Cochrane for Clinicians

Putting Evidence Into Practice

Can Patient-Reported Outcome Measures Improve Clinical Management and Patient Care?

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Clinical Question

Are patient-reported outcome measures (PROMs) effective at improving patient-reported health outcomes and processes of care for patients and health care professionals?

Evidence-Based Answer

PROMs (e.g., CAGE questionnaire, Generalized Anxiety Disorder 7-item questionnaire) completed by patients (or other individuals pertinent to the patient) improve diagnosis and documentation of relevant health information in the patient's chart, such as accurate coding, severity of disease, and relevant changes with treatment related to the PROM (relative risk [RR] = 1.73; 95% CI, 1.44 to 2.08). PROMs also improve communication with health care professionals, as perceived by the patient, including discussion about side effects of treatment and other areas of concern (standardized mean difference [SMD] = 0.36; 95% CI, 0.21 to 0.52). The use of PROMs improves quality of life (SMD = 0.15; 95% CI, 0.05 to 0.26) and disease control (RR = 1.25; 95% CI, 1.10 to 1.41). However, PROMs seem to have little to no effect on a patient's general health perception, social functioning, or pain.[1]

These are summaries of reviews from the Cochrane Library.

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A collection of Cochrane for Clinicians published in *AFP* is available at https://www.aafp.org/afp/cochrane.

CME This clinical content conforms to AAFP criteria for CME. See CME Quiz on page 126.

(Strength of Recommendation: B, inconsistent or limited-quality patient-oriented evidence.)

Practice Pointers

Patient experience and understanding of their individualized health care are essential in providing meaningful and positive patient care. PROMs are tools that measure patient-reported outcomes, allowing a patient to report on their general health, quality of life, or functional status. PROMs can be disease-specific to screen for and monitor specific medical conditions (e.g., Patient Health Questionnaire-9), or they can monitor overall health (e.g., 36-item Short-Form Health Survey).[2] Patient input is often overlooked when discussing diagnoses and providing treatment plans.[1] Contextual factors, such as the type of encounter (e.g., routine visit vs. motivational interviewing) or a patient's behavior toward the physician, affect a patient's willingness or ability to accept and adhere to treatment. These contextual factors also affect a physician's willingness or ability to act on the feedback provided. Improving the processes of communication, such as allowing patients more flexibility in bringing up concerns, can ultimately lead to improved shared decision-making while providing holistic patient care.[1]

This Cochrane review sought to determine whether patient care improves when patients provide feedback using PROMs.[1] The review included 116 randomized controlled trials and cluster randomized controlled trials (N = 49,785) from high-income countries, with a mean follow-up of one month to two years. These studies were conducted in ambulatory outpatient settings. Primary outcomes included quality of life, general health perception, symptoms, and functioning. Many of these outcomes were assessed using a multitude of scoring systems to encompass a broad spectrum of illnesses (e.g., monitoring asthma symptoms vs. self-reported pain for chronic pain syndrome). Adverse effects were also evaluated, such as distress related to completing the PROM. Secondary outcomes included communication with health care professionals and health services and resources offered to and used by the patient. Excluded studies did not use feedback from PROMs as part of their intervention.

Implementing PROMs improved diagnosis and documentation, as well as communication between health care professionals and patients. When PROM feedback was provided, health care professionals were more likely to document a relevant diagnosis in the patient's medical chart for either the PROM (e.g., asthma severity determined using an asthma severity app on a smartphone) or for patient concerns if nonspecific PROMs were used (RR = 1.73; 95% CI, 1.44 to 2.08). Health care professional communication scores, as perceived by patients, also improved when PROMs were implemented (SMD = 0.36; 95% CI, 0.21 to 0.52). Disease control—specifically the condition that the PROM was designed to monitor—improved with PROM use, albeit only marginally (i.e., symptoms improved in mood, anxiety disorders, or depression, or the patient decreased the number of alcoholic drinks consumed; RR = 1.25; 95% CI, 1.10 to 1.41).

Among primary outcomes, very little improvement occurred in quality of life (SMD = 0.15; 95% CI, 0.05 to 0.26). PROMs had a small positive effect on patient-reported mental functioning (SMD = 0.16; 95% CI, 0.06 to 0.27), little to no effect on patient-reported physical functioning (SMD = −0.10; 95% CI, −0.30 to 0.10), and no effect on social functioning. It was not always clear how these parameters were defined in the individual studies.

Patient perceptions of their own health did not improve with the use of PROMs, although patients in the intervention groups reported better health perceptions than those in the control groups. The certainty of the evidence was low because of the risk of bias from the intervention design and small number of studies available.

