**SDC Table 1. Characteristics of Included Studies**

| Trial Name; Author (Year) | Study Character-istics | Study Population | Audio Intervention(s) | Comparator(s) | Sample Characteristics |
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| ADVICE; Doupis (2019)15 | Provider: PhysicianSetting: Primary and secondary outpatient diabetes care centersCountry: GreeceFunder: MSD (Merck and Co.), GreeceRisk of bias: High | Diabetes type: Diabetes mellitus type 2; poorly controlled (glycosylated hemoglobin [HbA1c] >7%)Other inclusion criteria: 18 years of age or older treated with oral glucose lowering medications for at least 1 year prior to enrollmentExclusion criteria: Diabetes mellitus type 1, gestational diabetes, hospitalized patients, and history of alcohol or drug abuse within the year preceding enrollment; pregnant, breastfeeding, or female patients with childbearing potentialPopulations at risk for disparities: More than 25% older adults (65+) | Intervention (G1): Empowerment group (systematic patient education program) + UCN=230Intervention type: Audio-only with supports to supplement with audio careAudio intervention: Telephone communication to support patients on the attainment of the treatment goals; predetermined discussion topics included diet, physical activity, adherence to prescribed medication, etc.Audio frequency: Biweekly, with an average of 15.3 total telephone sessions per patientAudio duration: Not reportedEducational resources: Sponsor-approved educational material on diabetes based on the national and international recommendations  | Comparator (G2): UC N=227Comparator type: Referred to or directed to seek healthcare as neededDescription: Standard-of-care treatment | Mean age (SD)62.7 (11.4)Female199 (43.5%)RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedications Biguanides: 301 (65.9%)Dipeptidyl peptidase 4 (DPP-4): 210 (46.0%)Sodium-glucose co-transporter 2: 104 (22.8%)Insulin (all types): 8 (1.8%) ComorbiditiesAny: 346 (75.7%)Hypertension: 44.8%Dyslipidemia: 39.0%Ischemic heart disease: 4.6%Myocardial infarction (MI): 1.7%Baseline HbA1c % mean (SD):7.8 (0.9) |
| The ENhancing outcomes through Goal Assessment and Generating Engagement in Diabetes Mellitus (ENGAGE-DM); Lauffenburger (2019)25(ENGAGE-DM); Lauffenburger (2019)25 (continued) | Provider: PharmacistSetting: Individuals covered under a large private health insurance companyCountry: United StatesFunder: AstraZenecaRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2; poorly controlled (HbA1c 8% or greater)Other inclusion criteria: Aged 18 or older, filled 1 or more oral hypoglycemic agents (OHAs) within the 12 months priorExclusion criteria: Insured by Medicaid or Medicare, had <3 months of continuous enrollment, had recently filled insulin, or had no telephone contact information | Intervention (G1): Telephone-based patient-centered intervention + UCN=700Intervention type: Audio-only with supports to supplement with audio careAudio intervention: Telephone consultation to review study medications, elicit reasons for poor diabetes control, and identify strategies for improvementAudio frequency: Single phone consultation with up to 3 follow-up calls over a 12-month periodAudio duration: 30 minutesEducational resources: Simple pillbox and shared decision-making postcard | Comparator (G2): UC N=700Comparator type: Other UCDescription: Patients randomized to UC were not contacted in any way by the intervention staff | Mean age (SD)G1: 54.9 (8.1)G2: 54.6 (8.4)FemaleG1: 242 (34.6%)G2: 279 (39.8%)RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedicationsMean (SD) number of OHAs:G1: 2.1 (1.0)G2: 2.1 (1.0)N (%) taking concomitant non-insulin injectable:G1: 78 (11.1%)G2: 82 (11.7%)Baseline medication adherence, mean (SD):G1: 80.5 (21.3)G2: 79.8 (22.1)ComorbiditiesHypoglycemia:G1: 0.4%G2: 0.3%Diabetic retinopathy:G1: 3.4%G2: 3.8%Diabetic neuropathy:G1: 54.2%G2: 55.9%Hypertension:G1: 71.6%G2: 69.4%Hyperlipidemia:G1: 67.6%G2: 65.6%Chronic kidney disease:G1: 50.0%G2: 51.0%Obesity:G1: 27.1%G2: 26.3%Coronary artery disease:G1: 12.3%G2: 11.0%Asthma/COPD:G1: 9.7%G2: 8.9%Liver disease:G1: 8.3%G2: 8.4%Depression:G1: 4.7%G2: 5.6%Stroke/transient ischemic attack:G1: 4.0%G2: 2.8%Acute stress:G1: 1.6%G2: 1.8%Congestive heart failure:G1: 0.9%G2: 0.9%Baseline HbA1c % mean (SD):G1: 9.3 (1.6)G2: 9.4 (1.6) |
| Varney (2014)28Varney (2014)28 (continued) | Provider: Registered dieticianSetting: Hospital diabetes clinicCountry: AustraliaFunder: St. Vincent’s HospitalRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2Other inclusion criteria: Baseline HbA1c >7%Exclusion criteria: Non-English speaking, cognitively impaired, receiving palliative care, severely hearing impaired, or without telephone access | Intervention (G1): Telephone coaching + UCN=47Intervention type: Audio-only to supplement with audio careAudio intervention: Telephone coaching to establish and monitor goals around diet, exercise, and risk factors and recommend changes to medicationAudio frequency: Monthly calls for 6 monthsAudio duration: 45 minutes (initial call), 20 minutes (follow-up calls) | Comparator (G2): UC N=47Comparator type: Referred or directed to seek care as neededDescription: Access to diabetes clinic UC services, including a diabetes clinic staffed by endocrinologists, diabetes educators, and dietitians; participants typically accessed clinics every 3–6 months and visited their general practitioner as needed | Mean Age (95% CI)G1: 59 (95% CI, 56 to 62)G2: 64 (95% CI, 61 to 66)FemaleG1: 13 (28%)G2: 17 (36%)RaceWhite onlyG1: 46 (98%)G2: 37 (79%)Asian/IndianG1: 1 (2%)G2: 8 (17%)Afro-CaribbeanG1: 0 (0%)G2: 2 (4%)Hispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedicationsInsulin:G1: 25 (53%)G2: 29 (62%)Sulphonylureas:G1: 28 (60%)G2: 19 (40%)Metformin:G1: 31 (81%)G2: 33 (70%)Other medication (unspecified):G1: 10 (21%)G2: 9 (19%)ComorbiditiesNot reportedBaseline HbA1c % mean (95% CI)G1: 8.2 (95% CI, 8.0 to 9.7),G2: 8.5 (95% CI, 8.1 to 8.9) |
| Baron (2017)32Baron (2017)32 (continued) | Provider: Registered nurseSetting: Diabetes clinicCountry: United KingdomFunder: Policy Research Programme of the Department of Health for EnglandRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 1 or 2; poorly controlled (HbA1c of 7.5% or higher)Other inclusion criteria: Aged 18 or older, with the latest HbA1c collected within the last 12 months, taking insulin, and fluent and literate in EnglishExclusion criteria: Previous experience using mobile telehealth (MTH), regular extended travels outside the United Kingdom, home visits by a district nurse for BG monitoring and/or insulin administration, a diagnosis of kidney failure or sickle cell disease, pregnancy, and dexterity/visual problems compromising the use of a mobile phonePopulations at risk for disparities: More than 50% BIPOCMore than 50% with limited English proficiency | Intervention (G1): MTH + UCN=45Intervention type: Audio-only with supports to supplement with audio careIntake: Provision of study equipment (BG meter, BP monitor, mobile phone, and Bluetooth cradle) and trainingAudio intervention: Nurses provided feedback on out-of-range clinical readings (as needed), education on lifestyle changes, and supported insulin titrationAudio frequency: Education occurred weekly for 6 weeks; other calls as neededAudio duration: Not reportedMonitoring tools: BG meter, BP monitor, mobile phone, and Bluetooth cradle allowed participants to store and transmit diabetes-related data (BG and BP readings, time since last meal, level of physical activity performed that day, insulin dose, and weight) to an MTH nurse | Comparator (G2): UC N=36Comparator type: Synchronous in-person visitsDescription: Standard care at the diabetes clinic consisted of follow-up appointments with a DSN every 3–4 months, and 1 annual or 2 semi-annual appointments with diabetes consultants, depending on glycemic control; a DSN was available during working hours to respond to urgent patient queries | Mean Age (SD)G1: 58.2 (13.6)G2 55.8 (13.8)FemaleG1: 14 (31.11%)G2: 21 (58.33%)RaceBlackG1: 16 (35.6%) G2: 11 (30.6%)AsianG1: 15 (33.3%) G2: 14 (38.9%)WhiteG1: 11 (24.4%) G2: 9 (25%)Other (not specified)G1: 3 (6.7%) G2: 2 (5.6%)Hispanic or LatinoNot reportedBachelor’s degree or higherG1: 13 (28.89%)G2: 6 (16.67%)MedicationsOral and insulin:G1: 35 (77.8%) G2: 25 (71.4%) ComorbiditiesNumber of comorbidities,mean (SD):G1: 0.7 (0.9) G2: 1.0 (1.1)Baseline HbA1c % mean (SD)G1: 9.1 (1.8)G2: 8.9 (1.7) |
| Cholesterol, Hypertension, and Glucose Education study (CHANGE); Crowley (2013)23Cholesterol, Hypertension, and Glucose Education study (CHANGE); Crowley (2013)23 (continued)Cholesterol, Hypertension, and Glucose Education study (CHANGE); Crowley (2013)23 (continued) | Provider: Registered nurseSetting: Primary care clinicsCountry: United StatesFunder: Robert Wood Johnson Foundation Disparities Research for Change program; Kate B. Reynolds FoundationRisk of bias: Low | Diabetes type: Diabetes mellitus type 2Other inclusion criteria: Aged older than 18 years, self-reported black/African American race, ≥1 PCP visit in the past year, a type 2 diabetes *International Classification of Diseases* (Ninth Edition) code within 3 years, ≥1 HbA1c measurement in the past yearExclusion criteria: Diagnosis of dementia, psychosis, or metastatic cancer; receipt of dialysis; recent (3 months) hospitalization for stroke, MI, or coronary revascularization; pregnancy, expected pregnancy, or breastfeeding; nursing home residence; lack of telephone access; severely impaired speech/vision; non-English speakingPopulations at risk for disparities: 100% BIPOCMore than 25% low incomeMore than 25% low health or digital literacy | Intervention (G1): Nurse-administered telephone intervention + UCN=182Intervention type: Audio-only with supports to supplement with audio careAudio intervention: Nurses delivered self-management education modules over telephone addressing 3 domains: disease management, psychosocial determinants of disease control, and tailored behavior changeAudio frequency: Intervention patients received a mean (SD) of 9.9 (3.0) of the 12 scheduled monthly self-management intervention callsAudio duration: Mean (SD): 17.1 (7.3) minutesAsynchronous communication: Medication management through nurse-PCP contacts at 3, 6, and 9 months; nurses summarized participants’ status and encouraged PCPs to make medication changes based on the summary, if appropriate; nurses offered PCPs to facilitate medication changes by communicating with the participant and arranging follow-up laboratory studiesEducational resources: Education modules that were used in the audio component; intervention materials were designed for low-income/low-health-literacy patients  | Comparator (G2): UC N=177Comparator type: Usual careDescription: UC with PCP | Mean age (SD)G1: 56 (12)G2: 57 (12)FemaleG1: 126 (69%)G2: 133 (75%)RaceBlack/African American:359 (100%)Hispanic or LatinoNot reportedBachelor‘s degree or higherNot reportedMedicationsNo. of diabetes agents, mean (SD): G1: 1.6 (0.9)G2: 1.7 (0.9) Patients using insulin, N (%):G1: 93 (51%)G2: 92 (52%) No. of antihypertensive agents, mean (SD):G1: 2.6 (1.5)G2: 2.9 (1.6) No. of cholesterol-lowering agents, mean (SD):G1: 0.8 (0.6)G2: 0.9 (0.6) ComorbiditiesHypertension, N (%):G1: 171 (94%)G2: 170 (96%)Coronary artery disease, N (%):G1: 56 (31%)G2: 53 (30%) Chronic kidney disease, N (%):G1: 20 (11%)G2: 28 (16%) Congestive heart failure, N (%):G1: 33 (18%)G2: 28 (16%) Atrial fibrillation, N (%):G1: 15 (8%) G2: 14 (8%)Baseline HbA1c % mean (SD) G1: 8.0 (0.1)G2: 8.0 (0.1) |
| Chamany (2015)17Schechter (2016)37Chamany (2015)17Schechter (2016)37 (continued) | Provider: Educator, counselor, or coachSetting: NYC Department of Health and Mental Hygiene A1c Registry; Research setting not connected to a clinical settingCountry: United StatesFunder: National Institute of Diabetes and Digestive and Kidney Diseases; Einstein–Mount Sinai Diabetes Research Center; New York Regional Center for Diabetes Translation ResearchRisk of bias: High | Diabetes type: Diabetes mellitus type 1 or 2; poorly controlled (recent A1c test >7.0%)Other inclusion criteria: Adults aged older than 18 years who had not opted out of receiving communications from the Registry and lived in 1 of the 10 ZIP codes of the South BronxExclusion criteria: Those with plans to move from NYC within 12 months, inability to read or speak in English or Spanish, evidence of cognitive dysfunction, history of or intention to have bariatric surgery, or women who reported only having diabetes during pregnancyPopulations at risk for disparities: More than 50% BIPOCMore than 50% low incomeMore than 50% immigrants or refugeesMore than 50% with limited English proficiency | Intervention (G1): Telephone and print materials + UCN=443Intervention type: Audio-only with supports to supplement with audio careAudio intervention: Self-management support that covered problem solving, goal setting to increase self-efficacy, medication adherence, healthy eating and physical activity topics tailored based on participant preferences, and behavioral activation for mailed items, such as pedometer or pill boxAudio frequency: Average 4.6 intervention phone calls over 12 months; increased based on baseline A1c, as per the protocol; average of 3.4 calls for those in the >7% to 9% A1c tier (protocol maximum was 4 calls) and average of 6.3 calls completed for those in the >9% A1c tier (protocol maximum was 8 calls)Audio duration: Average 109.8 minutes over 12 months; increased based on baseline A1c; average of 85.5 for those with a baseline A1c <9% and 144.7 for those with a baseline A1c >9%Educational resources: Low-literacy print diabetes self-management materials mailed at beginning of intervention and every 3 months; retention incentives to promote healthy choices (e.g., pedometers) were mailed along with print materials every 3 months  | Comparator (G2): Enhanced UC N=498Comparator type: Educational or community-based resourceDescription: Low-literacy print diabetes self-management materials mailed at beginning of intervention and every 3 months; retention incentives to promote healthy choices (e.g., pedometers) were mailed along with print materials every 3 months | Mean age (SD)56.3 (11.7)Female599 (63.7%)RaceBlack: 263 (28%)White:9 (1%)All other:32 (3.4%)Hispanic or Latino637 (67.7%)Bachelor’s degree or higherNot reportedMedicationsNot reportedComorbiditiesOverweight/obesityBMI (kg/m2), mean (SD):32.1 (7.6)Baseline HbA1c % mean (SD)G1: 9.3 (2.1)G2: 9.1 (2.0) |
