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Research Article

Statistical Analysis Of Impact Of Anxiety And Depression On Chronic Pain: Clinical Insights And Treatment Approaches

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ABSTRACT

The quality of life and functional ability of people are greatly impacted by chronic pain, which is defined as pain that lasts longer than three months. This is especially true for IT workers, who confront specific pressures connected to their line of work. This research examines the association between anxiety and depression and chronic pain among IT workers, with a particular emphasis on the effects of job pressure, working hours, and coping strategies. The research examined information from 280 IT workers obtained by a standardized 5-point Likert scale questionnaire, using a quantitative method with structural equation modeling (SEM) through AMOS. In order to measure anxiety and depression, the General Anxiety Disorders and Patient Health Questionnaire were used, along with the Coping Mechanism Scale for stress management techniques and the Brief Pain Inventory (BPI) for chronic pain. The results indicate that longer workdays and more job pressure are positively correlated with higher levels of anxiety and depression, which are correlated with higher levels of chronic pain. It is noteworthy that the influence of anxiety and depression on chronic pain was shown to be mitigated by efficient coping strategies. The findings emphasize that focused treatments are required to promote coping mechanisms and general well-being in IT workers, which will lessen chronic pain and increase productivity.

Keywords: Chronic Pain, Anxiety, Depression, Coping Mechanisms,IT Employees

Introduction

Chronic pain is characterized as pain that continues for a duration beyond three months (Toye et al., 2016). Although many cases of persistent pain are associated with underlying illnesses such as osteoarthritis, rheumatoid arthritis, or migraines, the exact reason is often not fully understood (Kim, 2011). Indeed, several specialists claim that chronic pain is an independent illness (Ramage-Morin, 2008). IT professionals globally often experience chronic pain, irrespective of the cause. Individuals with chronic pain often have illnesses such as anxiety and depression, which may adversely affect their quality of life, functional capacity, treatment outcomes, and healthcare costs (Gureje et al., 2008). Several studies have mostly focused on depression in patients with chronic pain. However, there is increasing data indicating that IT professionals not only feel pain but also anxiety, and that anxiety considerably increases their state of mind.Chronic pain might affect up to 50% of the working population (Harman &Ruyak, 2005). The rising prevalence of obesity and delayed retirement suggest that chronic pain among workers will likely rise in the future. Chronic pain is a common and persistent issue with few physical treatment options. A UK longitudinal research found that 79% of chronic pain sufferers experienced suffering 4 years after initial data collection. Consequently, many persons endure discomfort and continue their lives as best they can.

Strong correlations between symptoms of anxiety and depression and chronic pain (CP) have been shown by empirical study. When compared to those without CP, the proportion of patients with depression is twice as high (30% vs. 15%), and the incidence of anxiety disorders is 50% greater in CP patients (21% vs. 14%)(Benjamin et al., 2000).Additionally, there is a strong link between the lifetime prevalence of depression

and happenings of pain. Pain severity, the number of pain sites, and the number of days with pain are highly correlated with the degree of anxiety and depression as well as the probability of receiving a depression diagnosis. Furthermore, a higher chance of simultaneously experiencing pain syndromes is linked to a diagnosis of a mood or anxiety condition(Larson et al., 2004). Additionally, a diagnosis of CP disorder raises the likelihood of receiving a subsequent diagnosis of anxiety or depression. On the other hand, there is a strong correlation between a future diagnosis of chronic pain and a prior diagnosis of depression or anxiety disorders.

Majority of studies conducted on this subject have concentrated on those employed in the field of information technology. These studies have uncovered a correlation between mental health conditions such as depression and anxiety, and a heightened likelihood of experiencing chronic pain in the back and neck. Research suggests that individuals working in the field of information technology, as a result of their demanding work environment and inactive lifestyle, are more susceptible to developing these psychiatric disorders. Consequently, these illnesses are associated with an increased likelihood of feeling chronic pain in the back and neck(Reid et al., 2003).

