

Pain tracker diagnostic instrument: effect on patients' satisfaction with their interactions with the primary care physician

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أداة تشخيصية لاقتفاء الألم: التأثير على رضى المرضى في تفاعلهم مع الرعاية الأولية
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الخلاصة: أجريت دراسة عشوائية لتقييم أداة اقتفاء الألم كوسيلة لتحري وتشخيص الألم ومدى تأثيرها على رضى المريض وتفاعله مع الرعاية الأولية. وتبدأ الاستمارة من قبل الطبيب بعد أن يسأل المريض المفحوص عن أعراضه. بلغ عدد المرضى المدروسين 49 مريضاً وعدد الشواهد 53 شخصاً، وقد أجريت مقابلات شخصية مع كل منهم مع تحليل لتأثير الأداة من خلال إجاباتهم على 15 عبارة. وقد أبدت مجموعة المرضى المدروسين رضى أكبر بكثير مما أبدته مجموعة الشواهد حول العلاقة مع الطبيب (فقد كان الحُرَز score الوسطي للرضى لدى المرضى المدروسين 85 ± 8 ولدى الشواهد 61 ± 9). وقد لوحظ وجود ترابط خطي مباشر بين تقييم المرضى للزيارة وبين الرضى بشكل عام (وكان عامل الترابط 0.86). إن أداة اقتفاء الألم قد تكون من العناصر الهامة في أخذ القصة المرضية وقد تكون أداة مفيدة وتشخيصية في التحري عن الألم.

ABSTRACT In a randomized trial, the pain tracker instrument was evaluated as a diagnostic screening tool and for its effect on patients' satisfaction with their interactions with the primary care physician. The instrument form was filled in by the physician after asking the study patients about symptoms. Control ($n = 53$) and study patients ($n = 49$) were interviewed and the instrument's effect was analysed from responses to 15 statements. The pain tracker group were significantly more satisfied with the physician relationship than were controls (mean satisfaction score 85 ± 8 versus 61 ± 9). A direct linear correlation was found between patients' assessment of the visit and overall satisfaction ($r = 0.86$). The pain tracker can be an important component in history taking and a useful diagnostic screening tool in pain presentations.

Instrument diagnostique de localisation-qualification de la douleur : effet sur la satisfaction des patients concernant leur relation avec le médecin de soins de santé primaires

RESUME Dans un essai randomisé, l'instrument de localisation-qualification de la douleur a été évalué en tant qu'outil de dépistage diagnostique et quant à son effet sur la satisfaction des patients concernant leur relation avec le médecin de soins de santé primaires. La fiche de l'instrument a été remplie par le médecin après avoir demandé aux patients de décrire les symptômes. Les témoins ($n = 53$) et les patients de l'étude ($n = 49$) ont été interrogés et l'effet de l'instrument a été analysé à partir des réponses à 15 propositions énoncées. Le groupe pour lequel l'instrument a été utilisé était significativement plus satisfait de sa relation avec le médecin que ne l'étaient les témoins (score de satisfaction moyen 85 ± 8 contre 61 ± 9). Une corrélation linéaire directe a été notée entre l'évaluation de la visite par les patients et la satisfaction générale ($r = 0,86$). L'instrument de localisation-qualification de la douleur peut être un élément important du dossier médical et un outil utile de diagnostic de la douleur chez les patients.

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Introduction

Pain, as a common cause of patient presentations to the physician, is a uniquely subjective experience that cannot be quantified directly or confirmed easily by the physician. Therefore, a number of attempts have been made to design measures to quantify and to help elicit subjective pain characteristics.

A simple method is the use of pain drawings. They have been found to be clinically useful in clarifying the patient's presenting complaints [1,2]. Pain questionnaires such as the visual pain scale [3] and the McGill questionnaire [4], while widely used in research settings, are rarely applicable in primary care practice. In fact, physicians tend to apply simple numerical rating scales, e.g. 0-5 or 0-10, rather than visual analogue scales [5]. Yet brief pain instruments do not elicit sufficient information to be of value in fully assessing the patient's pain complaints. There is therefore a need for a sophisticated, easy-to-use instrument that a typical primary caregiver can use in primary care settings with every patient.

'Pain tracker' is a hybrid instrument with a variety of reporting formats that gives the patient a greater opportunity to communicate with the physician about the nature of the pain. Radecki and Brunton reported that pain tracker results in improvement of the patient's impression of the patient-physician relationship and in greater patient satisfaction with specific aspects of patient-physician communication [6].