| McMahon (2012)22 | Provider: Certified diabetes educator (one advanced practice nurse and 1 pharmacist)Setting: Department of Veterans Affairs (VA) Boston Healthcare SystemCountry: United StatesFunder: VA Health Services Research and Development, National Institutes of Health, and the Department of the Army Cooperative AgreementRisk of bias: Low | Diabetes type: Diabetes mellitus type 2; poorly controlled (A1c greater >8.5%)Other inclusion criteria: Aged older than 25 years, ability to understand written and spoken English, access to a telephone, willingness to use a notebook computer and glucose and BP monitoring devices, and have a VA-based PCP at 1 of 4 hospital-based clinics or 10 community-based outpatient clinicsExclusion criteria: None reportedPopulations at risk for disparities: 100% veterans | Intervention (G1): Telephone-based care management group (G1) + UCN=51Intervention type: Audio-only with supports to supplement with audio careIntake: Initial assessment with care manager to review glucose and blood pressure monitoring techniques and schedules and received instruction in core content areasAudio intervention: Interim follow-up telephone calls where the manager reviewed the home glucose and BP readings with the participant; the care manager could review progress, reinforce nutritional and lifestyle modifications, and make medication changes using the treatment algorithms that were developed from and were consistent with the standards of the American Diabetes AssociationAudio frequency: Biweekly (approximately); Audio duration: Not reportedMonitoring tools: Monitoring devices for glucose and BP measurementsIn-person component: Follow-up visits every 3 months | Comparator (G2): Web trainingN=50Comparator type: Educational or community-based resourceDescription: UC supplemented with internet access and online self-management resources | Mean age (SD)60.2 (10.8)Female8 (5.3)\*RaceWhite:74.2%Black:12.6%Other (not specified):2.7%Hispanic or Latino9.3%College graduate or higher25.9%MedicationsNot reportedComorbiditiesNot reportedBaseline HbA1c % mean (SD)G1: 9.9 (1.2)G2: 9.6 (1.0)G3: 10.1 (1.4) |
| Mons (2013)21Mons (2013)21 (continued) | Provider: Practice nurseSetting: General practicesCountry: GermanyFunder: German Federal Ministry of Education and ResearchRisk of bias: Low | Diabetes type: Diabetes mellitus type 2; poorly controlled (HbA1c >7.5%)Other inclusion criteria: Adult patients in general practices located in Southwest GermanyExclusion criteria: Living in a nursing home, insufficient knowledge of the German language, and visiting the general practitioner for palliative or emergency care only | Intervention (G1): Supportive telephone-based counseling + UCN=103Intervention type: Audio-only to supplement with audio careAudio intervention: Sessions were conducted according to a written manual and were based on a standardized questionnaire that asked about patient’s physical and mental condition, medication adherence, medical symptoms, and lifestyle; questionnaire was designed to motivate patients to improve their health behaviors, to identify problems regarding diabetes therapy and self-management, and to facilitate early detection of diabetes-associated complications; if patient’s answers indicated complications or issues that might compromise the success of diabetes therapy, the practice nurse alerted the general practitioner, who then decided about further actions and contacted the patient, if neededAudio frequency: MonthlyAudio duration: Questionnaire took about 10 minutes; duration of entire session not reported | Comparator (G2): UC N=101Comparator type: Other UCDescription: No study-related telephone-based counseling sessions or other systematic procedures; UC with the general practitioner | Mean age (SD)G1: 68 (17)G2: 67 (15)FemaleG1: 41 (39.8%)G2: 38 (37.6%)RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedicationsNot reportedComorbiditiesCoronary heart disease, N (%):G1: 25 (24.8%)G2: 23 (24.0)Diabetic nephropathy, N (%):G1: 19 (19.2%)G2: 11 (11.7%)Total cholesterol (in mg/dl), Mean (SD):G1: 194.6 (41.7)G2: 193.4 (44.7)HDL cholesterol (in mg/dl), Mean (SD):G1: 45.8 (12.2)G2: 51.0 (24.3)Blood pressure, diastolic (in mmHg), Median (IQR):G1: 80 (5)G2: 80 (14.5)Blood pressure, systolic (in mmHg), Median (IQR):G1: 140 (20)G2: 135 (15.5)Baseline Hba1c % (IQR)G1: 8.0 (IQR, 0.9)G2: 8.2 (IQR, 1.1) |
| Crowley (2016)35Crowley (2016)35 (continued)Crowley (2016)35 (continued) | Provider: Registered nurseSetting: Durham VA Medical CenterCountry: United StatesFunder: VARisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2; poorly controlled (HbA1c >9.0% for >1 year)Other inclusion criteria: Veterans; minimum of 2 HbA1c measurements during the period of assessment for HbA1c control; an assigned Durham VA Medical Center PCPExclusion criteria: Inability to communicate by telephone (e.g., no access, hearing/speech impediment), dementia, psychosis, life-limiting illness, recent cardiovascular event or stroke, active alcohol/substance abuse, prior hypoglycemic seizure or coma, refusal to perform self-monitoring of blood glucose (SMBG), or use of continuous subcutaneous insulin infusion pumpsPopulations at risk for disparities: 100% veteransMore than 50% BIPOCMore than 25% low incomeMore than 25% low health or digital literacy | Intervention (G1): Advanced Comprehensive Diabetes Care (ACDC)N=25Intervention type: Audio-only with supports to adding new synchronous interaction (with provider) via audioAudio intervention: Phone calls with a home telehealth nurse to review self-monitored blood glucose readings, reconcile medications, and assess diabetes medication adherence; nurses also discussed self-management tips related to symptom recognition, medication administration, diet, and exercise; participants were notified by phone about any changes to their medication regimenAudio frequency: Biweekly calls for 6 weeksAudio duration: 30 minutesAsynchronous communication: Automated calls through interactive voice responses system for daily reminders to self-monitor blood glucoseMonitoring tools: Monitoring devices for blood glucose | Comparator (G2): UC N=25Comparator type: Educational or community-based resource Description: Participants randomized to UC were not contacted by telehealth nurses but received an educational packet and continued diabetes management with existing providers | Mean age (SD)G1: 60 (8.4)G2: 60 (9.2)FemaleG1: 0 (0%)G2: 2 (8%)RaceBlackG1: 12 (48%)G2: 15 (60%)White G1: 13 (52%)G2: 8 (32%)Other (not specified)G1: 0 (0%)G2: 2 (8%)Hispanic or LatinoG1: 1 (4%)G2: 2 (8%)Bachelor’s degree or higherNot reportedMedicationsUnsepcified diabetes medication 50 (100%)ComorbiditiesNot reported |
| Van Dyck (2013)30 | Provider: PsychologistSetting: Endocrinology department at an academic hospitalCountry: BelgiumFunder: Fund for Scientific Research FlandersRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2Other inclusion criteria: Ages 35–75 years, BMI 25–35 kg/m2, <12% HbA1c, >6 months post-diagnosis of type 2 diabetes, pharmaceutically treated for type 2 diabetes, no documented physical or medical limitations, Dutch speaking, having a telephone number and having a follow-up appointment with their endocrinologist during the recruiting period from July to December 2007Exclusion criteria: Not reported | Intervention (G1): Physical activity intervention (telephone-based motivational interviewing) + UCN=60Intervention type: Audio-only with supports to supplement with audio careIntake: Single face-to-face session Audio intervention: Individually tailored motivational interviewing delivered via telephone that included counselling on goal setting, self-monitoring, self-efficacy, benefits, decisional balance, problem-solving strategies, social support, and relapse preventionAudio frequency: Seven calls over 24 months (from original citation: every 2 weeks for the first 4 weeks, every 4 weeks for the next 20 weeks)Audio duration: 15–20 minutesMonitoring tools: Pedometer to measure daily count of steps and notebook to record step count and non-walking activities  | Comparator (G2): UC N=32Comparator type: Other UCDescription: No additional details reported | Mean age (SD)62 (9)Female29 (31%)RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedicationsNot reportedComorbiditiesNot reportedBaseline HbA1c % mean (SD)7.3 (0.9) |
| Gudban (2021)33Gudban (2021)33 (continued) | Provider: Registered dieticianSetting: Hospital clinicCountry: IsraelFunder: Not reportedRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2Other inclusion criteria: All diabetic patients being discharged from the hospital, older than 18 years of age, both men and womenExclusion criteria: Patients with known CVD (old MI, cerebrovascular event, heart failure); renal failure; dementia; cancer (active or within the last 5 years); recent surgery (within the last 6 months); chronic infection (within the last 6 months); or any chronic autoimmune, inflammatory, or infectious disorder; not able to sign a consent form and those who were not willing to come for a follow-up visit 3 months after discharge | Intervention (G1): Dietary intervention + UCN=12Intervention type: Audio-only with supports to supplement with audio careIntake: None specifiedAudio intervention: Telephone call conversation where the dietician stressed the importance of eating a Mediterranean diet, eating the right amounts of food as was determined, and encouraging patients to be active dailyAudio frequency: Weekly for 3 monthsAudio duration: Not reportedEducational resources: Basic diabetes self-management education before discharge from the hospital was conducted for every patient in the clinical trial | Comparator (G2): UC N=10Comparator type: Other UCDescription: No description of care for control group, presumably usual care after hospital discharge | Mean age (SD)G1: 55 (7)G2: 59 (10)FemaleG1: 6 (50%)G2: 5 (50%)RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedicationsNot reportedComorbiditiesNot reportedBaseline HbA1c % mean (SD)G1: 8.1 (9.1)G2: 7.8 (0.6) |
| Karhula (2015)27Karhula (2015)27 (continued) | Provider: Registered nurseSetting: Social and healthcare districtCountry: FinlandFunder: European Commission Information and Communication Technologies Policy Support Program, EksoteRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2Other inclusion criteria: HbA1c level, which needed to be above 6.5% within 1 year prior to the screening, diabetes diagnosis at least 3 months earlier; 18 years of age or older; ability to fill in questionnaires in Finnish, ability to use the remote patient monitoring system and the devices provided; having adequate cognitive capacities to participate; and being able to walkExclusion criteria: Not reported | Intervention (G1): Mobile health coaching and self-monitoring of health parameters with the help of a remote patient monitoring system + UCN=208Intervention type: Audio-only with supports to supplement with audio careAudio intervention: Participants received calls from a health coach (registered nurse) focused on providing information, assistance and support in making behavior changeAudio frequency: One call every 4 to 6 weeks (average 8.5 total calls per participant)Audio duration: 30 minutes (average 19.2 minutes per call)Educational resources: Mobile app, self-management guideMonitoring tools: Mobile phone, BP meter, glucometer  | Comparator (G2): UC N=79Comparator type: Educational or community-based resourceDescription: Disease management information booklet and care they would have received in the absence of the study, which included laboratory tests, taken once a year and 1 appointment or phone call by a nurse or doctor | Mean age (SD)G1: 66.6 (8.2)G2: 65.5 (9.6)FemaleG1: 81 (45%)G2: 30 (43%)RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherG1: 27 (15%)G2: 12 (17%)MedicationsNot reported ComorbiditiesHeart diseases:G1: 47 (26.1%)G2: 15 (21%)Cerebrovascular disease: G1: 9 (5%)G2: 3 (4%)Chronic pulmonary disease, including COPD:G1: 19 (10.6%)G2: 12 (17%)Connective tissue disease or rheumatic disease: G1: 36 (20%)G2: 9 (13%)Cancer: G1: 12 (6.7%)G2: 4 (6%)Other (hypertension most common):G1: 135 (75%)G2: 52 (74%)Baseline HbA1c % meanG1: 7.25G2: 7.20 |
