

The Effectiveness of an Educational Intervention in the Appropriate Use of Pediatric Echocardiography

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Background: Congenital heart defects (CHD) include most congenital malformations. Despite the constant prevalence of CHD, inappropriate echocardiography requests pose a healthcare burden.

Objective: To evaluate the effectiveness of an educational intervention of the use of pediatric echocardiography as a primary diagnostic tool.

Design: A Prospective Clinical Study.

Setting: Bahrain Defence Force Hospital, Bahrain.

Method: The study was performed from October 2012 to January 2018. Pediatric echocardiography requests over 1,170 consecutive days were documented. Initial analysis was performed followed by an application of Appropriate Use Criteria (AUC) and subsequent reanalysis. Follow-up echocardiography were excluded. New cases echocardiograms were classified as having normal or abnormal findings. Abnormal findings were classified as required or not required intervention.

Result: One thousand six hundred forty-eight (55.3%) echocardiography tests were performed before the educational intervention and 1,329 (44.5%) were performed after. The follow-up cases were excluded. Two hundred twenty-eight had (15%) abnormal findings in the initial analysis compared to 138 (11.1%) in the reanalysis (OR: 0.71; 95% CI: 0.56 to 0.89). Abnormal findings requiring intervention were common after education (3.4% versus 7.8%. OR: 2.1; 95% CI: 1.3 to 3.5).

Conclusion: The implementation of an AUC intervention decreased the diagnostic yield of echocardiography but increased the yield of cases that required intervention.