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ORIGINAL ARTICLE

Telephone versus self administration of outcome measures in low back pain patients

Bel ağrılı hastalarda değerlendirme ölçütlerinin telefon veya kendi kendine uygulanmasının karşılaştırılması

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Summary

Objectives: Comparison of self-rating method and telephone interview method on outcome measures' results.

Methods: This cross-sectional study included 100 patients aged 18–40 years who applied to Physical Medicine and Rehabilitation outpatient clinics with mechanical low back pain. Outcome measures [Oswestry Disability Index (ODI), Roland Morris Disability Questionnaire (RMDI), Numeric Pain Rating Scale (NPRS), Istanbul Low Back Pain Disability Index (ILBPD] were administered, and the duration of administration was recorded by two different methods. The self-assessment method and scales were administered by patients in the outpatient clinic and the telephone interview method; scales were administered by the researcher via telephone-calls 24 hours after the out-patient visit.

Results: There were no significant differences observed in the results of outcome measures by the method of administration except the Istanbul Low-Back-Pain Disability Index (p=0.030). Outcome measures' results were highly correlated with one another when administered by different methods and orders of administration. Duration of administration was significantly shorter when outcome measures were administered by telephone interview (p<0.001).

Conclusion: Different methods of administration usually do not have an impact on outcome measure results. However, in some scales like ILBPDI, it may emerge as a factor affecting outcome measures' results. Therefore, adherence to an initially preferred administration method throughout the follow-up period is important regarding the reliability of the results.

Keywords: Low back pain; scale administration methods; telephone versus self administration.

Özet

Amaç: Kendi kendine uygulama ile telefonla uygulama yöntemlerinin değerlendirme ölçütlerinin sonuçlarına etkisi.

Gereç ve Yöntem: : Kesitsel olarak düzenlenen çalışmaya Fiziksel Tıp ve Rehabilitasyon polikliniklerine bel ağrısı şikayeti ile başvurmuş yaşları 18-40 arasında değişen 100 hasta dahil edilmiştir. Değerlendirme ölçütleri [Oswestry Dizabilite İndeksi (ODİ), Roland Morris Dizabilite Skalası (RMDS), Numerik Ağrı Skalası (NAS), İstanbul Bel Ağrısı Skalası (İBAS)] hastalara iki farklı yöntem ile uygulandı ve uygulama süreleri kayıt altına alındı. Kendi kendine uygulama methodunda hastalar değerlendirme ölçütlerini hastanede kendileri doldururken aynı hasta grubuna aynı değerlendirme ölçütleri 24 saat sonar telefon ile değerlendirme metot ile uygulandı.

Bulgular: IBAS dışındaki değerlendirme ölçütlerinin sonuçlarında iki yöntem arasında anlamlı fark saptanmadı. Değerlendirme ölçütü skorları her iki yöntem ve farklı uygulama sırasında birbirleri ile güçlü korelasyon gösterdi. Telefon ile uygulama süresi kendi kendine uygulamaya göre anlamlı ölçüde kısa gözlendi (p<0,001).

Sonuç: Farklı uygulama yöntemlerinin değerlendirme ölçütü skorlarına genellikle etkisi bulunmamaktadır. Ancak IBAS gibi bazı değerlendirme ölçütlerinde yöntem seçimi sonuçları etkileyebilmektedir. Bu sebeple takip sürecinde seçilecek uygylama yönteminin başlangıçta seçilen değerlendirme yöntemi ile aynı olması sonuçların güvenilirliği açısından önem taşımaktadır.

Anahtar sözcükler: Bel ağrısı; değerlendirme ölçütü uygulama yöntemleri; telefon veya kendi kendine.

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Introduction

Low back pain (LBP) is the most common disorder following common cold. It has a life-time prevalence of 60–90% and an annual incidence of 5–6%.[1,2] It is a significant health problem that affects all age groups and causes workforce loss due to severe disability.[3–7] Low back pain is the leading cause of disability in persons younger than 45 years and the third most common cause of disability above the age of 45 years.[8] It has been shown that the use of outcome measures has been increasing.[9] These outcome measures can assess many clinical parameters in disabling disorders including quality of life, functional status, pain level, disease progression and treatment monitoring. Oswestry Disability Index (ODI), Istanbul Low Back Disability Index (ILBPDI), Roland Morris Disability Questionnaire (RMDQ), and Numeric Pain Rating Scale (NPRS) are important outcome measures that have reliability and validity in Turkish and are widely used for back pain in clinical practice; the former three being used for disability assessment and the latter for pain assessment.[10–12] Three different methods are used for the administration of these scales, the self-assessment method which was the original administration method, face-to-face interview method, and the telephone interview method. There is an insufficient data about the impact of the methodological differences on results and durations of administration of these outcome measures.