| REMOTE Study; Nicolucci (2015)20REMOTE Study; Nicolucci (2015)20 (continued)REMOTE Study; Nicolucci (2015)20 (continued) | Provider: Registered nurseSetting: General practitioners’ officesCountry: ItalyFunder: MSD Italia (Pharmaceutical company)Risk of bias: High | Diabetes type: Diabetes mellitus type 2Other inclusion criteria: Aged older than 45 years; in treatment with sulfonylureas or treated with basal insulin (alone or in association with OHAs); able to perform blood glucose self-monitoring; HbA1c between 7.5% and 10%; BP >130/80 mm Hg regardless of the presence of antihypertensive treatmentExclusion criteria: Diabetes mellitus treated only with lifestyle intervention,or with monotherapy with metformin, glitazones, DPP-4 inhibitors, or glucagon-like peptide-1 (GLP-1) analogs; multiple injections of insulin; mental conditions, depression, or high anxiety such as to render the subject incapable of understanding the nature, purpose, and possible consequences of the study; inability to use the telemedicine system; pregnancy; major cardiovascular event in the last 6 months; any serious health condition that substantially reduces life expectancy; any disease or condition that in the opinion of the investigator could interfere with the completion of the study; protocol nonadherence | Intervention (G1): Home telemedicine systemN=153Intervention type: Audio-only with supports to supplement with audio careIntake: Instructions on the use of the telemedicine system were provided through a 30-minute telephone education session conducted by the trained nursesAudio intervention: Monthly scheduled calls with a nurse, as well as patient-initiated calls as needed, to discuss results of patients’ self-monitoring and identify barriers to compliance or causes of poor metabolic control or blood pressureAudio frequency: MonthlyAudio duration: Not reportedAsynchronous communication: PCPs could send patients text messages or email, and patients could use "call me" button to request phone calls at any time of dayMonitoring tools: Weight scale, glucometer, BP cuff | Comparator (G2): UC N=149Comparator type: Other usual careDescription: Patients allocated to the control group continued to be followed by their general practitioner as usual | Mean age (SD)G1 (n=153): 59.1 (10.3)G2 (n=149): 57.8 (8.9)FemaleG1 (n=153): 59 (38.6)G2 (n=149): 57 (38.3)RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedicationsMetformin:G1 (n=153): 141 (92.2%)G2 (n=149): 140 (94.0%)Metformin monotherapy:G1 (n=153): 62 (40.5%)G2 (n=149): 55 (36.9%)Secretagogue agents:G1 (n=153): 62 (40.5%)G2 (n=149): 69 (46.3%)Secretagogue agent monotherapy:G1 (n=153): 8 (5.2%)G2 (n=149): 3 (2.0%)Other monotherapy:G1 (n=153): 1 (0.7%)G2 (n=149): 2 (1.3%)Pioglitazone:G1 (n=153): 20 (13.1%)G2 (n=149): 21 (14.1%)DPP-4 inhibitors:G1 (n=153): 16 (10.5%)G2 (n=149): 14 (9.4%)GLP-1 agonists:G1 (n=153): 3 (2.0%)G2 (n=149): 4 (2.7%)Basal insulin:G1 (n=153): 12 (7.8%)G2 (n=149): 14 (9.4%)Dual oral agents:G1 (n=153): 57 (37.3%)G2 (n=149): 56 (37.6%)Triple oral agents:G1 (n=153): 10 (6.5%)G2 (n=149): 15 (10.1%)GLP-1 agonists plus oral agent:G1 (n=153): 3 (2.0%)G2 (n=149): 4 (2.7%)Oral plus basal insulin:G1 (n=153): 12 (7.8%)G2 (n=149): 14 (9.4%)ComorbiditiesHypertension:G1 (n=153): 117 (76.5%)G2 (n=149): 116 (77.9%)Dyslipidemia:G1 (n=153): 56 (36.6%)G2 (n=149): 74 (49.7%)MI:G1 (n=153): 6 (3.9%)G2 (n=149): 12 (8.1%)Coronary artery disease:G1 (n=153): 11 (7.2%)G2 (n=149): 13 (8.7%)Congestive heart failure:G1 (n=153): 7 (4.6%)G2 (n=149): 5 (3.4%)Stroke/transient ischemic attack:G1 (n=153): 2 (1.3%)G2 (n=149): 5 (3.4%)Peripheral vascular disease:G1 (n=153): 6 (3.9%)G2 (n=149): 9 (6.0%)Baseline HbA1c % mean (SD)G1: 7.9 (0.7)G2: 8.0 (0.8) |
| Living Well With Diabetes; Eakin (2014)29Living Well With Diabetes; Eakin (2014)29 (continued) | Provider: Educator, counselor, or coachSetting: Primary care practicesCountry: AustraliaFunder: National Health and Medical Research Council project grant and Australian Diabetes Society National Diabetes Strategy grantRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2Other inclusion criteria: Age range 20–75 years; with a listed telephone number; were inactive (self-reported, <5 days/week of >30 min planned exercise) and/or overweight or obese (BMI >25.0 kg/m2; not using weight loss medications; and without previous or planned bariatric surgeryExclusion criteria: Not reported | Intervention (G1): Telephone delivered weight loss intervention + UCN=151Intervention type: Audio-only with supports to supplement with audio careAudio intervention: Telephone counseling sessions with behavioral therapy with goals of increasing physical activity and reducing energy intakeAudio frequency: 27 telephone calls over the 18 months (4 initial weekly calls; fortnightly calls for 5 months; monthly calls for 12 months)Audio duration: Call duration in minutes, mean (SD): 24.6 (10.6)Educational resources: Workbook to be used with behavioral therapyMonitoring tools: Pedometer and digital scales were given to participants for their own use; GT1M accelerometer was used to data collection | Comparator (G2): UC N=151Comparator type: Educational or community-based resourceDescription: Mailed diabetes self-management education brochures | Mean age (SD) 58.0 (8.6)Female132 (43.6%)RaceWhite 264 (87.4%)Hispanic or LatinoNot reportedEducation (<high school), n (%)35 (11.6%)MedicationsDiabetes medication:Traditional OHAs: 233 (77.2%)Insulin: 43 (14.2%)GLP-1 agents: 12 (4.0%) ComorbiditiesCVD-related condition: 240 (79.5%)Musculoskeletal condition: 101 (33.4%)Lung condition: 32 (10.6%)Baseline HbA1c % median (IQR) 7.1 (1.6) |
| von Storch (2019)16von Storch (2019)16 (continued) | Provider: Educator, counselor, or coachSetting: Private health insurance company providing telemedicine assistance.Country: GermanyFunder: North Rhine-Westphalian funding scheme Forschungs-kollegsRisk of bias: High | Diabetes type: Diabetes mellitus type 2Other inclusion criteria: Adults aged 40–67 years Exclusion criteria: Individuals who are pregnant, under treatment for cancer or other life-threatening illnesses, cognitive or mobility impairment, or in need of nursing care | Intervention (G1): Lifestyle telemedicine-assisted self-management program + UCN=82Intervention type: Audio-only with supports to supplement with audio careIntake: Complete baseline intake formAudio intervention: Individualized, need-based telephone coaching based on the Transtheoretical Model of Prochaska were provided to support structured lifestyle intervention including personal health goals for diabetes managementAudio frequency: At least once a month for 3 monthsAudio duration: Not reportedAsynchronous communication: Computer tabletMonitoring tools: Glucometer, step counter | Comparator (G2): UC N=68Comparator type: Other UCDescription: Routine care by physician | Mean age (SD)G1: 59.4 (6.3)G2: 58.4 (7.3)FemaleG1: 22G2: 15RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedicationsG1: 45 (75)G2: 48 (87) ComorbiditiesMultimorbidity (more than 2 chronic diseases):G1: 59 (98.3%)G2: 52 (94.5%)Diabetes-related, mean (SD):G1: 3 (2)G2: 3 (2)Baseline HbA1c % mean (SD)G1: 7.00 (0.96)G2: 6.89 (1.01) |
| Healthy Outcomes through Patient Empowerment (HOPE); Naik (2019)24Healthy Outcomes through Patient Empowerment (HOPE); Naik (2019)24 (continued) | Provider: Psychologists, nurses, pharmacists, or social workersSetting: Michael E. DeBakey VA Medical Center (MEDVAMC) and affiliated community-based outpatient clinicsCountry: United StatesFunder: Veterans Health Administration Health Services Research and Development Office, National Institute of Diabetes and Digestive and Kidney DiseasesRisk of bias: Some concerns | Diabetes type: Unspecified; poorly controlled (HbA1c of 7.5% for 1 year before the study)Other inclusion criteria: Veterans who live at least 20 miles from the Veterans Health Administration hospital in Houston, receive primary care services within a MEDVAMC satellite community-based clinic across Southeast Texas, have clinically significant depression (PHQ-9 >10)Exclusion criteria: A telephone-based coaching intervention would be inappropriate (e.g., the patient had severe cognitive impairment or mental health condition, hearing or visual impairment, or active suicidal ideation), presence of significant hypoglycemic events or substance abusePopulations at risk for disparities: More than 25% BIPOCMore than 25% older adults (65+)More than 25% physical, intellectual, or developmental disabilities100% veterans | Intervention (G1): HOPE intervention + UCN=136Intervention type: Audio-only with supports to supplement with audio careAudio intervention: Coaching sessions that build skills to improve diabetes- and depression-related outcomes while stressing the importance of coach–patient relationship to improvement participant physical and emotional self-managementAudio frequency: Biweekly from months 1 to 3 and monthly from months 4 to 6 (9 sessions total); usual primary care with no contact from HOPE months 7–12Audio duration: 30–40 minutes for months 1 to 3 and 15 minutes for months 4 to 6Educational resources: Workbooks that guided phone conversations and allowed participants to track and progress  | Comparator (G2): Enhanced UCN=89Comparator type: Educational or community-based resourceDescription: Participants were informed of their high-risk status, given educational materials, and encouraged to address these results with primary care clinician, in addition to UC | Mean age (SD)61.9 (8.3)Female23 (10.2%)RaceWhite:124 (55.1%)Non-Hispanic Black:57 (25.3)Other (unspecified):21 (9.3%)Hispanic23 (10.2%)Some college or college graduate148 (65.8%)Graduate school7 (3.1%)MedicationsInsulin only: 60 (26.7%)OHAs: 61 (27.1%)Insulin and OHAs: 62 (27.6%) ComorbiditiesDeyo comorbidity score, mean (SD):2.1 (1.6)Baseline HbA1c % mean (SD) G1: 9.2 (1.4)G2: 9.3 (1.5) |
| Randomized Trial of Health Coaching in Secondary Prevention of Diabetes and Heart Disease (TERVA); Patja (2012)31Randomized Trial of Health Coaching in Secondary Prevention of Diabetes and Heart Disease (TERVA); Patja (2012)31 (continued) | Provider: Certified or public health nursesSetting: Primary care and hospital registries and recordsCountry: FinlandFunder: Joint Authority for Paijat-Hame Social and Health Care; Sitra - the Finnish Innovation Fund; TEKES - the Finish Funding Agency for Technology and Innovation; Pfizer OyRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2; poorly controlled ("unmet treatment goals"; type 2 diabetes on medication and HbA1c >7)Other inclusion criteria: Residents in the region of Päijät-Häme aged 45 years or older; 1 of the following diagnoses: Heart failure with New York Heart Association II or III, and a history of hospital admission for heart failure within the last 2 years; history of MI or cardiac revascularization procedure, and 1 of the following (treated or untreated): BP >140/85 mmHg, total serum cholesterol concentration >4.5 mmol/L, serum LDL concentration >2.5 mmol/L; type 2 diabetes on medication and serum HbA1c >7% without clinically evident CVD (e.g. MI, stroke, peripheral vascular disease)Exclusion criteria: Inability to cooperate or participate, pregnancy, life expectancy less than 1 year, major elective surgery planned within 6 months, had major surgery within the last 2 months | Intervention (G1): Telephone health coaching + UCN= 770Intervention type: Audio-only with supports to supplement with audio careIntake: None specifiedAudio intervention: Coaching calls based on 8 key recommendations of the program, with variations due to individual’s patient preferences; monthly individual strength-based, autonomy supportive for behavior changeAudio frequency: Monthly, altogether 10–11 timesAudio duration: Average 30–60 minutes/callEducational resources: Self-care books | Comparator (G2): UC N= 359Comparator type: Referred to or directed to seek healthcare as neededDescription: The control group received care as usual, consisting of routine care by their physician without additional treatment | Mean age (SD)G1: 64.6 (9.4)G2: 65.6 (9.5)FemaleG1: 41.7%\*G2: 46.0%\*RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedicationsOral antidiabetic drug and insulin:G1 (n=95): 12.3G2 (n=47): 13.1Oral antidiabetic drug:G1 (n=262): 34.0G2: (n=107): 29.8Insulin:G1(n=129): 16.8 G2 (n=60): 16.7Lipid lowering medication:G1 (n=190): 24.7G2 (n=73): 20.3 ComorbiditiesNot reportedBaseline HbA1c % mean (SD) G1: 7.5 (1.1)G2: 7.7 (1.7) |
| Peasah (2020)19Peasah (2020)19 (continued) | Provider: Pharmacy students supervised by licensed pharmacistsSetting: Primary care practicesCountry: United StatesFunder: Mercer University College of PharmacyRisk of bias: High | Diabetes type: UnspecifiedOther inclusion criteria: Aged 18 to 65 years, taking at least 1 oral antidiabetic medication, and HbA1c within the last 12 months of 7%Exclusion criteria: None reported | Intervention (G1): Telephone support for medication adherence + UCN=39Intervention type: Audio-only to supplement with audio careAudio intervention: Calls to discuss whether patients refilled their medication, how they were taking their medication, were they taking the medication as prescribed, and side effects or other concerns with their medicationsAudio frequency: Weekly for 12 weeksAudio duration: Not reported | Comparator (G2): UC N=39Comparator type: Other UCDescription: UC for diabetes management | Mean age (SD)61.7 (10.7)Female37 (47%)RaceNot reportedHispanic or LatinoNot reportedBachelor’s degree or higherNot reportedMedicationsMetformin: 57 (73%) ComorbiditiesAsthma: 9 (12%)Coronary artery disease: 7 (9%)COPD: 4 (5%)Hypertension: 65 (83%)Hyperlipidemia: 45 (58%)Hypothyroidism: 11 (14%)Obesity: 33 (42%)Baseline HbA1c % mean (SD)G1: 8.5 (1.4)G2: 7.9 (1.3) |