Several factors can influence satisfaction. Underlying lifestyle structures and cultural beliefs and social, economical and even religious characteristics seem to suggest that satisfaction and factors that contribute to it may be totally different for patients in the Eastern Mediterranean Re-

gion compared with their counterparts in Europe and North America.

Because of its potential applicability and usefulness in primary care settings in developing countries, we assessed the effect of the pain tracker instrument on patient satisfaction with specific aspects of patient-physician communication in the Islamic Republic of Iran. We also gathered feedback from the general practitioners on the efficacy of the instrument as a means of improving communication with the patient during the visit, and its effect on patient satisfaction and on the data it provided as a diagnostic tool. The main goal of the current study was to assess whether the results of previous studies on the efficacy of the pain tracker instrument could be reproduced in the Iranian cultural and social setting.

Methods

Subjects

Our subjects were 18 general practitioners who practised in health care service units in the Meshed city region and 108 patients who attended these centres with complaints of pain. Patients who were Iranian residents of Meshed of at least 16 years of age were eligible for inclusion in the study. The patient's chief complaint was acute pain, regardless of the location and severity of pain, or acute mild pain through the course of a chronic condition such as rheumatoid arthritis. Each had access to a telephone line, either personally or indirectly by the means of a relative or neighbour and each was willing to participate in the telephone interview. Patients were randomized into two groups, control and study, each with 54 patients. Informed consent was obtained from each patient participating in the study.

Patients whose chief complaint was severe chronic pain (defined in this study as a pain that impeded the patient's daily regular activities for 10 days or more in 1 month) were excluded from the present study. Patients were screened and those suffering from major combined conditions such as end-stage cancers or angina pectoris that would complicate the diagnosis and management of minor pain were also excluded. We excluded lactating and pregnant women and those with any limitation or disability that would prevent them from participating in a telephone interview. Patients who had visited a psychiatrist or used psychotropic medications in the past 6 months were excluded from the study.

Data collection

Two health centres in Meshed city were randomly selected and 6 encoded envelopes were given to each of the 18 physicians in the selected centres. The physicians were asked to use the envelopes on the basis of the coded number (1–6) to prevent selection bias. Three of the envelopes contained pain tracker forms and 3 others were blank. Each physician therefore interviewed 3 patients in the control group and 3 patients in the study group.

To collect the data from our samples, we used the following tools:

1. sampling form
2. enrolment form
3. pain tracker instrument
4. telephone interview record
5. physician questionnaire.

The sampling form was used to identify the inclusion and exclusion criteria. The enrolment form included the telephone number of the patient, the patient's proposed time for telephone interview, the pain complaint and the preliminary diagnosis, subsequently coded with the *ICD-9 CM* [7].

To collect the data, we asked participating physicians to use the encoded envelopes in sequential order for visiting patients. The physicians were not aware of the main goal of the study, i.e. determining patient satisfaction.

Following identification of an appropriate patient as per inclusion criteria given on the sampling form, participating physicians opened a study envelope. If the pain tracker form was included in the envelope, the physician used its questions. If it was not included, no specific data was gathered and the visit followed its natural course.

The pain tracker instrument [6] consists of 9 components, e.g. the patient's depiction of pain and pain radiation facilitated by inclusion of two body drawings, accompanied by an illustrated example and four perspectives of the head. Patients pointed to their site of pain on the depiction. Another widely used pain instrument that is incorporated into the pain tracker form is the visual analogue scale that subjectively clarifies the intensity of pain by selection of a grade 0–10 by the patient. Other components of pain tracker are devoted to characteristics of the symptoms. A version of the pain tracker in standard Persian was used for this study.

After using the pain tracker, the physician noted the personal data and the telephone number of the patient. One week after the physician visit, patients in both the control and study groups were contacted by an interviewer and after having the interview explained to them, answered a set of specific questions based on an interview form. The interviewer was blind to the patient's experimental/control group status. The questions consisted of short statements about the interaction of patient and physician and were designed to collectively measure the satisfaction variable. The patients were asked to express their ideas

about individual characteristics by indicating if they strongly agreed, agreed, were not sure, disagreed or strongly disagreed with each of the 15 statements. The interview concluded with a question about the patient's overall level of satisfaction with the physician visit, which was graded by the patient on a 0 to 10 scale (completely dissatisfied to completely satisfied).

