors, may promote pain counseling to address unrealistic perceptions of chronic pain patients. As there is a strong correlation between pain catastrophizers and their perceived wellness, a pain counseling program may benefit their perceptions regarding their condition and wellness. In the case of pain physical therapists and physicians, this study suggests that they should watch out for behaviors characterizing pain catastrophizing and address these by referring to a mental health professional.

8.0. Directions for Future Research

To improve the sample size, a year of patient profiles would increase the generalizability of the study. Other pain clinics can also be involved in data gathering. An experimental setup may be implemented to study the cause-and-effect relationship between pain catastrophizing and perceived wellness. Lastly, a mixed-method setup may be implemented to improve the depth of analysis.

9.0. Declaration of Conflict of Interest

The author declares a conflict of interest as he is one of the owners of the clinic. This is addressed by not involving the researcher in the data-gathering process, including chart detachment and digital encoding, to avoid any accusations of data manipulation. The chronic pain patients under the care of the author were not counted as part of the study. The author does not determine which patient should be surveyed, as this power belongs to the clinic's attending physical therapists.

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