INAHTA Briefs

Issue 2010/137

Title **School Scoliosis Screening Program**

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Reference Health Technology Assessment Report, MOH/P/PAK/186.09 (TR).
www.moh.gov.my/health_assesments/58

Aim

To assess the effectiveness and economic implications of a school scoliosis screening program.

Conclusions and results

Females achieve adolescence 2 years before males and are afflicted with scoliosis 3 to 4 times more frequently than males. The prevalence of scoliosis was higher in girls compared to boys. Prevalence rates for girls were low at 6 to 10 years of age, but increased rapidly from 11 to 14 years of age.

Fair-level evidence suggested that a school scoliosis screening program was able to detect scoliosis at a younger age and with smaller Cobb angle, and could reduce the frequency of surgical treatment. The cost of screening a child ranged from 0.066 US dollars (USD) to USD 43.7 depending on how it was calculated. Evidence also showed that a school scoliosis screening program was cost-effective.

Fair-level evidence suggested that Adams forward-bending test, measurement of angle of trunk rotation using a scoliometer, measurement of rib hump height using humpometer, and Moire topography can be used as tests for scoliosis screening in schools. The tests are not time consuming. However, the Adams forward-bending test may result in high false negatives, which may lead to misdiagnosis, while the use of other screening tests such as scoliometer, Moire topography, and humpometer may lead to high false positives and will cause overreferrals. Few studies have suggested that cutoff limits for referrals, eg, asymmetry of two Moire fringes, a humpogram deformity = 10 mm, and 7° or 8° of scoliometer angle, would lead to a reduction in the number of referrals for radiographic examination.

Evidence showed that radiographic examination for scoliosis follow-up was safe. Proper training of the staff involved in screening is necessary, as is a good referral and follow-up system based on ethical and organizational considerations.

Recommendations

Based on the above review, screening for scoliosis in school children is recommended only for high-risk groups, eg, girls at 12 years or age (standard six). A combination of modalities of screening tests, eg, Adams forward-bending test and scoliometer with angle of trunk rotation of 7°, is recommended with the aim to reduce the number of referrals. Organizational issues, eg, training, manpower, good referral system, treatment, and funding need to be addressed at all levels.

Methods

We searched, eg, MEDLINE, PubMed, EBM Reviews-Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, HTA databases, EBM Reviews-NHS Economic Evaluation Database, EBM Full Text-Cochrane DSR, ACP Journal Club, and DARE. No limitations were placed on the search. Relevant literature was appraised using the Critical Appraisal Skills Programme (CASP), and evidence was graded according to US/Canadian Preventive Services Task Force, or hierarchy of evidence for test accuracy studies, CRD Report No. 4 (2nd Edition). One case control study, 1 before-and-after study, and 19 cross-sectional studies were included.

Further research/reviews required

Cost effectiveness of selective screening.

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ISSN 1654-501X