This Cochrane review supports only generalized conclusions of the overall impact of patient-reported feedback to health care professionals. Many of the studies that were analyzed defined and measured each outcome so uniquely that direct, accurate comparison of the effects was difficult. Furthermore, many studies had a high risk of bias. These studies did not seem to take measures to ensure inclusion of special populations, and the results did not account for potential inequities related to socioeconomic status, ethnicity, or race.[1]

The National Institutes of Health funds the Patient-Reported Outcomes Measurement Information System (PROMIS) to be implemented into electronic health record software,[3] with the goal of making health care more patient centered by emphasizing the importance of understanding the implications of PROMs.[4] Overall, this Cochrane review demonstrates that the use of PROMs in clinical practice can improve some aspects of health care and gives patients a critical voice.

The practice recommendations in this activity are available at https://www.cochrane.org/CD011589.

The opinions and assertions expressed herein are those of the authors and do not reflect the official policy or position of the U.S. Army or the Department of Defense.

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Exercise Training for Adults Undergoing Maintenance Dialysis

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Clinical Question

What are the benefits of regular exercise for adults undergoing maintenance dialysis?

Evidence-Based Answer

Regular exercise probably improves functional capacity for adults undergoing maintenance dialysis and might be associated with small improvements in pain, depression, and quality of life; it is uncertain whether any effect on risk of death or cardiovascular outcomes occurs.[1] (Strength of Recommendation: B, systematic review and meta-analysis of lower-quality clinical trials.)

Practice Pointers

For patients with end-stage renal disease, peritoneal dialysis and hemodialysis can prolong life compared with conservative management. However, dialysis is also associated with a considerable commitment of time, and patients are at risk of discomfort and complications. Up to 60% of patients who initiate dialysis later regret the decision.[2] A previous Cochrane review found that regular exercise could improve fitness, walking capacity, and health-related quality of life among patients with all stages of chronic kidney disease.[3] The authors of this review sought to evaluate the effects of regular structured exercise training on death, cardiovascular events, fatigue, depression, functional capacity, and pain for adults with end-stage renal disease who were undergoing dialysis.

For this review, the authors performed a meta-analysis of 77 studies including 3,846 participants.[1] Three studies included patients on maintenance peritoneal dialysis, four studies included patients on peritoneal dialysis or hemodialysis, and the remaining studies included patients on hemodialysis only. Twenty-six studies were conducted in Europe or the United Kingdom, 22 in North America, 17 in Asia, 10 in the Middle East, eight in South America, four in Oceania, and two in Africa. Participants' mean age ranged from 30 to 72 years, and 62% were male.

The studies in this review included 100 different exercise comparisons lasting between eight weeks and two years (55% of the studies were three months or less). Regimens included aerobic training sessions lasting 10 to 90 minutes, resistance training sessions, combined aerobic and resistance exercises, range of movement exercises, and yoga (one study). Exercise training was completed during dialysis in 65 studies, before or after dialysis sessions in nine studies, and on nondialysis days in 11 studies. In the remaining studies, the timing of exercise was unclear.

The review authors noted that reported outcomes across the included studies were "numerous and disparate." For the primary outcomes addressed in this review, evidence was insufficient to determine an effect on death (only one death occurred in one study) or cardiovascular events (none were reported in any of the studies). Measures of fatigue differed too greatly across the studies to allow for a pooled estimate of effect, but based on the measures reported in the studies, there is low-certainty evidence that aerobic or resistance exercise reduced fatigue.

Seventeen studies used the 36-item Short-Form Health Survey (SF-36) to measure health-related quality of life. There was low- to very low–certainty evidence that aerobic or resistance exercise might improve physical or mental scores on the SF-36. Measures of pain (15 studies) and depression (11 studies) showed small improvements with aerobic, resistance, and combined exercise, but the small effect sizes and broad CIs mean this finding is of uncertain clinical significance. Moderate-certainty evidence showed that functional capacity—as measured by improvements on the six-minute walk test—probably improved with aerobic exercise (by about 53 m), resistance exercise (by about 45 m), or combined exercise (by about 50 m). Exercise training was also associated with small improvements in performance on two different approaches to sit-to-stand testing.

Based on an earlier Cochrane review,[3] Kidney Disease: Improving Global Outcomes guidelines recommend that patients with chronic kidney disease and hypertension participate in moderate-intensity physical activity for 150 minutes per week but note that exercise goals may need to be modified for some patients.[4] A 2021 guideline from the Renal Association recommends that for patients with end-stage renal disease who are on dialysis, exercise should be performed between and during dialysis sessions and that exercise should be available in all dialysis units.[5] This Cochrane review demonstrates that even in patients with end-stage renal disease who are on dialysis, exercise probably improves functional capacity and can be undertaken during dialysis sessions.

The practice recommendations in this activity are available at https://www.cochrane.org/CD014653.

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