| Levy (2015)36Levy (2015)36(continued) | Provider: Registered nurseSetting: Public hospitalCountry: United StatesFunder: New York University-Health and Hospitals Corporation Clinical and Translational Science InstituteRisk of bias: High for glycemic control, low for utilization and hypoglycemia | Diabetes type: Diabetes mellitus type 2 Other inclusion criteria: Initiating insulin glargine or requiring the titration of an existing insulin glargine dose, English or Spanish speaking, the most recent HbA1c value at or above 8%, able and willing to inject insulin, and able and willing to provide informed consentExclusion criteria: Patients on short-acting insulin, on systemic glucocorticoids, with sustained serum creatinine at or above 1.5 mg/dL for men and 1.4 mg/dL for women, with documented hypoglycemiaunawareness, and with type 1 diabetesPopulations at risk for disparities: More than 50% BIPOC100% low income | Intervention (G1): Mobile Insulin Titration Intervention + UCN=33Intervention type: Audio-only with supports to supplement with audio careIntake: None specifiedAudio intervention: Web-based platform automatically sent patients text messages each weekday morning asking for their fasting blood glucose value; patients responded via phone and the diabetes nurse educator checked the responses each weekday afternoon; patients would receive a call if they submitted an alarm value; patients were also instructed to call if they had an alarm value; patients received a weekly call to adjust insulin dose; patients received weekly calls and text messages until they reached their optimal insulin glargine dose for a maximum of 12 weeksAudio frequency: At least weekly until optimal insulin glargine dose was met; more frequent if they have alarm valuesAudio duration: Mean total of 11.2 minutes per callAsynchronous communication: Text message reminders to check fasting glucose, responses via text, voice messages with titration instructions Educational resources: Web-based platform | Comparator (G2): UC N=28Comparator type: Referred to or directed to seek healthcare as neededDescription: Participants were instructed to continue with their existing treatment plan and appointments for diabetes care | Mean age (SD)46.7 (10.75)Female31 (51%)RaceBlack or African American:15 (25%)White:6 (10%)Asian:4 (7%)Caribbean:1 (2%)Hispanic:35 (57%)Bachelor’s degree or higher10 (16%)MedicationsNot reportedComorbiditiesNot reportedBaseline HbA1c % mean (SD)11.72 (1.83) |
| SUrveillance, PREvention, and ManagEment of Diabetes Mellitus (SUPREME-DM Study); O’Connor (2014)34SUrveillance, PREvention, and ManagEment of Diabetes Mellitus (SUPREME-DM Study); O’Connor (2014)34 (continued) | Provider Registered nurses, diabetes educators, or pharmacists (varied by site)Setting: Kaiser Permanente Northern California, Group Health Cooperative, Marshfield Clinic, and Geisinger ClinicCountry: United StatesFunder: Agency for Healthcare Research and QualityRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2; poorly controlled (A1c >8% at the time of index medication prescription)Other inclusion criteria: 18–75 years of age; received clinical care at a designated clinic or medical center involved in this study for at least 15 months before study enrollment; were prescribed a new class of medication (not filled in the past 180 days) for A1c, BP, or LDL cholesterol uncontrolled at the time of medication prescription (A1c >8% [64 mmol/mol], systolic BP [SBP] >140 mmHg, or LDL cholesterol >100 mg/dL])Exclusion criteria: Not reported | Intervention (G1): Structured telephone call + UCN=1,220Intervention type: Audio-only to supplement with audio careAudio intervention: Single protocol-structured telephone call to ascertain whether the subject had started to take the newly prescribed medication, provide positive reinforcement if they were taking it, and probe reasons for nonadherence and resolve barriers to adherence if they had not filled prescription or were not taking medication as directedAudio frequency: Once; up to 3 call attempts were made to reach the patientAudio duration: Median <5 min | Comparator (G2): UC N=1,158Comparator type: Other UCDescription: UC (none specified) | Age range, n (%)18–39 years:G1: 59 (4.8%)G2: 59 (5.1%)40–64 years:G1: 653 (53.5%)G2: 594 (51.3%)>65 years:G1: 508 (41.6%)G2: 505 (43.6%)FemaleG1: 623 (51.1%)G2: 615 (53.1%)RaceWhite:G1: 814 (66.7%)G2: 769 (66.4%)Asian:G1: 171 (14.0%)G2: 183 (15.8%)Black:G1: 150 (12.3%)G2: 140 (12.1%)Other/unknown:G1: 85 (7.0%)G2: 66 (5.7%)Hispanic or LatinoG1: 145 (11.9%)G2: 134 (11.6%)Bachelor’s degree or higherNot reportedMedicationsNot reportedComorbiditiesNot reportedBaseline HbA1c % mean (SD) G1: 9.76 (1.66)G2: 9.83 (1.65) |
| Leichter (2013)18Leichter (2013)18 (continued) | Provider: PhysicianSetting: Treatment center for diabetes and metabolismCountry: United StatesFunder: Roche DiagnosticsRisk of bias: High | Diabetes type: Diabetes mellitus type 1 or 2Other inclusion criteria: 19–65 years of age, computer literate, and competent in use of SMBGExclusion criteria: Creatinine clearance <30mL/min, severe diabetic retinopathy, known or suspected gastroparesis, CVD, hepatic disease, severe neuropathy, recreational drug or substantial alcohol use, use of medications that affect blood sugar and blood pressure, pregnancy or capable of becoming pregnant, and use of an insulin pump other than the Roche Diagnostics (Indianapolis, IN) Spirit insulin pump | Intervention (G1): Study group N=49Intervention type: Hybrid with supports to replace other care with audio careIntake: Subjects attended a baseline visit for clinical assessmentAudio intervention: 3- and 9-month visits were conducted via the internet and telephone; laboratory values for lipids were obtained prior to the internet interactions; the treating endocrinologist assessed the transmitted data and provided advice to participants through e-mail and telephone confirmation; participants were able to call in between scheduled visits with any questions or concernsAudio frequency: Two times over a 12-month period, at 3 and 9 monthsAudio duration: 5 minutesAsynchronous communication: Remote internet communication (e.g., email) 3- and 9-month visits were conducted via the internet and telephoneMonitoring tools: BG meter and test strips; body weight scale and a digital BP cuff; data management software (ACCU-CHEK 360 software) to be used with their BG meter; body weight, blood pressure, and SMBG data were measured and reported via the internet using the software program; SMBG was reported at least quarterly prior to the telemedicine visitIn-person component: In-person office visits at 6 and 12 monthsVideo-teleconferencing component: Unclear; inadequate description of the telephone and "internet visits" | Comparator (G2): Synchronous in-person visits N=49Comparator type: Synchronous in-person visitsDescription: Measurements of BMI, BP, HbA1c, and lipids were taken at each quarterly in person visit; SMBG data were reviewed, and therapy adjustments were made; patients were able to call in between scheduled visits with any questions or concerns | Mean age (SD)48.2 (12.0)Female43 (43.9%)RaceWhite:59 (60.2%)Black:36 (36.7%)Hispanic or Latino3 (3.1%)Bachelor’s degree or higherNot reportedMedicationsTaking medication related to diabetes, N (%):OHA(s) only: 34 (34.7%)Insulin only: 24 (24.5%)Insulin + OHA(s): 23 (23.5%)Insulin pump, N (%): 17 (17.3%)ComorbiditiesNot reportedBaseline HbA1c % mean (SD) G1: 7.7 (1.5)G2: 7.3 (1.2) |
| O’Neil (2016)26O’Neil (2016)26 (continued)O’Neil (2016)26 (continued)O’Neil (2016)26 (continued) | Provider: Educator, counselor, or coachSetting: Various clinics, hospitals, research centers, and other sitesCountry: United StatesFunder: Weight Watchers InternationalRisk of bias: Some concerns | Diabetes type: Diabetes mellitus type 2Other inclusion criteria: HbA1c between 7%–11%, fasting blood glucose <240, BMI 27–50 kg/m2, age range 18–70 years, clearance on medical exam by study physician including electrocardiogram, no weight loss over the previous 3 months (5kg loss is acceptable with physician discretion), on stable regimen of all medications (including diabetes) for at least 3 months (brief regimens of medications such as antibiotics, steroids, etc. are permitted), all diabetes medications are permitted including insulin, willing and able to commit to regular physical activity (e.g. walking) 5 days per week, willingness and ability to make all scheduled appointments required by study protocol, willingness to attend weekly Weight Watchers meetings in the community and to participate in Weight Watchers online program, if so randomized.Exclusion criteria: Type 1 diabetes; cardiovascular/ coronary heart disease; implanted cardiac defibrillator; current of history of severe depression within the previous year, based on the *Diagnostic and Statistical Manual of Mental Disorders Text Revision* (Fourth Ed.) criteria; taking prescription or over-the-counter weight loss medications within last 4 weeks; currently taking medications or supplements that affect weight (e.g., paroxetine, tricyclics, anti-psychotics), within the last 4 weeks, participation in a weight control program within the past 3 months; QTc interval >450 msec for males and QTc interval >470 msec for Females; PHQ-9 total score >15; thyroid disease, untreated or treatment change within the last 6 months; history of a major surgery or surgical procedure for weight loss; orthopedic limitations that would limit ability to engage in regular physical activity; gastrointestinal disorders including chronic malabsorptive conditions, peptic ulcer disease, Crohn’s disease, chronic diarrhea or active gallbladder disease; current cancer or cancer treatment, or within the last 3 years; history within past 5 years of clinically diagnosed eating disorders; women who are pregnant, lactating, trying to become pregnant or unwilling to use an effective birth control; currently consuming >14 alcoholic drinks (1 drink = 12 fl oz. beer, 4 fl oz. wine or 1.5 fl oz. liquor) per week and unwilling to limit intake to less than 3 drinks per drinking day; current or past drug abuse; hypoglycemic events: evidence of more than 1 severe hypoglycemic event in the past 12 months.Populations at risk for disparities: More than 25% BIPOC | Intervention (G1): Weight Watchers weight management program with coordinated telephone and email consultationsN=279Intervention type: Audio-only with supports to replace other care with audio careIntake: Initial instruction for how to access the meetings and online toolsAudio intervention: Certified diabetes educators advised on adapting Weight Watchers program for management of diabetesAudio frequency: At least 2 at unspecified frequency and unlimited upon requestAudio duration: Not reportedAsynchronous communication: Weekly emails discussing meeting topics, unlimited email consultationsEducational resources: Weight Watchers | Comparator (G2): Synchronous in-person visits N=284Comparator type: Synchronous in-person visitsDescription: One in-person visit with a registered dietitian for type 2 diabetes nutrition counseling, additional written materials provided at follow-up visits | Age Not reported by group but was reported as at last visit (12 months) and not at last visitAttendanceAttended: 55.6Did not attend: 52.2FemaleG1: 201 (72%)G2: 199 (70%)RaceCaucasian:G1: 128 (46%)G2: 125 (44%)African American:G1: 100 (36%)G2: 108 (38%)Other (unspecified):G1: 22 (8%)G2: 20 (7%)HispanicG1: 28 (10%)G2: 31 (11%)Bachelor’s degree or higherNot reportedMedicationsDiabetes medications:G1: 264 (94.6%)G2: 271 (95.4%) ComorbiditiesNot reportedBaseline HbA1c % mean (SD) G1: 8.36 (1.02)G2: 8.28 (1.00) |

\*Value calculated by abstractor; not reported in original study

**Abbreviations:** BG, blood glucose; BIPOC, Black, indigenous, or person of color; BMI: body mass index, BP, blood pressure; CI, confidence interval; COPD, chronic obstructive pulmonary disorder; CVD, cardiovascular disease; DPP-4, dipeptidyl peptidase 4; DSN, diabetes specialist nurse; fl oz, fluid ounce; G, group; GLP-1, glucagon-like peptide-1; HbA1c/A1c: hemoglobin A1c or glycated hemoglobin, HDL, high-density lipoprotein; HOPE, Healthy Outcomes through Patient Empowerment; IQR, interquartile range; kg, kilograms; lb, pound; LDL, low-density lipoprotein; m, meter; MEDVAMC, Michael E. DeBakey VA Medical Center; mg/dL, milligrams per deciliter; MI, myocardial infarction; MTH, mobile telehealth; N, number; OHA, oral hypoglycemic agent; PCP, primary care provider; PHQ, patient health questionnaire; QTc, corrected QT interval; SBP, systolic blood pressure; SD, standard deviation; SMBG, self-monitoring blood glucose; UC, usual care; VA, Veterans Affairs.