After collecting the 108 registration forms, we conducted a survey on the efficacy of the pain tracker instrument among the 18 participating general practitioners. The physicians were asked to evaluate the pain tracker instrument in terms of the information it provided, its effect on communication with the patient during the visit and patient satisfaction. They were also asked if they favoured application of this instrument in their daily visits.

Analysis

After collecting the preliminary data in the telephone interview, the answer to each of the 15 specific questions was graded on the basis of a Lickert-type 5-point scale. Thus, the overall grade of satisfaction was calculated. Based on the number of patients selecting each option, we calculated the chi-squared distribution for each question comparing the control and the study groups.

The results of the study were analysed using *SPSS* version 10.

Results

Six patients (1 from the control group and 5 from the study group) were excluded because of accessibility problems. The study was therefore performed on 102 patients, i.e. 49 in the study group and 53 in the control group.

Chi-squared distribution and independent *t* tests showed that the control and

study groups did not differ significantly on the basis of age, sex, marital status and type of pain (acute or chronic) (Table 1). There was, however, a statistically significant difference between the 2 groups on the basis of education and socioeconomic classification. There was no significant difference in the pattern of pain on the basis of *ICD-9-CM* encoding between the 2 groups. The most common pain types were lumbar and back pain (18.8%). Joint pain (17.8%) and headache (15.8%) were also common.

Evaluation of the 15 patient satisfaction measures revealed that patients in the pain tracker group reported significantly greater satisfaction with communication with the physician than did controls (Table 2). More study patients reported that they had enough chances to express their symptoms and that their physicians believed in the reality of their symptoms, paid attention to their complaints, asked questions about their complaints, listened carefully, understood their symptoms and provided them with sufficient time to express their worries ($P < 0.001$). Significantly more patients in the study group believed that their doctor seemed comfortable listening to them describing their pain and gave them a clear explanation of the cause of their pain ($P < 0.001$). Also, more patients in the study group felt that their doctors had given enough advice on what to do with their pain in the future ($P < 0.001$).

In comparison with the control group, a higher percentage of patients in the study group expressed their willingness to return to the same physician in the future. In the study group, 34.7% strongly agreed and 53.1% agreed to return to the same doctor in comparison to 1.9% and 37.7% respectively in the control group (Table 2). In response to the question whether the patient was going to recommend this physician to

Table 1 Patients' characteristics in the pain tracker and control groups

Personal characteristics	Control group (n = 53)	Pain tracker group (n = 49)	P-value ^a
Mean ± s age (years)	40.9 ± 16.6	38.3 ± 16	0.40
Sex (%)			0.30
Male	20.8	18.4	
Female	79.2	81.6	
Marital status (%)			0.09
Single	22.6	28.3	
Married	77.4	71.7	
Education (%)			0.03
Illiterate or primary school	33.9	18.4	
Junior high school	30.3	8.2	
High school and higher	35.8	73.4	
Socioeconomic class (%)			0.01
Low	11.2	2.1	
Low/middle	28.3	28.6	
Middle	45.4	36.4	
High/middle	15.1	24.5	
High	0	8.3	
Pain complaint (%)			0.09
Acute	42.2	57.1	
Minor pain/chronic condition	55.8	42.9	

^aStatistical correlations were calculated using chi-squared test and Pearson coefficient of correlation.
s = standard deviation.

friends and family, 53.1% in the study group strongly agreed to do so compared with only 1.9% in the control group.

The mean score of the 15 questions was 85.1 (SD = 8.3) in the study group and 61.3 (SD = 9.4) in the control group, based on the total summation of patients' ideas as measured by the Lickert scale. A separate question was designed to assess overall patient satisfaction with the physician visit and was scored by the patient on a scale of 0 to 10. The mean overall satisfaction score was significant higher (8.8; SD = 1.3) for the study group than for the control group (6.5; SD = 1.4). This higher rate of satisfaction in the study group was also demon-

strated by independent *t*-test ($P < 0.001$). The Pearson correlation coefficient showed a direct linear relation between patients' assessment of the physician's visit and the overall patient satisfaction score ($r = 0.86$, $P < 0.001$).