While many studies have investigated the influence of anxiety and depression on chronic pain in IT personnel, they often ignore the examination of coping strategies used during bouts of chronic pain. This difference indicates that while we have knowledge on the ways in which anxiety and depression increase chronic pain, there is a lack of focus on the practical strategies that IT workers use to cope with their pain and mental well-being. This error emphasizes the need for more investigation into efficacious coping mechanisms that might assist IT personnel in effectively managing their chronic pain and associated psychological difficulties.

To effectively overcome the impact of anxiety and depression on chronic pain in IT employees, implementing targeted coping mechanisms is essential.Combining these strategies can improve overall well-being and resilience, enabling employees to handle pain more effectively and maintain productivity.

Aim & Objectives

To investigate the impact of anxiety and depression on chronic pain among IT employees and to assess the role of coping mechanisms in moderating these effects.

Objectives

- To evaluate the relationship between work pressure and the levels of anxiety and depression among IT employees.
- To investigate how different coping strategies influence the severity of chronic pain related to anxiety and depression
- To Examine the impact of extended working hours on mental health issues, specifically anxiety and depression.
- To determine the correlation between anxiety and depression and chronic pain among IT employees.

Methodology

Research Design

Through the use of AMOS, this study's quantitative research methodology integrates structural equation modeling (SEM) to examine the effects of job pressure, working hours, anxiety, and depression on chronic pain in IT workers. The study also looks at how coping mechanisms work to control these associations.

Participants

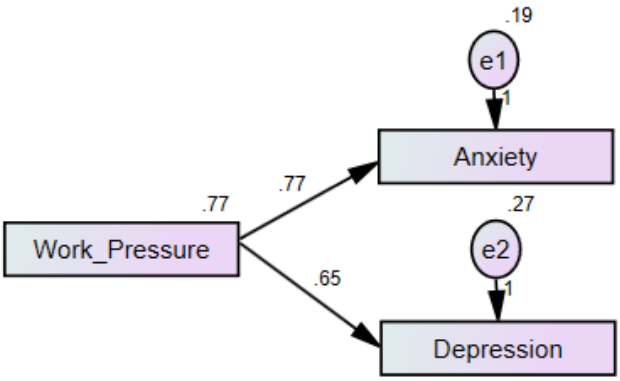
A group of 280 IT employees from different companies was chosen through online polls and workplace health programs. Individuals of various ages, genders, and job roles were selected to ensure that the results could be broadly applicable.

Data Collection

A standardized questionnaire with 5-likertscale is used to evaluate chronic pain, anxiety, depression, work pressure, working hours, and coping techniques is used to gather data from IT workers. For anxiety and depression, respectively, the General Anxiety Disorders and Patient Health Questionnaire scales are used, and for chronic pain, the Brief Pain Inventory (BPI). The Coping Mechanism Scale is used to evaluate the methods used by staff members to deal with pain and stress.

RESULTS

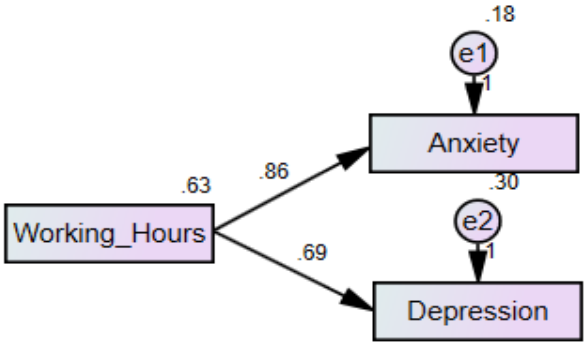
H1: Higher levels of work pressure are positively associated with higher levels of anxiety and Depression among IT employees.