**SDC Table 2. Risk of Bias of Included Studies**

| Trial Name; Author (Year) | Domain 1 | Domain 2 | Domain 3 | Domain 4 | Domain 5 | Overall |
| --- | --- | --- | --- | --- | --- | --- |
| ADVICE; Doupis (2019)15\* | Domain 1a: HighDomain 1b: High | Some concerns | Low  | Low  | Low | High  |
| The ENhancing outcomes through Goal Assessment and Generating Engagement in Diabetes Mellitus (ENGAGE-DM); Lauffenburger (2019)25 | Some concerns | Low | Low  | Low  | Low  | Some concerns |
| Varney (2014)28 | Some concerns | Some concerns | Low  | Low  | Low  | Some concerns |
| Baron (2017)32 | Low | Low | Low  | Low  | Some concerns  | Some concerns  |
| Cholesterol, Hypertension, and Glucose Education study (CHANGE); Crowley (2013)23 | Low | Low | Low  | Low  | Low  | Low |
| Chamany (2015)17Schechter (2016)37 | Low | Some concerns | High | Some concerns for well-being and medication adherence, low for glycemic control | Low  | High |
| McMahon (2012)22 | Low | Low | Low  | Low  | Low  | Low |
| Mons (2013)21 | Low | Low | Low  | Low  | Low  | Low |
| Advanced Comprehensive Diabetes Care (ACDC); Crowley (2016)35 | Some concerns | Low | Low | Low | Low | Some concerns |
| Van Dyck (2013)30 | Some concerns | Low | Low  | Low  | Low  | Some concerns |
| Gudban (2021)33 | Some concerns | Low | Low  | Low  | Low  | Some concerns  |
| Karhula (2015)27 | Low | Some concerns | Some concerns  | Low  | Low  | Some concerns |
| REMOTE Study; Nicolucci (2015)20 | Low | High | Some concerns  | Low  | Low  | High |
| Living Well With Diabetes; Eakin (2014)29 | Low | Low | Some concerns  | Low  | Low  | Some concerns  |
| von Storch (2019)16 | Some concerns | High | Some concerns  | Low  | Low  | High |
| Healthy Outcomes through Patient Empowerment (HOPE); Naik (2019)24 | Low | Some concerns | Low for glycemic control, some concerns for primary care visits | Low  | Low  | Some concerns |
| Randomized Trial of Health Coaching in Secondary Prevention of Diabetes and Heart Disease (TERVA); Patja (2012)31 | Low | Some concerns | Some concerns  | Low  | Low  | Some concerns  |
| Peasah (2020)19 | High | Some concerns | High  | Low  | Low  | High |
| Levy (2015)36 | Low | Some concerns | High for glycemic control, low for hypoglycemia and utilization | Low  | Low  | High for glycemic control, low for utilization and hypoglycemia |
| SUrveillance, PREvention, and ManagEment of Diabetes Mellitus (SUPREME-DM) Study; O’Connor (2014)34 | Some concerns | Some concerns | Low  | Low  | Some concerns  | Some concerns |
| Leichter (2013)18 | Some concerns | Some concerns | High  | Low  | Low  | High  |
| O’Neil (2016)26 | Low | Some concerns | Low for glycemic control, lipid panel, blood pressure, and weight; some concerns for hypoglycemia | Low  | Low  | Some concerns |

\* Cochrane risk of bias tool for cluster randomized controlled trial used to assess risk of bias in this study.

Eldridge S, Campbell MK, Campbell MJ, Drahota AK, Giraudeau B, Reeves BC, Siegfried N, Higgins JPT. Revised Cochrane risk of bias tool for randomized trials (RoB 2): Additional considerations for cluster-randomized trials (RoB 2 CRT). 10 November 2020. <https://training.cochrane.org/sites/training.cochrane.org/files/public/uploads/Sandra%20Eldridge_Risk%20of%20Bias%20Tool%202%20for%20Crossover%20Trials.pdf>40

**SDC Table 3. Detailed Evidence From Studies Targeting Diabetes**

| Trial Name; Author (Year) | Study Characteristics | Intervention and Comparator Arms | Clinical Outcomes | Patient-Reported Health/QOL | Care Access/ Utilization | Patient Safety |
| --- | --- | --- | --- | --- | --- | --- |
| ADVICE; Doupis (2019)15ADVICE; Doupis (2019)15 (continued)ADVICE; Doupis (2019)15 (continued)ADVICE; Doupis (2019)15 (continued)ADVICE; Doupis (2019)15 (continued) | Diabetes type: Diabetes mellitus type 2; poorly controlled (HbA1c >7%)Provider: PhysicianSetting: Primary and secondary outpatient diabetes care centersCountry: GreeceFunder: MSD (Merck and Co.), GreeceRisk of bias: High | Intervention (G1): Empowerment group (systematic patient education program) + UCN=230Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UC17N=227Comparator type: Referred to or directed to seek healthcare as needed  | Glycemic control (4 months, 8 months)Assessed using HbA1c %HbA1c (baseline), mean (SD):G1 (n=230): 8.0 (1.0)G2 (n=227): 7.7 (0.8) HbA1c (4 months), mean (SD):G1 (n=230): 7.1 (0.6)G2 (n=227): 7.0 (0.6) HbA1c (8 months), mean (SD):G1 (n=230): 7.0 (0.6)G2 (n=227): 6.9 (0.6)HbA1c (baseline): G1 (n=230) vs. G2 (n=227): p=0.001HbA1c (4 months): G1 (n=230) vs. G2 (n=227): p=0.724HbA1c (8 months):G1 (n=230) vs. G2 (n=227): p=0.114Lipid panel (4 months, 8 months)Assessment tool not reported Total cholesterol (mg/dl) (baseline), mean (SD):G1 (n=230): 185.8 (38.6)G2 (n=227): 180.8 (33.6) Total cholesterol (mg/dl) (4 months), mean (SD):G1 (n=230): 178.3 (32.7)G2 (n=227): 177.3 (26.3) Total cholesterol (mg/dl) (8 months), mean (SD):G1 (n=230): 179.7 (32.1)G2 (n=227): 172.8 (25.7) Triglycerides (mg/dl) (baseline), mean (SD):G1 (n=230): 169.8 (92.2)G2 (n=227): 156.0 (68.3) Triglycerides (mg/dl) (4 months), mean (SD):G1 (n=230): 148.4 (61.4)G2 (n=227): 140.2 (45.8)Triglycerides (mg/dl) (8 months), mean (SD):G1 (n=230): 144.4 (60.6)G2 (n=227): 137.1 (47.6) HDL (mg/dl) (baseline), mean (SD):G1 (n=230): 45.0 (11.7)G2 (n=227): 46.4 (10.9) HDL (mg/dl) (4 months), mean (SD):G1 (n=230): 47.2 (11.7)G2 (n=227): 47.7 (10.2) HDL (mg/dl) (8 months), mean (SD):G1 (n=230): 47.2 (10.8)G2 (n=227): 47.6 (9.8) LDL (mg/dl) (baseline), mean (SD):G1 (n=230): 106.6 (33.1)G2 (n=227): 100.5 (29.7) LDL (mg/dl) (4 months), mean (SD):G1 (n=230): 97.9 (28.5)G2 (n=227): 100.0 (25.1) LDL (mg/dl) (8 months), mean (SD):G1 (n=230): 101.1 (30.1)G2 (n=227): 94.8 (26.3)Total cholesterol (mg/dl) (baseline):G1 (n=230) vs. G2 (n=227): p=0.159Total cholesterol (mg/dl) (4 months):G1 (n=230) vs. G2 (n=227): p=0.769Total cholesterol (mg/dl) (8 months):G1 (n=230) vs. G2 (n=227): p=0.088Triglycerides (mg/dl) (baseline):G1 (n=230) vs. G2 (n=227): p=0.446Triglycerides (mg/dl) (4 months):G1 (n=230) vs. G2 (n=227): p=0.362Triglycerides (mg/dl) (8 months):G1 (n=230) vs. G2 (n=227): p=0.271HDL (mg/dl) (baseline):G1 (n=230) vs. G2 (n=227): p=0.261HDL (mg/dl) (4 months):G1 (n=230) vs. G2 (n=227): p=0.643HDL (mg/dl) at 8 months:G1 (n=230) vs. G2 (n=227): p=0.726LDL (mg/dl) (baseline):G1 (n=230) vs. G2 (n=227): p=0.108LDL (mg/dl) (4 months):G1 (n=230) vs. G2 (n=227): p=0.365LDL (mg/dl) (8 months):G1 (n=230) vs. G2 (n=227): p=0.183Blood pressure (4 months, 8 months)Assessment tool not reported Diastolic blood pressure (mmHg) (baseline), mean (SD):G1 (n=230): 78.8 (8.0) G2 (n=227): 79.5 (8.4)Diastolic blood pressure (mmHg) (4 months), mean (SD):G1 (n=230): 78.2 (7.2)G2 (n=227): 78.9 (7.7)Diastolic blood pressure (mmHg) (8 months), mean (SD):G1 (n=230): 78.5 (7.9) G2 (n=227): 78.3 (7.2)Systolic blood pressure (mmHg) (baseline), mean (SD):G1 (n=230): 130.9 (12.5) G2 (n=227): 132.0 (13.3)Systolic blood pressure (mmHg) (4 months), mean (SD):G1 (n=230): 128.3 (10.7) G2 (n=227): 129.6 (12.1)Systolic blood pressure (mmHg) (8 months), mean (SD):G1 (n=230): 129.0 (10.7)G2 (n=227): 129.7 (12.4)Diastolic blood pressure (mmHg) (baseline):G1 (n=230) vs. G2 (n=227): p=0.766Diastolic blood pressure (mmHg) (4 months):G1 (n=230) vs. G2 (n=227): p=0.301Diastolic blood pressure (mmHg) (8 months):G1 (n=230) vs. G2 (n=227): p=0.740Systolic blood pressure (mmHg) (baseline):G1 (n=230) vs. G2 (n=227): p=0.521Systolic blood pressure (mmHg) (4 months):G1 (n=230) vs. G2 (n=227): p=0.708Systolic blood pressure (mmHg) (8 months):G1 (n=230) vs. G2 (n=227): p=0.778 | Health-related QOL (4 months, 8 months)Assessed using 5-level EQ-5D (EQ-5D-5L); mean score of the health-related quality of life was assessed with the EQ-5D-5LEQ-5D-5L change from baseline (4 months):G1 vs. G1: p=0.38EQ-5D-5L change from baseline (8 months): G1 vs. G1: p=0.66Authors report no significant between-group differences | Medication adherence (4 months, 8 months)Assessed using the 4-item Morisky Medication Adherence Scale (MMAS-4); Patients were classified into high or medium/low adherence subgroups by means of their baseline MMAS-4 score (high adherence, MMAS-4 score 4; medium/low adherence, MMAS-4 score 0 to 3)Baseline, N (%):High adherence:G1 (n=230): 124 (53.9%)G2 (n=227): 130 (57.3%)Medium/low adherence:G1 (n=230): 106 (46.1%)G2 (n=227): 97 (42.7%) 4 months:High adherence:G1 (n=230): 157 (70.7%) G2 (n=227): 135 (61.1%)Medium/low adherence:G1 (n=230): 65 (29.3%) G2 (n=227): 86 (38.9%)8 months:High adherence:G1 (n=230): 157 (72.7%) G2 (n=227): 144 (65.8%)Medium/low adherence:G1 (n=230): 59 (27.3%)G2 (n=227): 75 (34.2%)Proportion of participants with high vs. Medium/low adherence (baseline):G1 (n=230) vs. G2 (n=227): p=0.470Proportion of participants with high vs. Medium/low adherence (4 months):G1 (n=230) vs. G2 (n=227): p=0.032Proportion of participants with high vs. Medium/low adherence (8 months):G1 (n=230) vs. G2 (n=227): p=0.117Medication adherence (high) (4 months, 8 months)Assessed using MMAS; achievement of high medication adherence at 4 or 8 months, reported as change in proportion from baseline and as mixed effects model controlling for baseline differences groups and site variabilityChange in proportion of participants with high adherence (4 months), %:G1: 16.8G2: 3.8p=0.04Change in proportion of participants with high adherence (8 months), %:G1: 18.8G2: 8.5p=0.09Achievement of high medication adherence (4 months), OR (95% CI): G1 vs. G2: 2.1 (0.575 to 7.670) | Not reported |
| The Enhancing outcomes through Goal Assessment and Generating Engagement in Diabetes Mellitus (ENGAGE-DM); Lauffenburger (2019)25 | Diabetes type: Diabetes mellitus type 2; poorly controlled (HbA1c 8% or greater)Provider: PharmacistSetting: Individuals covered under a large private health insurance companyCountry: United StatesFunder: AstraZenecaRisk of bias: Some concerns | Intervention (G1): Telephone-based patient-centered intervention + UCN=700Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=700Comparator type: Other UC  | Glycemic control (12 months, no additional follow-up)Assessed using mean change in HbA1c (primary outcome)Change in HbA1c (12 months), mean (SD):G1: -0.75 (1.96)G2: -0.79 (2.01)Adjusted absolute difference between groups in change in HbA1c (12 months):G1 vs. G2: 0.06 (95% CI, -0.20 to 0.32)  | Not reported | Medication adherence – proportion of days covered (PDC) (12 months, no additional follow-up)Assessed using pharmacy fill supply diaries; proportion of days where participants had 1 or more oral glucose-lowering medications available; higher proportion indicates greater adherenceMedication adherence (PDC) (12 months), mean (SD):G1: 81.9 (30.1)G2: 81.9 (31.0)Adjusted absolute difference in medication adherence (PDC) between groups (12 months):G1 vs. G2: -0.16 (95% CI, -3.41 to 3.08) | Not reported |
