Is Quick Dash Sports Module as Efficient as the Kerlan-Jobe Orthopedic Clinical Scale in Quantifying Shoulder Dysfunction?

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Abstract

Accurate quantification of shoulder dysfunction is a time consuming and difficult to interpret process for patients and health care professionals. The purpose of this study was to determine the relationship between the results of the Kerlan-Jobe Orthopedic Clinical Scale (KJOC) and the Quick DASH Sports Module (QD) in an attempt to determine the accuracy of their use in quantifying shoulder dysfunction. Participants consisted of National College Athletic Association (NCAA) Division III overhead athletes (28 males, 33 females) with a mean age of (± SD) 19.3 ± (1.1) years, mean weight of 173.6 ± (36.9) pounds, mean height of 67.8 ± (3.5) inches. The two functional questionnaires used were completed in a randomized order with consistent raters. The correlation between KJOC and QD was statistically significant at (r = -.825, p = .01). Similar results were obtained though non parametric analysis of relationship. Clinicians are also incited that the QD was found to be as effective as the KJOC in rating shoulder dysfunction in athletes. It is less time consuming and easy to interpret and to complete by patients.

INTRODUCTION

Demands placed on the shoulder during overhead motion are ample; it is accordingly a commonly injured site in the body [1]. Injuries to the shoulder complex range from shoulder impingement syndrome, rotator cuff pathology, biceps tendinitis, instability, and labral tears [2], in addition to the non-specific type of shoulder pain.

Since both diagnostic tools have been proven to be reliable, sensitive and specific for diagnosing the extent of shoulder dysfunction, the KJOC requires significantly more time to complete and to interpret by the patient. This study was performed to determine the relationship between the results of the Kerlan-Jobe Orthopedic Clinical Scale (KJOC) and the Quick DASH Sports Module (QD) as objective tools for quantifying the extent of shoulder dysfunction and to provide health care professionals with an insight on their respective ease of use, applicability and accuracy with an emphasis on their respective ease of administration and interpretation efforts.

METHODS

Sixty one Division III overhead athletes (28 males, 33 females) were recruited to participate in this study. Their mean age was 19.3 ± (1.1) years, mean weight was 78.7 ± (16.7) kg., and mean height was 172.2 ± (8.9) cm. Several overhead sports were represented in the sample. Subjects were classified as having shoulder dysfunction if they had history of noncontact shoulder injury and scored less than 80 on the KJOC scale, which is the minimum score needed to for the fair category within the scale [2]. Subjects were excluded if they were either in the acute stage of the injury or if they were not actively participating in their respective teams when the study was conducted.Upon entering the data collection station subjects completed the KJOC and QD scales and had demographic measures taken [3].

RESULTS

All statistical analyses were performed using the Statistical Package for Social Sciences (SPSS™) version 21 for Windows. Prior to final analysis, all data were screened for transcription errors, bivariate correlation, normality assumptions, homogeneity of variance, as prerequisites for parametric calculations of the analysis of relationship measures. Alpha level was set at 0.05 to control for type I error.

An analysis of relationship between the scores of the KJOC and QD scores using the Pearson Product Moment Correlation Coefficient followed by the respective significance testing and regression analysis.

The correlation between the Quick DASH sports module and the KJOC was calculated using a One Tailed Pearson Correlation Coefficient. The correlation was found to be statistically significant at \( r = -0.825, p = 0.01 \), with a linear regression equation of QD score = (-0.7 \times \text{KJOC score}) + 68.6). Similar findings were obtained through non-parametric analysis of relationship.

**DISCUSSION**

One of the objectives of this study was to determine if there was a correlation between scores on the KJOC and scores on the Quick DASH Sports Module. The results of the current study found extremely significant \( r = -0.825 \) negative correlation between the KJOC and Quick DASH Sports Module. This result is consistent with Alberta et al., (2010) who found a high correlation between the two questionnaires. A negative correlation signifies that a correlation exists between the two measures, as healthy scores on the KJOC are high (the higher the grade in KJOC, the better the functionality of the shoulder) and healthy scores on the Quick DASH Sports Module are low (the lower the grade, the higher the performance and the lower the disability).

To our knowledge, this study is the first to utilize the KJOC for assessing shoulder dysfunction without a primary focus on a single sport. Both tools have been validated for the assessment of shoulder injuries in overhead athletes. While the KJOC has been shown to be highly accurate, it is important to recognize that prior to this study, the KJOC has been used for assessing shoulder and elbow injury predominantly in baseball players. The participants in the current study were from a wide range of collegiate overhead athletes.

We concur with the current literature in that the KJOC is a helpful tool for use in conjunction with other clinical outcome measures. Additionally, the literature has found the Quick DASH to be valid and reliable. The findings of this study indicate that with a diverse population of collegiate overhead athletes, the KJOC and the Quick DASH sports module can be used interchangeably to identify shoulder dysfunction.

Our study shows there is a statistically significant correlation between these two measures. Given the length and difficulty of the KJOC questions, the Quick DASH Sports Module may be more ideal for use in the clinical setting as it requires little time to complete and is more easily understood by those who fill it out.

**CONCLUSION**

The results of this study showed that the amount of shoulder dysfunction could be effectively determined using either the KJOC scale or the Quick DASH Sports Module functional questionnaire; however the Quick Dash questionnaire is shorter and easier to complete.

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**REFERENCES**