أنماط الألم المزمن ذو الاسباب المختلفة

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مستخلص:

الاهداف: مقياس الألم المختصرهو مقياس شائع الاستعمال لقياس الألم تحتوي نسخته

العربية الليبية علي ثلاثة مقاييس فرعية وهي شدة الألم والتداخل مع النشاط البدني والتداخل مع والوظائف النفسية. الهدف من هذه الدراسة هو استكشاف الاختلافات في المقاييس الفرعية لا هذا المقياس بين المرضي الذين يعانون من الالام المزمنة لأسباب كامنة مختلفة

طريقة البحث: تم تصنيف مائة وستة وخمسون مريضا يعانون من الالام المزمنة في ثلاث مجموعات وفقا للتشخيص وطلب منهم اكمال اختبار النسخة العربية الليبية لمقياس الألم الوجيز.

تم استخدام تحليل التباين لفحص الاختلافات في قياسات النسخة العربية الليبية لمقياس الالم ا لوجيز بين المجموعات الفرعية المحدة مسبقا من المرضي.

النتائج: سجل المرضي الذين يعانون من الم مزمن نتيجة لإصابات رياضية درات اعلي منشدة الالم

مقارنة بالأخرين وسجل مرضي السرطان درجات اعلي في مقياس التداخل النفسي.

مناقشة النتائج: كانت النسخة العربية الليبية لمقياس الالم الوجيز قادرة علي تميز ثلاثة أنماط

مختلفة للألم بين المجموعات الفرعية الثلاثة للمرضي يجب ان يؤذ تشخيص المريض في الاعتبار

عند معالجة الالم المزمن.

الكلمات المفتاحية: الاختلاف الجندري، الالام المزمنة، شدة الألم امراض الجهاز العظمي

العضلي.

Patterns of chronic pain of different underlying causes

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Abstract

Objectives:The brief pain inventory BPI is standard commonly used pain measure and its Libyan Arabic version has three subscales which are pain intensity,interference with physical activity and psychological interference.The goal of this study was to explore differences in the BPI subscales among patients with chronic pain of different underlying causes.

Methods:**Four hundred** and sixty-eight chronic pain patients were categorized in three subgroup according to the diagnosis and asked to complete the BPI-LAV.Analysis of variance was used to examine differences in BPI-LAV measurements among the predefined subgroups of patients.

Results:Patients with sport injures reported higher scores of pain intensity than the others($p<0.001$).Cancer patients scored higher in psychological interference($p<0.001$).Non-cancer non-sport injury patients had higher scores in physical interference($p=0.034$).

Discussion:

The BPI-LAV was able to detect three different pain patterns among the three subgroups of patients.Patient`s diagnosis has to be taken into consideration when managing chronic pain.

Keyword
Gender difference, chronic pain, musculoskeletal diseases,pain intensity.

1.Introduction

According to IAPS(international association for the study of pain) task force the definition of pain was updated to"An unpleasant sensory and emotional experience associated with,or resembling that associated with, actual or potential tissue damage,".[1]

Any pain continues persistently or recurrently for more than three months can be defined as chronic pain.[2]

Chronic pain with its health and socioeconomic ramifications is a common public health issue,major leading cause for seeking medical consultation and an important cause of disability and life quality reduction.[3-6]

This common symptom can be caused by diverse clinical disorders such as cervical or lumbar radiculopathy, osteoarthritis,degenerative spine diseases (spondylosis, spinal stenosis ,spondylolisthesis, degenerated intervertebral disks),myofascial pain syndrome, complex regional pain syndrome(CRPS),rheumatoid arthritis,diabetic neuropathic, trigeminal neuralgia, post-herpetic neuralgia,primary and metastatic tumors,and sport injuries(accidental traumatic injuries and overuse syndromes).[7] Recent researches revealed that nociceptive/ inflammatory and or neuropathic mechanisms are involved to different extents in chronic pain pathogenesis.[8-10]

Previous studies attempted to detect BPI(brief pain inventory) based patterns of chronic pain among subgroups of patients suffering from chronic pain.[11,12]

In addition to that,the validation of the Libyan Arabic version of the brief pain inventory BPI-LAV has opened the door to explore patterns of chronic pain of diverse underlying causes among Libyan patients.Such comparison between chronic pain subgroups could be of benefit to identify which patients require a particular approach to manage their chronic pain adequately.Therefore,the aim of this study is to compare intensity and interference of chronic pain ratings between cancer patients

and non-cancer patients including those with musculoskeletal disorders and those with chronic pain related to sport injuries.