The aim of our study was to examine the impact of the administration methods on the results and the administration durations of low back pain and disability scales (NPRS, ODI, ILBPDI, RMDQ).

Material and Methods

Study group

Cross-sectional design study randomly enrolled a total of 100 patients (50 males, 50 females) aged 18–40 years who applied to Marmara University, Physical Medicine and Rehabilitation outpatient clinics. Participants were diagnosed with mechanical low back pain after physical examination and imaging methods between December 2014 and June 2015. Individuals who were illiterate, had low back pain due to inflammatory, neoplastic, or infectious causes, and suffered from psychiatric disorders were excluded. After informing the patients about the outcome measures to be administered and obtaining their consent, they were randomized into two groups to rule out the impact of tiredness on scale results; in which four separate outcome measures were administered in two different orders of administration. Outcome measures were administered in the order of NPRS, ODI, ILBPDI, and RMDQ in the first group (Group A) and in the order of RMDQ, ILBPDI, ODI, and NPRS in the second (Group B). The duration of administration (min) was recorded by using two different methods. The self-assessment method was performed at the time of their outpatient clinic visit and the telephone interview method was performed 24 hours after outpatient visit. All telephone interviews were performed by the same researcher. The outcome measures were administered within the context of the diagnostic process and their results were assessed prior to implementing the planned treatments. The study was approved by Marmara University, Faculty of Medicine, Ethics Committee for Clinical Research (Approval number: 09.2014.0127).

Outcome measures

Numeric pain rating scale is used for pain assessment. In this scale, patients are asked to score their pain with a number between 0 and 10, depending on pain intensity. A score of 0 indicates no pain while a score of 10 indicates pain of maximum intensity.

Oswestry Disability Index is used to assess functional status, and it includes 10 questions related to pain intensity, personal care, lifting, walking, sitting, standing, sleeping, social life, travelling, and the amount of the change of pain. The percentage conversion of the sum of the scores ranging between 1 and 6 obtained by answering these questions were used for the assessment of disability: a percentage of 0% to 20% indicates minimal disability, 20% to 40% moderate disability, 40% to 60% severe disability, 60% to 80% crippled, and 80% to 100% bed bound or exaggerating symptoms.

Roland Morris Disability Questionnaire contains 24 questions related to low back pain intensity and its impact on an individual's daily activities such as walking, dressing, going upstairs and downstairs, and sleeping. A total score of 0–24 points is obtained by summing responses in the form of yes (0 point) and no (1 point). A total score of 0 refers to no disability and 24 indicates maximum disability.

Table 1. Demographic properties of both groups

	Group A	Group B	Total
Age, years, mean (SD)	41.74 (12.88)	41.36 (12.84)	41.55 (12.79)
Sex (n)			
Female	25	25	50
Male	25	25	50
Education (n)			
Primary	21	22	43
Secondary	8	5	13
High school	12	10	22
University	9	13	22

n: Number; SD: Standard deviation.

Istanbul Low Back Pain Disability Index includes 18 questions assessing the effects of low back pain on a person's activities such as going upstairs and downstairs, walking, bathing, tooth brushing, dressing etc. A total of 0–90 points are obtained from the answers "without any difficulty" (0 point), "with little difficulty" (1 point), "with some difficulty" (2 points), "with great difficulty" (3 points), "almost impossible" (4 points), and "impossible" (5 points). A total score of 0 indicates no disability and 90 refers to maximum disability.

The Turkish validated versions of outcome measurements were used in our study.

Statistical analysis

Data analysis was done using SPSS 16.0 (Statistical Package for the Social Sciences, Inc., Chicago, IL, USA) for Windows software package. Statistical comparisons were done using Chi-Square, independent samples t-test, and Mann Whitney U test. Correlation analysis was performed using Spearman's correlation analysis. A p value of less than 0.05 was considered statistically significant.

