
We conducted in two parts a systematic review of randomized controlled trials (RCTs) on electronic symptom reporting between patients and providers to improve health care service quality. Part 1 reviewed the typology of patient groups, health service innovations, and research targets. Four innovation categories were identified: consultation support, monitoring with clinician support, self-management with clinician support, and therapy. To assess the methodological quality of the RCTs, and summarize effects and benefits from the methodologically best studies. We searched Medline, EMBASE, PsycINFO, Cochrane Central Register of Controlled Trials, and IEEE Xplore for original studies presented in English-language articles between 1990 and November 2011. Risk of bias and feasibility were judged according to the Cochrane recommendation, and theoretical evidence and preclinical testing were evaluated according to the Framework for Design and Evaluation of Complex Interventions to Improve Health. Three authors assessed the risk of bias and two authors extracted the effect data independently. Disagreement regarding bias assessment, extraction, and interpretation of results were resolved by consensus discussions. Of 642 records identified, we included 32 articles representing 29 studies. No articles fulfilled all quality
requirements. All interventions were feasible to implement in a real-life setting, and theoretical evidence was provided for almost all studies. However, preclinical testing was reported in only a third of the articles. We judged three-quarters of the articles to have low risk for random sequence allocation and approximately half of the articles to have low risk for the following biases: allocation concealment, incomplete outcome data, and selective reporting. Slightly more than one fifth of the articles were judged as low risk for blinding of outcome assessment. Only 1 article had low risk of bias for blinding of participants and personnel. We excluded 12 articles showing high risk or unclear risk for both selective reporting and blinding of outcome assessment from the effect assessment. The authors’ hypothesis was confirmed for 13 (65%) of the 20 remaining articles. Articles on self-management support were of higher quality, allowing us to assess effects in a larger proportion of studies. All except one self-management interventions were equally effective to or better than the control option. The self-management articles document substantial benefits for patients, and partly also for health professionals and the health care system. Electronic symptom reporting between patients and providers is an exciting area of development for health services. However, the research generally is of low quality. The field would benefit from increased focus on methods for conducting and reporting RCTs. It appears particularly important to improve blinding of outcome assessment and to precisely define primary outcomes to avoid selective reporting. Supporting self-management seems to be especially promising, but consultation support also shows encouraging results.