SDC 1. Summary of Reports related to Enrollment and Attendance in CR

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| **Citation** | **Purpose/Objectives** | **Population Characteristics** | **Summary of Findings** |
| ***Enrollment/Adherence*** |  |  |  |
| Pack et al.3 | To describe trends in ICR utilization,  services provided during an ICR visit, and the patient, hospital, and regional factors that influence the receipt of ICR. | ICR utilization among 458 hospitals with 1,343,537 admissions with a qualifying diagnosis for outpatient CR. | ICR available at 223 (49%) of hospitals.  Patient utilization was 21.2%  Highest patient use in those undergoing cardiac surgery (43.3%)  Lowest in medically managed MI (15.6%) and HF 10.6%  Older age, multiple comorbidities, female sex, and Medicare insurance associated with lower likelihood of ICR utilization |
| Frechette et al.9 | Evaluate CR referral and participation rates in a rural setting. | 710 consecutive patients who underwent PCI, CABG or valve surgery | 98% initial CR referral rate  167 patients ineligible for CR  91 referred to on-site CR  84% participated in on-site of at least 1 session, median 18 sessions, median 12 d from discharge  440 sent to regional CR  60% participated in > 1 session, median 22 sessions, median 23 d from hospital discharge to start of CR |
| Cossette et al.6 | Assess sex and gender-related factors associated with CR enrollment following ACS among systematically referred patients. | 242 (14% women) ACS patients referred to a free, 12-wk CR program. | Associations with CR enrollment:  Men physically active prior to hospitalization and living near CR center.  Both men and women having radial entry site or no PCI vs femoral entry site.  Women ≥65 yr, diabetic, dyslipidemia, higher education level, non-smokers, living alone, perceived personal control over treatment, understanding of illness, less negative emotional representation, family support, low anxiety, living near CR and driving a car. |
| Bennett et al.15 | Determine whether multilevel factors are associated with CR attendance and adherence among underserved patients at a SNH | 171 patients hospitalized for a cardiac procedure or event in a SNH. 55.3 ± 8.3 yr, 33.3% female | 92 of 171 patients attended CR  Those with insurance more likely to attend compared to non-insured.  Belief in needing CR were more likely to attend.  CR attendees believed it was important for their recovery compared to non-attendees.  Psychological barriers included; lack of time, too many responsibilities, desire to stay at home, transportation difficulties.  Attenders had 1 fewer reported barrier than nonattenders. |
| Whited et al.10 | Explore the effects of implementation of the “Open Gym” scheduling model of CR administration on the rate of patient engagement and change in commonly measured clinical outcomes. | CR attendees, 63.3 ± 11.9 yr, 45% female, 65% non-Hispanic white | Similar attendance between groups  Program model did not predict completion (traditional 64% and Open Gym 65%)  Nonwhite participants lost more weight under traditional model than those in open gym  Those in traditional model had greater increase in 6MWT distance and peak METs |
| Harris et al.14 | Evaluate depression and anxiety symptoms as predictors of CR attendance and completion. | 60 phase 2 CR participants, 56.9±10.8 yr, 36.7% female, 57% White | 53% completed 100% of prescribed sessions.  Depression and anxiety not correlated with CR attendance or program completion. Will to live was associated with both.  Session attendance was lowest in those reporting highest anxiety and greatest will to live.  Attendance highest among those with college degree (99±4%) compared to < high school degree (32±29%)  57% dropout rate for those employed full-time and 78% for those on disability. |
| Farah et al.13 | Determine the association between cost sharing and adherence to CR | 603 Phase 2 CR participants | 39% of patients had cost-sharing responsibilities  82% had co-pays (median $20)  34% had unmet deductible (median $500)  Presence of cost-sharing associated with 6 fewer CR sessions.  Every $10 increase in copay, patients attended 1.5 fewer sessions. |
| Santiago de Araujo Pio et al.16 | Position statement aimed at translating evidence on interventions that increase CR enrollment and adherence into implementable recommendations | Not applicable | Strong recommendation and low quality of evidence for increasing CR enrollment by targeting health care providers (i.e., nurses and allied health providers) with physician reinforcement; and for interventions to increase CR enrollment to be delivered face-to-face.  Weak recommendation with moderate quality evidence to increase CR adherence with interventions being delivered remotely or with some of the CR program delivered unsupervised. |