2.Methods

2.1 Subjects

The sample size was calculated by using a power analysis.We needed a total sample size of 468 (156 patients in each group) to obtain an actual power of 0.85 to detect an effect size of 0.25.The research population comprised all chronic pain patients who visited out- patient clinics or admitted to wards of departments of physiotherapy, oncology, rheumatology and orthopedicsof the university hospital in Tripoli, Libya between January,and April 2022.

Adult Libyan patients who have had chronic pain and filled out questionnaires completely were included in the study.While those who completed the questionnaires partially and those who refused to give at least verbal consent were excluded.On occasion, patientsrequested assistance by researches to read or and fill outthe questionnaires.Participants were predefined by underlying cause of chronic pain into three subgroups:cancer related chronic pain,sport injury related chronic pain (a pain perceived in musculoskeletal tissues and caused by sport injury)and non cancer non sport injury related chronic pain(a pain perceived in musculoskeletal tissues and not caused by sport injury or cancer).

2.2 Instruments

The Brief Pain Inventory Libyan Arabic version BPI-LAV has been validated among Libyan patients with chronic pain and its culture sensitivity has been confirmed.[13]It is 13-item version and its three factor structure measures pain intensity,physical impact of pain and psychological impact of pain.

Pain intensity is assessed by four items:least pain,average pain,worst pain and current pain by using a numeric rating scale of 0 to 10 with "0" indicates to no pain and "10" indicates the worst pain that can be imagine.Physical interference of pain is measured by three items:walking ability, daily activity, and indoor outdoor work.Psychological impact of pain is also assessed by three

items:relation with others, sleep and mood.Patients answer these questions on an 11-point scales with "0"describe no impact and "10 "corresponds to complete interference.Additionally, it asks patients to localize their pain site,to mention their pain treatment and to specify percentage of their pain relief.We asked patients to fill in the BPI-LAV and to answer personal questions regarding their age, gender, marital status,educational level and pain duration.

2.3 Statistical analysis

IBM SPSS statistics, version 28.0.0.0 was used to carry out all statistical analyses.Statistical significance level was set at 0.05.
Means, standard deviation (SD),median and frequencies (absolute numbers, and percentages) were calculated to describe personal and clinical characteristics of the sample and to determine scores of pain intensity and pain interference subscales.Moreover, analysis of variance were used to compare pain intensity and pain interference ratings between different chronic pain subgroups.

3.Results

In terms of personal characteristics,mean age (±SD) and median of the research sample were 50(±14) and 51. 51.67% of the patients were male ,76% were married and 69% had university education. While in terms of clinical characteristics ,almost all patients were recruited from the outpatient departments (97%).Median of pain duration was 12 months.Pain sites most frequently reported by patients were the lower limbs(41%),upper limbs(21%) and thorax(17%).Mean(±SD) and median of pain relief percentage were73%(±14)and 80%.all patients reported taking pain medications with non-steroid anti-inflammatory drugs being most frequently used.The prevalent malignancies among cancer patients were breast cancer (29%) or lung(22%) cancer.The common sport injuries were tendenopathy (39%) or ligament tear(31%).About 19%and 12% of patients with musculoskeletal disorders(neither caused by cancer nor by sport injury)having lumbar radiculopathy and osteoarthritis respectively.Details about personal and clinical characteristics of the study subgroups are shown in Table 1.

Table1.Characteristics of patients among study groups

Patient characteristic	Study subgroup		
	Cancer n=156	Sport injury n=156	Non cancer non sport injury musculoskeletal disorder n=156
Age (years) Median Mean(±SD)	51 56.3(±10.8)	36 37.9(±11.2)	60 56(±12.5)
Gender Male	46%	87%	67%
Marital status Married	89%	48%	90%
Educational level University	75%	75%	58%
Patient type Outpatient	96%	98%	96%
Pain duration(months) Median Mean(±SD)	24 25(±18)	6 8.2(±5)	24 29(±20)
Pain location	Thorax 48% Head and neck 26% Abdomen and pelvis 20%	Lower limb 64% Upper limb 27%	Lower limb 60% Upper limb 37%
Improvement (%) Median Mean(±SD)	70 71(±13)	70 72(±16)	80 75(±13)