From the interviews with the 18 physicians, 16 said they would use the pain tracker routinely in the future and regarded pain tracker as a useful instrument in history-taking techniques. Thirteen physicians believed that the pain tracker provided them with data that could be obtained regularly and lead to a more precise diagnosis. Physicians had different opinions about the efficacy of parts of the test and some

Table 2 Patients' evaluation of the physician visit in the pain tracker ($n = 49$) and control ($n = 53$) groups

Statement and group	% of respondents					P-value ^a
	Strongly agree	Agree	Not sure	Disagree	Strongly disagree	
<i>I was able to give the doctor enough information about my pain</i>						< 0.001
Pain tracker	73.5	24.5	0	2.0	0	
Control	1.9	79.2	9.4	9.5	0	
<i>The doctor did not seem comfortable listening to me describe my pain problem</i>						< 0.001
Pain tracker	0	4.0	0	32.7	63.3	
Control	1.9	22.6	9.4	64.2	1.9	
<i>The doctor did not listen carefully to my description of my pain problem</i>						< 0.001
Pain tracker	0	6.1	2.0	18.4	73.5	
Control	3.8	43.4	7.5	41.5	3.8	
<i>I felt the doctor asked enough questions about my pain</i>						< 0.001
Pain tracker	72.5	22.4	3.0	2.0	0	
Control	1.9	64.2	24.5	9.4	0	
<i>The doctor did not give me a clear explanation of the cause of my pain</i>						< 0.001
Pain tracker	0	14.3	4.1	73.5	8.1	
Control	0	60.4	5.7	32.1	1.8	
<i>The doctor made me less worried about my pain</i>						0.002
Pain tracker	6.1	69.4	6.1	18.4	0	
Control	0	39.6	28.3	30.2	1.9	
<i>The doctor performed a thorough examination</i>						< 0.001
Pain tracker	71.4	22.4	4.1	2.1	0	
Control	1.9	34.0	34.0	28.3	1.8	
<i>The doctor seemed to believe that my pain was real</i>						0.008
Pain tracker	10.2	77.6	10.2	2.0	0	
Control	1.9	58.5	30.2	9.4	0	
<i>The doctor did not understand the concerns I had about my pain</i>						< 0.001
Pain tracker	0	2.0	10.2	77.6	10.2	
Control	28.3	35.8	34.0	1.9	0	
<i>I felt that I had things to tell my doctor about the pain that I didn't get a chance to discuss</i>						< 0.001
Pain tracker	2.0	0	0	10.2	87.8	
Controls	18.9	62.3	3.8	15.1	0	

Table 2 Patients' evaluation of the physician visit in the pain tracker ($n = 49$) and control ($n = 53$) groups (concluded)

Statement and group	% of respondents				Strongly disagree	P-value ^a
	Strongly agree	Agree	Not sure	Disagree		
<i>The doctor told me what to do about pain in the future</i>						< 0.001
Pain tracker	12.2	79.6	2.1	6.1	0	
Control	1.9	52.8	7.6	37.7	0	
<i>The doctor gave me a clear idea of how long it would take for my pain to get better</i>						0.041
Pain tracker	6.1	57.1	6.2	30.6	0	
Control	0	41.5	3.8	54.7	0	
<i>The doctor was concerned about what happened with my pain after I left the office</i>						< 0.001
Pain tracker	83.7	6.1	4.1	6.1	0	
Control	0	11.3	28.3	52.8	7.6	
<i>I will consult the same doctor, if I have the pain in future</i>						< 0.001
Pain tracker	34.7	53.1	8.1	4.1	0	
Control	1.9	37.7	35.8	24.6	0	
<i>I will recommend this doctor to my family and friends</i>						< 0.001
Pain tracker	53.1	32.7	10.1	4.1	0	
Control	1.9	32.1	35.8	20.8	9.4	

^aStatistical correlations were calculated using chi-squared test and Pearson correlation coefficient.

suggested that the ability of the patient to understand and answer the items should be seriously considered, especially with regards to the quality of pain perception. On the other hand, 17 physicians believed that using the pain tracker resulted in the perception that the physician was taking more time and paying more attention to the patient.

