The Bottom Line

The Bottom Line is a translation of study findings for application to clinical practice. It is not intended to substitute for a critical reading of the research article. Summaries are written by invitation of the Editor in Chief.

[Schmitt LC, Fitzgerald GK, Reisman AS, Rudolph KS. Instability, laxity, and physical function in patients with medial knee osteoarthritis. *Phys Ther*. 2008;88:1506–1516.]

What problems did the researchers set out to study, and why?

Several reports have identified factors that contribute to functional limitations in patients with knee osteoarthritis (OA), including quadriceps femoris muscle weakness, joint laxity, and self-reports of instability. The relationships between these factors and the relative contribution to function have not been examined. The researchers sought to examine self-reported knee instability and its relationship to medial knee laxity, varus alignment, quadriceps muscle force, and the impact of those factors on function.

Who participated in the study?

52 individuals with medial knee OA. In patients who had bilateral knee OA, the most symptomatic side was examined.

What new information does this study offer?

There were no differences in alignment, laxity, or strength among the 3 groups. Self-reported instability significantly predicted function beyond that of muscle force, laxity, or alignment. Neither laxity nor alignment contributed to predicting function.

How did the researchers go about this study?

Participants were classified into 3 groups based on reports of knee instability (no instability, mild instability not affecting function, instability that affects function). Limb alignment (radiograph), joint laxity (stress radiograph), quadriceps muscle force (maximal voluntary isometric contraction with electrical burst superimposition on an isokinetic dynamometer), and function (Knee Osteoarthritis and Outcome Score and a Stair Climbing Test) were assessed. Data were analyzed to determine both group differences and relationships among the variables.

How might the results of this study apply to physical therapist practice?

Self-reported knee instability is not correlated with knee joint laxity, but it contributes to low functional levels. Knee instability is different from laxity and is an important part of knee OA. Clinicians might want to include questions related to self-reports of instability for patients with knee OA when taking a medical history and when identifying impairments to target for intervention.

What are the limitations of the study, and what further research is needed?

This study had a relatively small sample size. The researchers used a homogenous sample of patients with medial knee OA, so results cannot be applied to other forms of knee OA. Future research is needed to further investigate the relationships between knee instability, function, and other important factors related to functional loss in knee OA.

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