| Varney (2014)28Varney (2014)28 (continued)Varney (2014)28 (continued)Varney (2014)28 (continued)Varney (2014)28 (continued) | Diabetes type: Diabetes mellitus type 2 Provider: Registered dieticianSetting: Hospital diabetes clinicCountry: AustraliaFunder: St. Vincent’s HospitalRisk of bias: Some concerns | Intervention (G1): Telephone coaching + UCN=47Intervention type: Audio-only to supplement with audio careComparator (G2): UCN=47Comparator type: Referred or directed to seek care as needed  | Glycemic control (6 months, 12 months)Assessment tool not reported Mean HbA1c (6 months):G1: 7.7 (95% CI, 7.4 to 8.1)G2: 8.5 (95% CI, 8.1 to 8.8)Mean HbA1c (12 months):G1: 8.2 (95% CI, 7.9 to 8.6)G2: 8.4 (95% CI, 8.0 to 8.7)Mean difference between groups in HbA1c (6 months):G1 vs. G2: -0.8 (95% CI, -1.2 to ‑0.3)Group x Time P value: p=0.03Mean difference between groups in HbA1c (12 months)G1 vs. G2: -0.2 (95% CI, -0.6 to 0.3)Group x Time P value: p=0.53Body mass index (BMI) (6 months, 12 months)Assessment tool not reported  BMI (6 months):G1: 31.4 (95% CI, 90.9 to 31.9)G2: 31.7 (95% CI, 31.3 to 32.2)BMI (12 months):G1: 31.6 (95% CI, 31.1 to 32.1)G2: 31.7 (95% CI, 31.2 to 32.1)Mean difference between groups in BMI (6 months):G1 vs. G2: -0.4 (95% CI, -1.0 to 0.3)Group x Time P value: p=0.28Mean difference between groups in BMI (12 months):G1 vs. G2: -0.1 (95% CI, -0.7 to 0.6)Group x Time P value: p=0.84Lipid panel (LDL, HDL, triglycerides) (6 months, 12 months)Assessment tool not reported Mean fasting cholesterol (6 months):G1: 4.1 (95% CI, 3.9 to 4.4)G2: 4.4 (95% CI, 4.1 to 4.6)Mean fasting cholesterol (12 months):G1: 4.2 (95% CI, 3.9 to 4.5)G2: 4.4 (95% Ci, 4.1 to 4.6)Mean fasting LDL cholesterol (6 months):G1: 2.2 (95% CI, 2.0 to 2.4)G2: 2.4 (95% CI, 2.2 to 2.6)Mean fasting LDL cholesterol (12 months):G1: 2.2 (95% CI, 2.0 to 2.5)G2: 2.5 (95% CI, 2.2 to 2.7)Mean fasting HDL cholesterol (6 months):G1: 1.1 (95% CI, 1.1 to 1.2)G2: 1.16 (95% CI, 1.10 to 1.22)Mean fasting HDL cholesterol (12 months):G1: 1.1 (95% CI, 1.1 to 1.2)G2: 1.19 (95% CI, 1.13 to 1.25)Mean fasting triglycerides (6 months):G1: 2.0 (95% CI, 1.7 to 2.2)G2: 2.0 (95% CI, 1.8 to 2.2)Mean fasting triglycerides (12 months):G1: 1.9 (95% CI, 1.7 to 2.2)G2: 1.8 (95% CI, 1.6 to 2.0)Mean difference between groups in fasting cholesterol (6 months):G1 vs. G2: -0.2 (95% CI, -0.6 to 0.2)Group x Time P value: p=0.25Mean difference between groups in fasting cholesterol (12 months):G1 vs. G2: -0.2 (95% CI, -0.5 to 0.2)Group x Time P value: p=0.39Mean difference between groups in fasting LDL cholesterol (6 months):G1 vs. G2: -0.2 (95% CI, -0.5 to 0.1)Group x Time P value: p=0.26Mean difference between groups in fasting LDL cholesterol (12 months):G1 vs. G2: -0.2 (95% CI, -0.6 to 0.1)Group x Time P value: p=0.18Mean difference between groups in fasting HDL cholesterol (6 months):G1 vs. G2: -0.1 (95% CI, -0.1 to 0)Group x Time P value: p=0.27Mean difference between groups in fasting HDL cholesterol (12 months):G1 vs. G2: -0.1 (95% CI, -0.2 to 0)Group x Time P value: p=0.08Mean difference between groups in fasting triglycerides (6 months):G1 vs. G2: 0 (95% CI, -0.4 to 0.3)Group x Time P value: p=0.88Mean difference between groups in fasting triglycerides (12 months):G1 vs. G2: 0.2 (95% CI, -0.2 to 0.5)Group x Time P value: p=0.41Blood pressure (BP) (systolic and diastolic) (6 months, 12 months)Assessment tool not reported Mean systolic BP (6 months):G1: 130 (95% CI, 126 to 135)G2: 135 (95% CI, 131 to 140)Mean systolic BP (12 months):G1: 132 (95% CI, 128 to 137)G2: 138 (95% CI, 134 to 143)Mean diastolic BP (6 months):G1: 74 (95 % CI, 71 to 77)G2: 79 (95% CI, 76 to 81)Mean diastolic BP (12 months):G1: 77 (95% CI, 74 to 80)G2: 80 (95% CI, 77 to 83)Mean difference between groups in systolic BP (6 months):G1 vs. G2: -5 (95% CI, -11 to 1)Group x Time P value: p=0.09Mean difference between groups in systolic BP (12 months):G1 vs. G2: -6 (95% CI, -12 to 0)Group x Time P value: p=0.07Mean difference between groups in diastolic BP (6 months):G1 vs. G2: -5 (95% CI, -9 to 1)Group x Time P value: p=0.03Mean difference between groups in diastolic BP (12 months):G1 vs. G2: -3 (95% CI, -8 to 2)Group x Time P value: p=0.18Weight (6 months, 12 months)Assessment tool not reported Mean weight (6 months):G1: 88.1 (95% CI, 86.8 to 89.3)G2: 88.9 (95% CI, 87.7 to 90.1)Mean weight (12 months):G1: 88.0 (95% CI, 86.8 to 89.3)G2: 88.8 (95% CI, 97.6 to 90.0)Mean difference between groups in weight (6 months):G1 vs. G2: -0.8 (95% CI, -2.5 to 0.9)Group x Time P value: p=0.33Mean difference between groups in weight (12 months):G1 vs. G2: -0.7 to (95% CI, -2.5 to 1.0)Group x Time P value: p=0.38 |  Not reported | Not reported  | Not reported |
| Baron (2017)32Baron (2017)32 (continued)Baron (2017)32 (continued) | Diabetes type: Diabetes mellitus type 1 or 2; poorly controlled (HbA1c of 7.5% or higher)Provider: Registered nurseSetting: Diabetes clinicCountry: United KingdomFunder: Policy Research Programme of the Department of Health for EnglandRisk of bias: Some concerns | Intervention (G1): Mobile telehealth + UCN=45Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=36Comparator type: Synchronous in-person visits  | Glycemic control (3 months, 9 months)Assessed using medical records; HbA1c (%)Baseline:G1 (n=45): 9.07 (1.72)G2 (n=36): 8.88 (1.68)3 months:G1 (n=44): 8.76 (1.70)G2 (n=35): 8.82 (1.68)9 months:G1 (n=40): 8.56 (1.64)G2 (n=31): 8.93 (1.61)F statistic, P value for Group (2) x Time (3) interaction:F(2,126.40)=1.50, p=0.228Effect size estimate for group differences:3 months: 0.03 (95% CI, -0.42 to 0.49)9 months: 0.22 (95% CI, -0.25 to 0.69)BP (mmHg) (9 months, no additional follow-up)Assessed using medical records Systolic BP (mmHg):Baseline:G1 (n=45).: 135.52 (20.35)G2 (n=36): 132.40 (16.04)9 months:G1 (n=40): 132.33 (17.82) G2 (n=31): 138.32 (14.04)Diastolic BP (mmHg):Baseline:G1 (n=45): 76.69 (8.62) G2 (n=36): 78.05 (8.67)9 months:G1 (n=40): 73.83 (11.12) G2 (n=31): 78.83 (11.18)Systolic BP (mmHg):F statistic, P value for Group (2) x Time (3) interaction:F(1,68)=3.84, p=0.054Effect size estimate for group differences:9 months: 0.36 (95% CI, -0.11 to 0.83)Diastolic BP (mmHg):F statistic, P value for Group (2) x Time (3) interaction:F(1,68)=2.60, p=0.112Effect size estimate for group differences:9 months: 0.46 (95% CI, -0.03 to 0.91) | Health-related QOL, physical component (3 months, 9 months)Assessed using Short Form Health Survey (SF12v2-Physical Component Score [PCS]); for SF12v2, higher scores represent better quality of lifeBaseline:G1 (n=45): 36.38 (11.79) G2 (n=36): 36.08 (11.51)3 months:G1 (n=41): 37.63 (11.53) G2 (n=33): 39.64 (11.27)9 months:G1 (n=39): 38.80 (11.35)G2 (n=31): 41.00 (11.07)F statistic, P value for Group (2) x Time (3) interaction:F(2,123.84)=0.87, p=0.420Effect size estimate for group differences:3 months: 0.17 (95% CI, ‑0.28 to 0.63)9 months: 0.19 (95% CI, ‑0.28 to 0.66)Health-related QOL, mental component (3 months, 9 months)Assessed using SF12v2-Mental Component Score (MCS); for SF12v2, higher scores represent better quality of life Baseline:G1 (n=45): 47.36 (12.38)G2 (n=36): 46.44 (12.11)3 months:G1 (n=41): 47.92 (12.13) G2 (n=33): 44.41 (11.86)9 months:G1 (n=39): 48.74 (12.09) G2 (n=31): 40.68 (11.80)F statistic, P value for Group (2) x Time (3) interaction:F(2,103.55)=2.94, p=0.057Effect size estimate for group differences:3 months: -0.29 (95% CI, -0.74 to 0.17)9 months: -0.66 (95% CI, -1.14 to -0.18) | Not eligible | Not reported  |
| Cholesterol, Hypertension, and Glucose Education study (CHANGE); Crowley (2013)23Cholesterol, Hypertension, and Glucose Education study (CHANGE); Crowley (2013)23 | Diabetes type: Diabetes mellitus type 2 Provider: Registered nurseSetting: Primary care clinicsCountry: United StatesFunder: Robert Wood Johnson Foundation Disparities Research for Change program; Kate B. Reynolds FoundationRisk of bias: Low  | Intervention (G1): Nurse-administered telephone intervention + UCN=182Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=177Comparator type: No care  | Glycemic control (12 months, no additional follow-up)Assessed using HbA1c Baseline:G1 (n=170): 8.0 (0.1)G2 (n=171): 8.0 (0.1)12 months:G1 (n=170): 7.8 (0.1) G2 (n=171): 7.9 (0.1)Between-group differenceG1 (n=170) vs. G2 (n=171): -0.1 (95% CI, -0.4 to 0.2)Treatment-by-time P value: p=0.66Systolic BP (12 months, no additional follow-up)Assessed using EMR data from routine clinic measurements Baseline:G1 (n=182): 136.8 (0.9)G2 (n=177): 136.8 (0.9)12 months:G1 (n=182): 137.6 (1.3)G2 (n=177): 134.7 (1.4)Between-group differenceG1 (n=182) vs. G2 (n=177): 3.0 (95% CI, -0.6 to 6.6)Treatment-by-time P value: p=0.11LDL cholesterol (12 months, no additional follow-up)Assessed using EMR data from routine clinic measurements Baseline:G1 (n=180): 99.1 (2.2)G2 (n=172): 99.1 (2.2)12 months:G1 (n=180): 96.5 (2.8)G2 (n=172): 95.5 (2.8)Between-group differenceG1 (n=180) vs. G2 (n=172): 1.0 (95% CI, -6.5 to 8.5)Treatment-by-time P value: p=0.79Mortality (12 months, no additional follow-up)Assessment tool not reported12 months, n (%):G1 (n=182): 2 (1.1%)G2 (n=177): 2 (1.1%) | Not reported | Medication adherence (12 months, no additional follow-up)Assessed using MMAS Conditional odds ratio (12 months):G1 (n=165) vs. G2 (n=164): 4.4 (95% CI, 1.8 to 10.6), p=0.0008 | Not reported |