Results

Our study included a total of 100 patients, with 50 males and 50 females distributed evenly among two groups. The mean age of the study population was 41.6±12.8 years [Group A 41.7±12.9 years, Group B 41.4±12.8 years]. Forty-three (A=21, B=22) patients were primary school, 13 (A=8, B=5) were secondary school, 22 (A=12, B=10) were high school, and 22 (A=9, B=13) were college graduated. No significant differences were found between the demographic properties of both groups (Table 1).

The analysis of outcome measures results revealed that there were no significant differences between the results of outcome measures by the different administration methods, except ILBPDI. The results of Istanbul Low Back Disability Index were significantly higher in the telephone interview method (p=0.03). The correlation analysis between the outcome measures showed that the results obtained with both different methods and orders of administration were highly correlated (Table 2). Although the duration of administration of different outcome measures were not significantly different between the groups, the duration of the telephone interview method (9.63 min) was significantly lower than that of the self-rating method (17.6±7.3 min) (p<0.001). The time spent by a physician on the phone for rating low back pain with the outcome measures was independent of age, sex, and educational status while the time spent by a patient for self-rating was directly proportional to educational status.

Discussion

In our study, administration methods had no impact on the outcome measures' results except ILBPDI. Despite the presence of literature reports on the transla-

Table 2. Comparison of the outcome measure results between two administration methods

	Telephone interview	Self-administration	ICC (%95 CI)	p
NRS at Rest	4.81 (0–10)	4.78 (0–10)	0.914	0.757
NRS Activity	5.97 (0–10)	6.1 (0–10)	0.902	0.227
OswestryDisability Index	43.1 (8–98)	43.22 (8–90)	0.873	0.900
Roland Morris	13.43 (1–24)	13.69 (1–24)	0.918	0.271
ILBPDI	23.18 (1–68)	21.65 (0–70)	0.894	**0.030**

Data as mean and interquartile range (IQR) (25–75th percentile). ICC: Intracalss correlation coefficient; CI: Confidence interval; ILBPDI: İstanbul Low Back Pain Disability Index; NRS: Numeric Rating Scale. p<0.05 significant.

tion and validation of ILBPDI, we did not come across with any report on the effects of different methods of administration on the results of ILBPDI.[12] Differences in the results of ILBPDI, but not other outcome measures, suggests an outcome measure-specific factor leading to differences in the comprehensibility of the test by the patient with different methods of administration.

Weinberger et al.[13] found that the telephone interview method lasts shorter than the face-to-face interview method and there were weak-to-moderate correlations between both methods with respect to the results of the emotional, physical function, social function, and pain when used for SF-36 questionnaire in elderly patients. Ariza et al.[14] explored the effects of the administration of the outcome measures BASDI, BASFI, HAQ, ASQoL, and EuroQol by telephone interview 48 hours before hospital admission and by the self-rating method performed by patients at hospital admission in ankylosing spondylitis and psoriatic arthritis. They found that the results of the two administration methods were in good correlation with each other, but the telephone interview method had a shorter duration. The findings of our study were in accordance with those reported by Ariza et al. in that the results of both methods were highly correlated and similar to the results of both studies, the duration of the telephone interview method was shorter.[13,14] At the same time, that the duration being independent of educational status provides a significant advantage for the telephone interview method.

Limitations

Our study has some limitations such as; a relatively small study population, absence of the assessment by face-to-face interview method and absence of a separate patient group in which the two administration methods were administered in a different order. Also cost analysis with the telephone interview method and the possible impact of instantaneous moods of patients on the outcome measure results were not considered. Nevertheless, it is a valuable study in that it has showed usually the results of outcome measures by using different administration methods had good correlations with each other. On the other hand, it is not valid for all outcome measures. Consequently, the administration method can become a factor that may directly affect outcome measures results and this information provides an important contribution to the limited literature knowledge about this subject.

Conclusion

Different methods of outcome measures administration usually don't have an impact on the results. But it may be a factor that influence the results depending on the outcome measure administered. Thus, it is important for the reliability of results to adhere to the initially used method of administration of some outcome measures during follow-up of their clinical use. The significant time-saving advantage independent of educational status provided by the telephone interview method by virtue of a significantly shorter administration time should also be taken into consideration for all outcome measures.

Ethics Committee Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards (Approval number: 09.2014.0127).

Informed Consent: Informed consent was obtained from all individual participants included in the study.

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