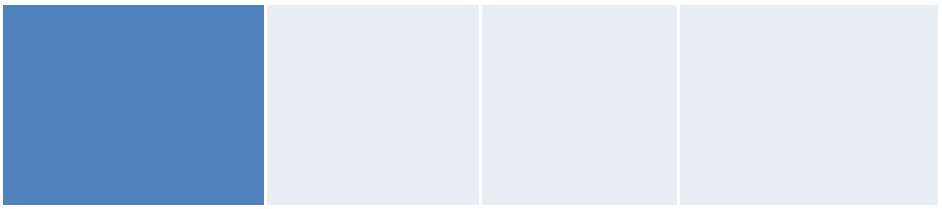

Table 2 demonstrates mean scores of BPI-LAV subscales of patients with different underlying cause of chronic pain.
Significant difference was found among the research subgroups in the pain intensity scores ($F(153,2)=10.84, p<0.05$),in the physical interference ratings and ($F(153,2)=3.47, p<0.05$), and in The psychological impact scores ($F(153,2)=14.03, p<0.05$).Post hoc test is used for pairwise comparisons to determine the nature of the difference between the study groups.This analysis revealed that patients with sport injuries reported higher pain intensity (Mean=5.1,SD=1) than the other patients.Patients with no cancer or sport injury scored significantly higher in physical interference measure(Mean=7.2,SD=1.8)than cancer patients(Mean=6.4,SD=1.9). Patients with sport injuries(Mean=6.5,SD=1.7) were not significantly different in this measure from either of the other two groups.Patients who had cancer had significant higher scores in psychological interference subscale(Mean=7.2,SD=1.8) than other patients.Patients with sport injuries(Mean=4.2,SD=1.4) were not significantly different from patients among the non-cancer non-sport injury group.

Table2.BPI-LAV subscale mean scores of patients with cancers,sport injuries and non-cancer non-sport injury musculoskeletal disorders

Subscale	Study patients				
	Cancer (n=156) Mean(±SD)	Sport injury (n=156) Mean(±SD)	Non-cancer non-sport injury (n=156) Mean(±S	F	P

			D)		
Pain intensity	4.2(±1)	**5.1(±1)**	4.5(±0.7)	10.4	0.000
Physical interference	6.4(±1.9)	6.5(±1.7)	**7.2(±1.8)**	3.5	0.034
Psychological interference	**5.4(±1.8)**	4.2(±1.4)	3.9(±1.2)	14	0.000

4.Discussion

The aim of this research was to assess ability of the BPI-LAV to identify clinically important groups of patients with chronic pain,specifically with relation to the underlying etiology of chronic pain.Exploring patterns of chronic pain has distinguished subgroups of patients:sport injury patients are highly symptomatic as they had the worst pain intensity scores. This finding congruent with earlier study which observed similar high intensity pain scores of 4.2±1.8 among injured athletes.[14]

Moreover, patients who their chronic pain was due to non-cancer non-sport injury disease were more susceptible to physical impact of chronic pain.Our findings were confirmed by Terrier and his colleagues[15] who found that patients with chronic musculoskeletal pain had scores of pain interference with physical functioning of 5.3±2.2 . On the other hand patients with cancer were more liable to psychological dysfunction.Psychological symptoms such as depression and anxiety play an important role in the chronicity of cancer pain and its inadequate control. [16,17,18]This variation in chronic pain perception could be explained by the difference in the pathogenesis behind each underlying cause.

Such different patients may require tailored medical management to alleviate high level of symptoms or mitigate deleterious impact of chronic pain on physical or psychological functions.So that,taking into consideration underlying cause of

chronic pain is paramount when managing patients with chronic pain.

Other studies have recognized differences between cancer pain patients in functional interference.[11,12,19]

This research is not exempt from limitations.With respect to pain analysis,it did not take into account potential confounders such as pain intensity level,age,cancer stage and disease severity.Furthermore,the use of convenience method of sample might have introduced selection biases.In addition to that,heterogeneity between diagnoses in each group of patients and may have effect on pain responses.

Further researches should examine the ability of the BPI to detect changes in variables over time and investigate functional interference of pain in various levels of pain.

5.Conclusion

In conclusion,BPI-LAV was able to detect differences among chronic pain patients in scoring pain intensity,physical interference and psychological interference.Patients with chronic pain due to sport injuries report high scores of pain intensity,those with chronic pain that not related to either sport injury or cancer, experience significant interference on physical activity and patients with chronic cancer pain encounter considerable detriment to psychological function.These findings raise pertinent implications in clinical practice of pain management.

Conflict of interest statement

The authors have no competing interest concerning the current study .

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