Discussion

It has been demonstrated that the most common reasons for patients' dissatisfaction with physicians are incorrect diagnosis, improper interaction with the patient,

lack of interest and imprecision in the encounter with the patient [8]. In contrast, the most important determinants of the strength of the patient-physician relationship are paying enough attention, listening to the patient, diagnostic precision and patient understanding. In the same way the role of good communication skills in developing psychological approaches for pain alleviation cannot be overemphasized [9]. All of these factors have a strong relationship with overall patient satisfaction. With regard to the importance of patient satisfaction, medical councils in the United Kingdom have included teaching how to listen to the patient properly in physician

training programmes. To further emphasize the importance of the role of communication with patients and their families in pain management, the Association for Palliative Medicine (APM) of Great Britain and Ireland has included this topic in its core curriculum [10].

The sort of communication that exists between the physician and the patient in developing countries differs in some aspects from industrialized countries. The Iranian physician has a different array of facilities at hand, has been trained differently in medical school and faces unique cultural limitations, social barriers and local rules that mean that he/she communicates with the patient in a different manner from doctors in other cultural settings. The expectations of a typical Iranian patient may also differ widely. Patients in this country tend to expect immediate alleviation of their suffering and that physicians can cure every malady. Unless the physician takes immediate practical steps for the management of their suffering, patients may be dissatisfied with the outcome. In such an atmosphere, verbal communication, and the amount of effort the physician exerts to establish it, plays an unclear role in the overall satisfaction of the patient.

It is therefore interesting to note that in this study the pain tracker, which provides a standardized means for establishing communication with the patient, results in greater patient satisfaction and provides results comparable to Redecki and Brunton's study in California, USA [6]. Patients in our pain tracker group tended to be from higher socioeconomic classes and were more educated than the control group, a bias that may have affected the results of our study. However, the pain tracker instrument resulted in highly significant improvements in patients' perceptions of the quality of interaction with the primary care physician.

This is supported by a previous study that demonstrated that a reasonably accurate perception of pain severity by physicians can be a useful tool in effectively managing acute pain [11]. This also indicates that, even if most patients believe their physicians have complete clinical and medical competency, most are looking for something more than this. They expect their physician to listen to them compassionately, understand their suffering sympathetically and provide the opportunity to establish a firm bilateral relationship conducive to the expression of their worries. Frankel and Beckman [12] found that 69% of physicians do not let their patients say what is important to them and that most start close questioning related to the patient's complaints after 18 seconds. Premature interruption of the patient's interview by the physician leads to an incorrect interpretation of deficient data obtained from incomplete interviews. The direct effect of this may be incorrect diagnosis and treatment. A study in the UK found that doctors need both communication skills and time in consultations along with knowledge of the patient to determine at which times, with which illnesses and at which level their patients wish to be involved in decision making [13]. Therefore, a patient-centred interview with the allocation of time for expression of symptoms and concerns by the patient and enough attention from the physician results in rewarding outcomes, both in the terms of patient satisfaction and correct diagnosis.

Our study was performed in a different cultural setting on a larger sample group than Radecki's study [6]. Further studies in other cultural and social settings are needed. Researching the instrument's effectiveness in other settings will allow for further modifications to improve its structure and to standardize the pain tracker.

Conclusion

We recommend pain tracker as a component in history taking that helps to establish rapport between the patient with a pain complaint and the physician. Primary care physicians and general practitioners who face a wide array of pain presentations in their daily practice will find it especially useful [14]. This will increase patient satisfaction and may prove to be a useful diagnostic screening tool in pain presentations. It is also applicable for medical students

who need more expertise and time to develop history-taking skills.

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The Domains of Health Responsiveness: a Human Rights Analysis

In addition to improving health and ensuring equitable financing of health systems, the way health systems interact with individuals can impact on their well-being. Some researchers have termed this area of work "patient experience"; WHO has termed this work health system "responsiveness" and has proposed that a health system's performance in this area also be evaluated alongside the measurement of health system performance with more traditional indicators like mortality, morbidity and utilization statistics. If a health system is responsive, it is possible that interactions people have within the health system will improve their well-being, irrespective of improvements to their health.

The concept of responsiveness has eight operational domains. These include: (1) respect for the dignity of persons; (2) autonomy to participate in decisions; (3) confidentiality; (4) prompt attention; (5) adequate quality of care; health-related (6) communication; (7) access to social support networks; and (8) choice of health care providers. *The Domains of Health Responsiveness: a Human Rights Analysis* is a brief report which discusses the human rights context for the recognition of these domains in the provision of health services to the public. The full text of this report and further information about health systems responsiveness is available free online at: <http://www3.who.int/whosis/menu.cfm?path=evidence,hsr&language=english>