| Chamany (2015)17 Schechter (2016)37Chamany (2015)17 Schechter (2016)37 (continued) | Diabetes type: Diabetes mellitus type 1 or 2; poorly controlled (recent A1c test >7.0%)Provider: Educator, counselor, or coachSetting: NYC Department of Health and Mental Hygiene A1c Registry; research setting not connected to a clinical settingCountry: United StatesFunder: National Institute of Diabetes and Digestive and Kidney Diseases; Einstein–Mount Sinai Diabetes Research Center; New York Regional Center for Diabetes Translation ResearchRisk of bias: High | Intervention (G1): Telephone and print materials + UCN=443Intervention type: Audio-only with supports to supplement with audio careComparator (G2): Enhanced UCN=498Comparator type: Educational or community-based resource  | Glycemic control (6 weeks before and 4 months after the end of protocol anniversary [i.e., 12 months after randomization], no additional follow-up)Assessed using NYC A1c registry or patient’s healthcare provider if data was not available in the registry; change in HbA1cHgA1c (post-intervention window):G1: 8.4 (1.9)G2: 8.6 (2.0)>1% decrease in A1c, %:G1: 37.4%G2: 26.7%>1.5% decrease in A1c, %:G1: 28.3%G2: 19.2%Between study arm difference in A1c decrease, percentage point:G1 (n=334) vs. G2 (n=360): 0.4 (95% CI, 0.09 to 0.74), p=0.01Between study arm difference in percentage of participants with >1% decrease in A1c: p=0.01Between study arm difference in percentage of participants with >1.5% decrease in A1c: p=0.02 | Well-being (1 year follow-up, no additional follow-up)Assessed using WHO Well-Being Index [WHO-5]  Baseline:G1 (n=443): 15.3 (6.7)G2 (n=498): 15.0 (6.7)1-year follow-up:G1 (n=366): 16.0 (6.9)G2 (n=406): 15.9 (6.6)Change in score was statistically significant in both study arms (p<0.01) | Medication adherence (1-year follow-up, no additional follow-up)Assessed using MMAS-4; possible range 0–4, with 4 being most adherent to medicationBaseline:MMAS-4 score, Mean (SD):G1 (n=442): 3.1 (1.1)G2 (n=493): 3.1 (1.1)MMAS-4 score=4, n (%):G1 (n=442): 225 (50.9)G2 (n=493): 235 (47.7)1-year follow-up:MMAS-4 score, Mean (SD):G1 (n=366): 3.1 (1.1)G2 (n=404): 3.2 (1.1)MMAS-4 score=4, n (%):G1 (n=366): 190 (51.9) G2 (n=404): 209 (51.7)No significant changes in either study arm in measures of medication adherence | Not reported  |
| McMahon (2012)22McMahon (2012)22 (continued)McMahon (2012)22 (continued)McMahon (2012)22 (continued) | Diabetes type: Diabetes mellitus type 2; poorly controlled (A1c >8.5%)Provider: Certified diabetes educators (one advanced practice nurse and 1 pharmacist)Setting: Department of Veterans Affairs (VA) Boston Healthcare SystemCountry: United StatesFunder: VA Health Services Research and Development, National Institutes of Health, and the Department of the Army Cooperative AgreementRisk of bias: Low | Intervention (G1): Telephone-based care management group (G1) + UCN=51Intervention type: Audio-only with supports to supplement with audio careComparator (G2): Web trainingN=50Comparator type: Educational or community-based resource | Glycemic control (12 months, no additional follow-up)Assessed using A1c measured with methodology that utilized a nonporous ion-exchange high performance liquid chromatography to separate A1c from other hemoglobin fractions and is certified by the National Glycohemoglobin Standardization Program; change in A1c over time HbA1c (baseline), mean (SD):G1: 9.9 (1.2)G2: 10.1 (1.4)HbA1c (12 months), mean (SD):G1: 8.5 (1.6)G2: 8.4 (1.7)HbA1c rate of change over time:G1 vs. G2: p=0.35No significant intervention effectsLipid panel (12 months, no additional follow-up)Assessed using fasting serum samples; fasting serum samples were assayed for cholesterol, its subfractions, and triglycerides using standard laboratory techniques Total cholesterol (mg/dL) (12 months), mean (SD):G1: 158.3 (35.1)G2: 163.1 (38.0)LDL (mg/dL) (12 months), mean (SD):G1: 85.9 (27.1)G2: 86.3 (29.4)HDL (mg/dL) (12 months), mean (SD):G1: 37.2 (11.2)G2: 38.0 (10.2)Triglycerides (mg/dL) (12 months), mean (SD):G1: 176.3 (133.4)G2: 197.2 (117.7)No significant difference among group over timeBP (12 months, no additional follow-up)Assessed using automated sphygmomanometer; BP was measured with the patient in the seated position after a 5-minute rest using an appropriately sized cuff and an automated sphygmomanometer; 3 readings were taken 1 minute apart, and analyses used the average of these 3 readingsSystolic BP (mm/Hg) (12 months), mean (SD):G1: 133.2 (17.1)G2: 136.7 (19.3)Diastolic BP (mm/Hg) (12 months), mean (SD):G1: 74.6 (10.7)G2: 77.3 (11.5)No significant difference among group over timeWeight (12 months, no additional follow-up)Assessment tool not reported; weight (lbs.) Weight in lbs. (12 months), mean (SD):G1: 239.1 (55.7)G2: 237.5 (48.8)No significant difference among group over timeBMI (12 months), no additional follow-up)BMI (12 months), mean (SD):G1: 34.3 (7.4)G2: 34.3 (6.4)No significant difference among group over time | Not reported | Not reported  | Not reported  |
| Mons (2013)21Mons (2013)21 (continued) | Diabetes type: Diabetes mellitus type 2; poorly controlled (HbA1c >7.5%)Provider: Practice nurseSetting: General practicesCountry: GermanyFunder: German Federal Ministry of Education and ResearchRisk of bias: Low | Intervention (G1): Supportive telephone-based counseling + UCN=103Intervention type: Audio-only to supplement with audio careComparator (G2): UCN=101Comparator type: Other UC  | Glycemic control (12-month follow-up, 18-month follow-up)Assessed using HbA1cWithin-group changes (12-month follow-up):G1: -0.44 (p<0.001)G2: -0.51 (p<0.001)Within-group changes (18-month follow-up): G1: -0.22 (p=0.12)G2: -0.49 (p<0.001)Change in HbA1c (12-month follow-up): G1 vs. G2: NR, p=0.70Change in HbA1c (18-month follow-up): G1 vs. G2: NR, p=0.19Total cholesterol (12-month follow-up, 18-month follow-up)Assessed using questionnaire of general practitioners 12-month follow-up, within-group changes:G1: 0.54 (p=0.88)G2: -5.27 (p=0.17)18-month follow-up, within-group changes:G1: 0.23 (p=0.96)G2: 25.09 (p=0.30)P value of between-group changes:12-month follow-up: p=0.2618-month follow-up: p=0.43BP (12-month follow-up, 18-month follow-up)Assessed using questionnaire of general practitioners 12-month follow-up:Diastolic BP within-group changes:G1: -1.80 (p=0.13) G2: -1.05 (p=0.68)Systolic BP within-group changes:G1: -5.27 (p=0.007)G2: 2.35 (p=0.25)18-month follow-up:Diastolic BP within-group changes:G1: 0.03 (p=0.98)G2: -0.11 (p=0.75)Systolic BP within-group changes:G1: -1.76 (p=0.44)G2: 1.84 (p=0.44)12-month follow-up, P value of between-group changes:Diastolic: p=0.66Systolic: p=0.007 (favors intervention)18-month follow-up, P value of between-group changes:Diastolic: p=0.94Systolic: p=0.27 | Health-related QOL (6-month follow-up, 12-month follow-up, 18-month follow-up)Assessed using SF-12 (General Health Survey); responses of the SF-12 were weighted and combined to obtain a physical and a mental component summary score, with higher scores representing greater physical and emotional well-being, respectively.6-month follow-up:PCS within-group changes:G1: 0.91 (p=0.28)G2: 0.29 (p=0.74)MCS within-group changes:G1: 1.04 (p=0.23)G2: -1.24 (p=0.16)12-month follow-up:PCS within-group changes:G1: 0.92 (p=0.40)G2: 0.66 (p=0.55)MCS within-group changes:G1: -0.32 (p=0.77)G2: -1.17 (p=0.29)18-month follow-up:PCS within-group changes:G1: 3.02 (p=0.017)G2: -1.23 (p=0.33)MCS within-group changes:G1: -0.34 (p=0.79)G2: -3.21 (p=0.01)PCS P value of between-group changes:6-month follow-up: p=0.6112-month follow-up: p=0.8618-month follow-up: p=0.018MCS P value of between-group changes:6-month follow-up: p=0.0612-month follow-up: p=0.5918-month follow-up: p=0.11 | Not reported  | Not reported  |
| Crowley (2016)35Crowley (2016)35 (continued) | Condition: Diabetes mellitus type 2Provider: Registered nurseSetting: Durham VA Medical CenterCountry: United StatesFunder: VARisk of bias: Some concerns | Intervention (G1): Advanced Comprehensive Diabetes Care N=25Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=25Comparator type: Educational or community-based resource | Glycemic control (3 months, 6 months)Assessed using the change in HbA1c Change in HbA1c % (3 months):G1: -1.3G2: -0.3Change in HbA1c % (6 months):G1: -1.3G2: -0.3Change in HbA1c % (3 months):G1 vs. G2: -1.0 (95% CI, -1.7 to ‑0.2), p=0.012Change in HbA1c % (6 months):G1 vs. G2: -1.0 (95% CI, -2.0 to 0.0), p=0.050BP (3 months, 6 months)Assessed using systolic and diastolic BP; measured in mmHgChange in systolic BP (3 months):G1: -0.3G2: 2.0Change in systolic BP (6 months):G1: -4.6G2: 3.1Change in diastolic BP (3 months):G1: -1.6G2: 0.1Change in diastolic BP (6 months):G1: -4.5G2: 1.1Change in systolic BP (3 months):G1 vs. G2: -2.3 (95% CI, -10.4 to 5.9), p=0.575Change in systolic BP (6 months):G1 vs. G2: -7.7 (95% CI, -14.8 to ‑0.6), p=0.035Change in diastolic BP (3 months):G1 vs. G2: -1.7 (95% CI, -6.6 to 3.2), p=0.498 Change in diastolic BP (6 months):G1 vs. G2: -5.6 (95% CI, -9.9 to ‑1.2), p=0.013 | Not reported | Medication adherence (3 months, 6 months)Assessed using MMAS Predicted probability of medication nonadherence (baseline):G1: 0.64 (95% CI, 0.50 to 0.76)G2: 0.64 (95% CI, 0.50 to 0.76)Predicted probability of medication nonadherence (3 months):G1: 0.41 (95% CI, 0.25 to 0.59)G2: 0.44 (95% CI, 0.26 to 0.62)Predicted probability of medication nonadherence (6 months):G1: 0.36 (95% CI, 0.20 to 0.56)G2: 0.35 (95% CI, 0.19 to 0.56)Odds ratio for medication nonadherence (3 months):G1 vs. G2: 0.90 (95% CI, 0.35 to 2.34), p=0.830Odds ratio for medication nonadherence (6 months):G1 vs. G2: 1.02 (95% CI, 0.33 to 3.19), p=0.970 | Hypoglycemia (6 months, no additional follow-up)Assessed using self-monitored blood glucoseBlood glucose values <70mg/dL:G1: median, 0 (IQR, 0 to 4)Blood glucose values <60mg/dL:G1: median, 0 (IQR, 0 to 1)N participants with >5 blood glucose values <60mg/dL:G1: 3 |