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| ***Home-based CR and Telemedicine*** | |  |  |
| Thomas et al.17 | Identify the  core components, efficacy, strengths, limitations, evidence, gaps, and research necessary to guide the future delivery and potential reimbursement of HBCR in the United States | Systematic statement | CBCR recommended to all eligible patients.  HBCR recommended to low- to moderate-risk patients who cannot attend CBCR. |
| Berry et al.24 | Review of two clinical cases of patients facing barriers to participating in CBCR. | 2 case studies | Supervised HBCR through patients’ mobile device is feasible and can increase access to CR services. |
| Schopfer et al.18 | Explore the rationale for declining to participate in CR even when a HBCR program is available. | 630 VA patients referred to CR with 171 (70±7 yr, 1% female, 80% White) | Most common reasons for declining included:  61% were familiar with what to do for their heart health.  52% believed they did not need CR for their care  39% selected that they do not like getting phone calls  33% were not interested in making lifestyle changes  Other reasons included, competing life priorities and inadequate understanding of the benefits and rationale of CR |
| Schopfer et al. 19 | Compare the effects of HBCR versus FBCR on functional status in patients with IHD | 237 patients with recent IHD event who enrolled in HBCR (n=121, 65±8 yr, 1.7% female) or FBCR (n=116, 65±8 yr, 0.9% female) | Enrollment in HBCR was shorter (25 d) compared to FBCR (77 d) from event date.  HBCR patients more likely to complete >85% of sessions than those in FBCR. |
| Uddin et al.20 | Evaluate the feasibility and efficacy of a HBCR program in addition to UC in post-CABG surgery patients. | 142 CABG Patients, ~55 yr randomized to HBCR or UC | 61 of 71 HBCR participants completed the 12-mo intervention, whereas 31 of the 71 usual care group participants were lost to follow-up.  Greater reductions in CHD risk factors and improvements in HRQOL, mental well-being, and exercise capacity were seen for the HBCR group compared with the usual care group. |
| Imran et al. 22 | Conduct a systematic review and meta-analysis of RCTs to  compare the outcomes of HF patients who underwent (1)  HBCR versus usual care, (2) hybrid CR versus usual care, and  (3) HBCR versus CBCR | 31 randomized controlled trials, consisting of 1,791 HF patients  18 studies comparing HBCR and usual care  9 studies comparing hybrid CR and usual care  5 studies comparing HBCR with CBCR | Both HBCR and hybrid CR  significantly improved functional capacity, but only HBCR improved hr-QoL over usual care.  Compared with CBCR, patients in HBCR achieved similar functional capacity and hr-  QoL outcomes |
| Krishnamurthi et al. 21 | Determine the predictors of participation and completion of the HBCR program at the San Francisco VA | 724 patients with ischemic heart disease, 66.76 ± 7.86, 2% female, 78% White. | HBCR participation rate of 43%  Predictors of HBCR  Each 5 yr increase in age associated with at 16% lower odds of HBCR participation.  CABG patients twice as likely to participate in HBCR compared to PCI (*P*=.05)  48% completed HBCR  CABG patients twice as likely to complete compared to PCI |
| Abbreviations: 6MWT, six minute walk test; AACVPR, American Association of Cardiovascular and Pulmonary Rehabilitation; ACS, acute coronary syndrome; BCBS, Blue Cross Blue Shield; BMI, body mass index; CABG, coronary artery bypass graft; CBCR, center based cardiac rehabilitation; CR, cardiac rehabilitation; CV, cardiovascular; CVD, cardiovascular disease; FFS, fee-for-service; GRADE, Grading of Recommendations Assessment, Development, and Evaluation; HBCR, home based cardiac rehabilitation; HF, heart failure; ICR, inpatient cardiac rehabilitation; IHD, ischemic heart disease; MET, metabolic equivalent of task; MI, myocardial infarction; NSTEMI, non ST-elevation myocardial infarction; OR, odds ratio; PA, physical activity; PCI, percutaneous coronary intervention; PPO, preferred provider organization; PTCA, percutaneous transluminal coronary angioplasty; SNH, safety net hospital; STEMI, ST-elevation myocardial infarction; TIA, transient ischemic attack; US, United States; VA, Veterans Affairs. | | | |