PATH			Un Standardized Coefficient	S.E.	Standardized Coefficient	C.R.	P	Remark
Work Pressure	→	Anxiety	.769	.030	.840	25.886	***	Accepted
Work Pressure	→	Depression	.651	.035	.742	18.536	***	Accepted

The analysis reveals that there is a significant and favorable connection between the pressures of work and both anxiety and depression among those who work in information technology. The coefficients that are normalized for the routes that go from work pressure to anxiety and depression are 0.840 and 0.742, respectively. The critical ratios (C.R.) for these paths are 25.886 and 18.536, and both of these ratios are significant at the $p < 0.001$ level. Based on these data, it can be deduced that higher levels of anxiety and depression are seen among people working in information technology when the pressure at work rises. This shows that the high expectations and stress associated with job pressure are substantial factors to mental health concerns in this demographic. Specifically, this population struggles with mental health issues.

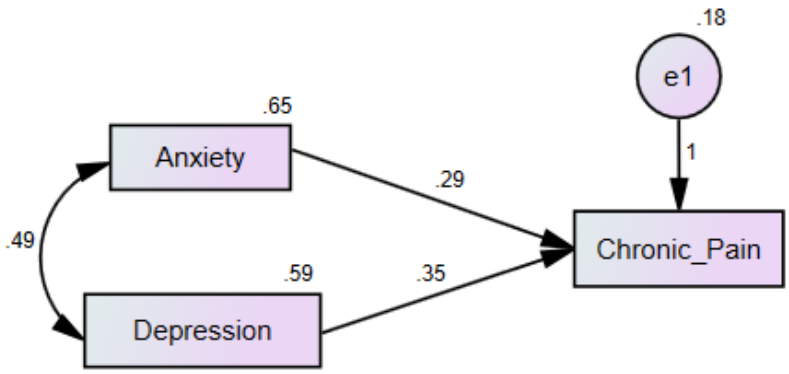
H2: Higher levels of working time are positively associated with higher levels of anxiety among IT employees.



PATH			Un Standardized Coefficient	S.E.	Standardized Coefficient	C.R.	P	Remark
Working Time	→	Anxiety	.862	.032	.850	25.886	***	Accepted
Working Time	→	Depression	.687	.041	.708	18.536	***	Accepted

The findings lend credence to the concept that more working hours are associated with higher levels of anxiety and depression among those employed in the information technology sector. While the crucial ratios for the line from working time to anxiety are 25.886 and 18.536, respectively, the standardized coefficients for the path from working time to depression are 0.850 and 0.708, respectively. Both of these ratios are statistically significant at a level of $p < 0.001$. According to these findings, working longer hours is associated with a worsening of mental health problems. This is most likely owing to the fact that longer working hours result in higher stress and less time for recuperation and personal activities, both of which are essential for sustaining mental well-being.

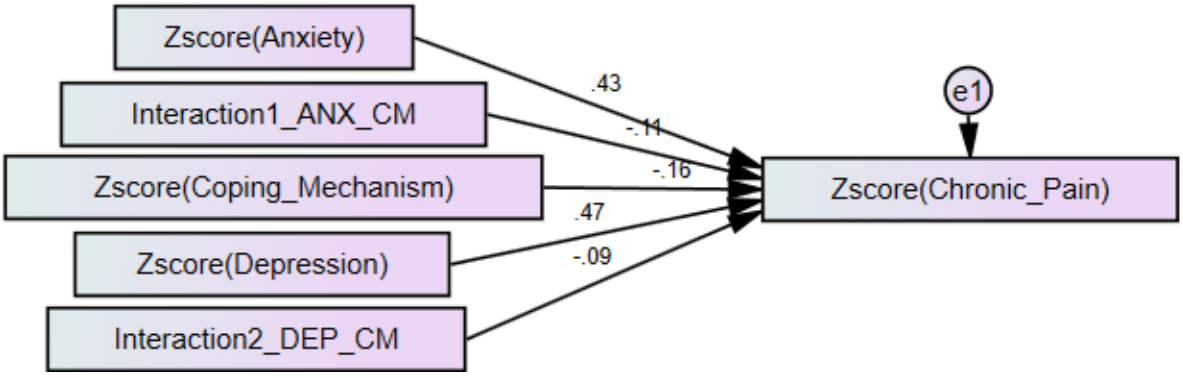
H3: Higher levels of anxiety and Depression are positively correlated with increased chronic pain among IT employees



