

# Improving Solutions to Vascular Access Problems with Hemodialysis Patients through Multimedia Teaching Intervention

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## Abstract

A hemodialysis patient undergoes around 300 puncture procedures per year, and a failed access procedure could cause injury of the fistula, and also results in a number of possible complications. Our data analysis revealed the following factors leading to puncture failures: 1) Nurses are not knowledgeable or skillful enough to handle the procedure. 2) Nurses failed to assess situation or execute procedure according to the standard operating procedures. 3) The organization is not adequately equipped to provide the necessary personnel training. A marked improvement in performance was noted after employing multimedia aid in providing personnel instructions, including aids such as, vascular access textbooks, fistula access teaching manuals, vascular access teaching DVD files, vascular sound identification teaching sound file, and artificial arm puncture technique skill training sessions. Written test scores improved from 73.2 points to 92.2 points; success rates of artificial arm puncture procedures rose from 80% to 100%; and the vascular puncture failure rate dropped from 16.4‰ to 6.9‰. It is apparent from the foregoing that use of multimedia teaching aids in the course of the orientation and training classes could indeed decrease the vascular puncture failure rate.

**Key words: multimedia teaching, vascular access, puncture failure**

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