PATH			Un Standardized Coefficient	S.E.	Standardized Coefficient	C.R.	P	Remark
Anxiety	→	Chronic pain	.295	.052	.370	5.706	***	Accepted
Depression	→	Chronic pain	.345	.054	.416	6.401	***	Accepted

There is a substantial positive association between anxiety and depression and chronic pain among people working in information technology, according to the findings of the investigation. A standardized coefficient of 0.370 is found for the road from anxiety to chronic pain, while a value of 0.416 is found for the path from depression to chronic pain. For these particular pathways, the critical ratios are 5.706 and 6.401, respectively, and both of them are statistically significant at a level of $p < 0.001$. These results demonstrate that greater levels of anxiety and depression are connected with more severe chronic pain, which suggests that mental health issues contribute considerably to the feeling of physical pain in this group. Anxiety and depression are two of the most common mental health diseases.

H4:Higher levels of anxiety and Depression are positively correlated with increased chronic pain among IT employees is moderated by Coping Mechanism.



PATH			Estimate	S.E.	C.R.	P
ZChronicPain	<---	ZAnxiety	.369	.038	9.610	***
ZChronicPain	<---	Interaction1_ANX_CM	-.046	.019	-2.483	.013
ZChronicPain	<---	ZCopingMechanism	-.101	.029	-3.505	***
ZChronicPain	<---	ZDepression	.409	.038	10.655	***
ZChronicPain	<---	Interaction2_DEP_CM	-.033	.016	-2.072	.038

The regression analysis was conducted to test Hypothesis 4 and yielded significant findings pertaining to the relationships between anxiety, depression, coping mechanisms, and chronic pain among IT employees. The findings suggest a positive correlation between higher levels of anxiety and increased chronic pain. This is supported by the significant path coefficient (Estimate = .369, S.E. = .038, C.R. = 9.610, $p < .001$). Depression is positively correlated with chronic pain, as evidenced by a significant path coefficient (Estimate

= .409, S.E. = .038, C.R. = 10.655, p < .001).The analysis demonstrates that coping mechanisms play a moderating role in these relationships. The relationship between anxiety and coping mechanisms is found to be negative and statistically significant (Estimate = -.046, S.E. = .019, C.R. = -2.483, p = .013).
This suggests that the use of effective coping strategies can help mitigate the impact of anxiety on chronic pain. The negative and significant interaction between depression and coping mechanisms is observed (Estimate = -.033, S.E. = .016, C.R. = -2.072, p = .038). This finding suggests that coping strategies have the potential to mitigate the impact of depression on chronic pain.
Furthermore, it is worth noting that coping mechanisms have a substantial negative impact on chronic pain among IT employees. The estimate is -.101, with a standard error of .029 and a critical ratio of -3.505, all of which are statistically significant at p < .001. This finding emphasizes the significance of coping mechanisms in the reduction of chronic pain in this particular occupational group. The findings indicate that anxiety and depression have a strong predictive relationship with chronic pain. However, the utilization of effective coping mechanisms can greatly diminish these relationships, offering a valuable tool for effectively managing chronic pain in the workplace.

Conclusion

The findings of the study indicate a significant correlation between high levels of work pressure and extended working hours with increased anxiety and depression among IT employees. These mental health issues are strongly associated with elevated levels of chronic pain. The analysis reveals significant positive associations between work pressure and anxiety (Standardized Coefficient = 0.840, p < 0.001) as well as between working time and anxiety (Standardized Coefficient = 0.850, p < 0.001). Similarly, there are significant positive associations between work pressure and depression (Standardized Coefficient = 0.742, p < 0.001) as well as between working time and depression (Standardized Coefficient = 0.708, p < 0.001). Moreover, there is a positive correlation between anxiety and depression with chronic pain, as indicated by the standardized coefficients of 0.370 and 0.416, respectively. The utilization of effective coping strategies is a valuable tool for mitigating the adverse effects experienced in this demanding field. Interventions that focus on enhancing coping mechanisms have the potential to improve both mental and physical health outcomes for individuals.

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