| Van Dyck (2013)30Van Dyck (2013)30(continued)Van Dyck (2013)30 (continued)Van Dyck (2013)30 (continued)Van Dyck (2013)30 (continued) | Diabetes type: Diabetes mellitus type 2 Provider: PsychologistSetting: Endocrinology department at an academic hospitalCountry: BelgiumFunder: Fund for Scientific Research FlandersRisk of bias: Some concerns | Intervention (G1): Physical activity intervention (telephone-based motivational interviewing) + UCN=60Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=32Comparator type: Other UC  | Glycemic control (24 weeks, 1 year)Assessed using HbA1c; the Adams Hemoglobin A1c procedure was used for analysis; values abstracted as %Baseline:G1: 7.3 (0.9)G2: 7.3 (0.9)24 weeks:G1: 7.4 (0.8)G2: 7.5 (1.5)1 year:G1: 7.3 (0.9)G2: 7.6 (1.5)Group x Time interaction for HbA1c (24 weeks):G1 vs. G2: 1.01, p=NS Group x Time interaction for HbA1c (1 year):G1 vs. G2: 1.67, p=NSSystolic BP (24 weeks, 1 year)Assessed using Omron M6 (routinely calibrated); reported in mmHgBaseline:G1: 133.73 (15.28)G2: 129.66 (15.48)24 weeks:G1: 132.18 (14.49)G2: 134.28 (15.96)1 year:G1: 132.57 (15.66)G2: 133.88 (23.56)Group x Time interaction for systolic BP (24 weeks):G1 vs. G2: 3.42, p=NSGroup x Time interaction for systolic BP (1 year):G1 vs. G2: 1.73, p=NSWeight (24 weeks, 1 year)Assessment tool not reported; body weight measured wearing light clothing and without shoes and measured twice with the average of the 2 measurements used for analysis; reported in kilograms Baseline:G1: 89.22 (12.63)G2: 84.50 (12.38)24 weeks:G1: 89.20 (13.01)G2: 85.15 (13.03)1 year:G1: 89.65 (13.47)G2: 84.82 (12.43)Group x Time interaction for weight (24 weeks):G1 vs. G2: 1.08, p=NSGroup x Time interaction for weight (1 year):G1 vs. G2: 0.76, p=NSBMI (24 weeks, 1 year)Assessment tool not reported; body weight measured wearing light clothing and without shoes and measured twice with the average of the 2 measurements used for analysis; reported in kilograms/meter2 Baseline:G1: 30.24 (2.62)G2: 29.74 (2.95)24 weeks:G1: 30.23 (2.73)G2: 29.82 (3.23)1 year:G1: 30.39 (2.98)G2: 29.71 (3.39)Group x Time interaction for BMI (24 weeks):G1 vs. G2: 1.23, p=NSGroup x Time interaction for BMI (1 year):G1 vs. G2: 0.52, p=NSLipids (total cholesterol, HDL, LDL, triglycerides) (24 weeks, 1 year)Assessed using enzymatic colorimetric analyses; values reported in milligrams/deciliterTotal cholesterol (baseline):G1: 4.31 (0.56)G2: 4.42 (0.74)Total cholesterol (24 weeks):G1: 4.24 (0.72)G2: 4.7 (0.95)Total cholesterol (1 year):G1: 4.19 (0.85)G2: 4.26 (1.04)HDL (baseline):G1: 1.26 (0.33)G2: 1.29 (0.43)HDL (24 weeks):G1: 1.22 (0.35)G2: 1.27 (0.42)HDL (1 year):G1: 1.17 (0.31)G2: 1.22 (0.41)LDL (baseline):G1: 2.19 (0.63)G2: 2.32 (0.73)LDL (24 weeks):G1: 2.18 (0.63)G2: 2.20 (0.73)LDL (1 year):G1: 2.10 (0.71)G2: 2.31 (0.85)Triglycerides (baseline):G1: 1.94 (1.16)G2: 1.98 (1.25)Triglycerides (24 weeks):G1: 1.96 (1.14)G2: 1.95 (1.42)Triglycerides (1 year):G1: 2.03 (1.16)G2: 1.91 (1.36)Group x Time interaction for total cholesterol (24 weeks):G1 vs. G2: 0.02, p=NSGroup x Time interaction for total cholesterol (1 year):G1 vs. G2: 0.06, p=NSGroup x Time interaction for HDL (24 weeks):G1 vs. G2: 0.54, p=NSGroup x Time interaction for HDL (1 year):G1 vs. G2: 0.45, p=NSGroup x Time interaction for LDL (24 weeks):G1 vs. G2: 0.89, p=NSGroup x Time interaction for LDL (1 year):G1 vs. G2: 0.36, p=NSGroup x Time interaction for triglycerides (24 weeks):G1 vs. G2: 0.05, p=NSGroup x Time interaction for triglycerides (1 year):G1 vs. G2: 0.47, p=NS | Not reported | Not reported | Not reported |
| Gudban (2021)33Gudban (2021)33 (continued) | Diabetes type: Diabetes mellitus type 2 Provider: Registered dieticianSetting: Hospital clinicCountry: IsraelFunder: Not reportedRisk of bias: Some concerns | Intervention (G1): Dietary intervention + UCN=12Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=10Comparator type: Other UC  | Glycemic control (3 months, no additional follow-up)Assessed using HbA1c; laboratory evaluations HbA1c (baseline), mean (SD):G1: 8.1 (9.1)G2: 7.8 (0.6)HbA1c (3 months), mean (SD):G1: 7.5 (1.6)G2: 7.0 (0.5)HbA1c within group change (3 months):G1: p=0.08G2: p=0.437Lipid panel (3 months, no additional follow-up)Assessed using laboratory evaluationTotal cholesterol (mg%) (baseline), mean (SD):G1: 177 (8.5)G2: 162 (30)Total cholesterol (3 months), mean (SD):G1: 166 (10.5)G2: 172 (45)Cholesterol within group change (3 months): G1: p=0.216G2: p=0.04Triglycerides (mg%) (baseline), mean (SD):G1: 147 (9.5)G2: 163 (19)Triglycerides (3 months), mean (SD):G1: 150 (19.5)G2: 200 (49)Triglycerides within group change (3 months):G1: p=0.378G2: p=0.407BMI (3 months, no additional follow-up)Assessed using BMI; clinical evaluation BMI (kg/m2) (baseline), mean (SD):G1: 29.9 (1.3)G2: 32.0 (1.5)BMI (kg/m2) (3 months), mean (SD):G1: 29.2 (1.1)G2: 32.5 (1.5)BMI within group change (3 months):G1: p=NR (authors state „NS“)G2: p=NR (authors state „NS“) | Not reported | Not reported | Not reported |
| Karhula (2015)27Karhula (2015)27 (continued)Karhula (2015)27 (continued)Karhula (2015)27 (continued) | Diabetes type: Diabetes mellitus type 2 Provider: Registered nurseSetting: Social and healthcare districtCountry: FinlandFunder: European Commission Information and Communication Technologies Policy Support Program, EksoteRisk of bias: Some concerns | Intervention (G1): Mobile health coaching and self-monitoring of health parameters with the help of a remote patient monitoring system + UCN=208Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=79Comparator type: Educational or community-based resource  | Glycemic control (12 months, no additional follow-up)Assessed using A1c; greater reduction in A1c value indicates greater glycemic controlA1c value:G1 (n=156): 7.29G2 (n=61): 7.36Change in A1c value:G1 (n=156): 0.04 (95% CI, -0.09 to 0.17)G2 (n=61): 0.18 (95% CI, -0.02 to 0.35)Between-group difference:G1 (n=156) vs. G2 (n=61): -0.106 (95% CI, -0.33 to 0.11), p=0.34Lipid panel (12 months, no additional follow-up)Assessed using total cholesterol, HDL, LDL, triglycerides; greater reduction in values indicates greater lipid controlTotal cholesterol value:G1 (n=153): 4.25G2 (n=60): 4.19Change in total cholesterol value:G1 (n=153): -0.1 (95% CI, -0.23 to 0.04)G2 (n=60): -0.16 (95% CI, -0.35 to 0.03)HDL value:G1 (n=156): 1.26G2 (n=60): 1.29Change in HDL value:G1 (n=156): 0.02 (95% CI, -0.01 to 0.05)G2 (n=60): 0.03 (95% CI, -0.05 to 0.12)LDL value:G1 (n=156): 2.35G2 (n=60): 2.27Change in LDL value:G1 (n=156): -0.4 (95% CI, -0.51 to ‑0.28)G2 (n=60): -0.39 (95% CI, -0.55 to ‑0.23), p<0.001Triglycerides value:G1 (n=154): 1.71G2 (n=59): 1.89Change in triglycerides value:G1 (n=154): 0.01 (95% CI, -0.10 to 0.10)G2 (n=59): 0.11 (95% CI, -0.14 to 0.36)Total cholesterol between-group difference:G1 (n=153) vs. G2 (n=60): 0.065 (95% CI, -0.15 to 0.28), p=0.54HDL between-group difference:G1 (n=156) vs. G2 (n=60): 0.005 (95% CI, -0.054 to 0.064), p=0.61LDL between-group difference:G1 (n=156) vs. G2 (n=60): 0.037 (95% CI, -0.19 to 0.20), p=0.66Triglycerides between-group difference:G1 (n=154) vs. G2 (n=59): -1.22 (95% CI, -0.32 to 0.09), p=0.25BP (12 months, no additional follow-up)Assessed using systolic BP and diastolic BP; greater reduction in values indicates greater effectivenessSystolic BP value:G1 (n=148): 149.3G2 (n=60): 147.8Change in systolic BP value:G1 (n=148): -6.10 (95% CI, -9.10 to -3.09), p<0.001G2 (n=60): -4.12 (95% CI, -7.43 to ‑0.81), p=0.02Diastolic BP value:G1 (n=148): 86.6G2 (n=60): 84.6Change in diastolic BP value:G1 (n=148): -2.61 (95% CI, -4.50 to -0.72), p=0.007G2 (n=60): -2.08 (95% CI, -4.50 to 0.34), p=NRSystolic BP between-group difference:G1 (n=148) vs. G2 (n=60): -0.196 (95% CI, -4.57 to 4.18), p=0.93Diastolic BP between-group difference:G1 (n=148) vs. G2 (n=60): 0.668 (95% CI, -2.18 to 3.52), p=0.65Weight (12 months, no additional follow-up)Assessment tool not reported Weight (kg):G1 (n=153): 88.7G2 (n=60): 88.6Change in weight, within group:G1 (n=153): -0.90 (95% CI, -1.71 to -0.22)G2 (n=60): -0.30 (95% CI, -1.21 to 0.60)Change in weight, between-group difference:G1 (n=153) vs. G2 (n=60): -0.566 (95% CI, -1.86 to 0.73) | Health-related QOL (physical) (12 months, no additional follow-up)Assessed using SF36-PCS; greater increase in scores indicate greater QOL improvement PCS:G1 (n=146): 43.2 G2 (n=55): 42.0Change in PCS:G1 (n=146): 0.53 (95% CI, -0.40 to 1.47)G2 (n=55): 0.51 (95% CI, -1.19 to 2.21)PCS between-group difference:G1 (n=146) vs. G2 (n=55): 0.875 (95% CI, 0.809 to 0.95), p=0.85Health-related QOL (mental) (12 months, no additional follow-up)Assessed using SF36-MCS; greater increase in scores indicate greater QOL improvementMCS:G1 (n=148): 51.2G2 (n=56): 52.0Change in MCS:G1 (n=148): 1.06 (95% CI, -0.42 to 2.53)G2 (n=56): 1.84 (95% CI, 0.02 to 3.71)MCS between-group difference:G1 (n=148) vs. G2 (n=56): -0.77 (95% CI, ‑3.15 to 1.61), p=0.52 | Not reported | Not reported |
| REMOTE Study; Nicolucci (2015)20REMOTE Study; Nicolucci (2015)20(continued)REMOTE Study; Nicolucci (2015)20(continued) | Diabetes type: Diabetes mellitus type 2 Provider: Registered nurseSetting: General practitioners’ officesCountry: ItalyFunder: MSD Italia (pharmaceutical company)Risk of bias: High | Intervention (G1): Home telemedicine systemN=153Intervention type: Audio-only with supports to add new synchronous interaction with audioComparator (G2): UCN=149Comparator type: Other UC  | Glycemic control (6 months, 12 months)Assessed using HbA1c values HbA1c values, mean (SD)6 months:G1 (n=114): 7.32 (0.8)G2 (n=135): 7.70 (0.9)12 months:G1 (n=114): 7.44 (1.0)G2 (n=135): 7.78 (1.1)Estimated mean difference (12 months): -0.33 (0.1), p=0.001BP (mmHg) (6 months, 12 months)Assessed during study visits Systolic BP (6 months):G1 (n=114): 136.1 (10.3)G2 (n=135): 135.6 (13.0)Systolic BP (12 months):G1 (n=114): 135.7 (9.6)G2 (n=135): 135.9 (12.4)Diastolic BP (6 months):G1 (n=114): 79.4 (7.6)G2 (n=135): 79.7 (6.3)Diastolic BP (12 months):G1 (n=114): 79.6 (7.2)G2 (n=135): 79.2 (7.0)Mean systolic BP difference (12 months): 0.67 (1.1), p=0.58Mean diastolic BP difference (12 months): 0.37 (0.73), p=0.62Lipids (6 months, 12 months)Assessed during study visits Total cholesterol (6 months):G1 (n=114): 184 (41)G2 (n=135): 183 (40)Total cholesterol (12 months):G1 (n=114): 184 (40)G2 (n=135): 179 (35)HDL cholesterol (6 months):G1 (n=114): 50.1 (12.8)G2 (n=135): 48.7 (14.0)HDL cholesterol (12 months):G1 (n=114): 51.3 (12.9)G2 (n=135): 50.1 (11.9)LDL cholesterol (6 months):G1 (n=114): 123 (32)G2 (n=135): 119 (34)LDL cholesterol (12 months):G1 (n=114): 118 (33)G2 (n=135): 114 (30)Triglycerides (6 months):G1 (n=114): 135 (55)G2 (n=135): 157 (117)Triglycerides (12 months):G1 (n=114): 141 (80)G2 (n=135): 148 (89)Mean difference (12 months):Total cholesterol: -0.28 (3.38), p=0.94HDL cholesterol: 1.1 (0.8), p=0.21LDL cholesterol: 0.7 (2.7), p=0.77Triglycerides: -13.8 (8.8), p=0.12 | QOL (physical) (6 months, 12 months)Assessed using SF‑36-PCS; Higher values represent higher QOL6 months, mean (SD):G1 (n=114): 46.4 (8.7)G2 (n=135): 45.5 (9.3)12 months, mean (SD)G1 (n=114): 46.9 (8.8)G2 (n=135): 45.4 (10.2)Mean PCS difference (SD) (12 months): 0.6 (1.4), p=0.66QOL (mental) (6 months, 12 months)Assessed using SF‑36-MCS; higher scores indicate higher QOL6 months, mean (SD):G1 (n=114): 50.4 (9.9)G2 (n=135): 48.2 (9.7)12 months, mean (SD):G1 (n=114): 50.0 (10.8)G2 (n=135): 46.7 (10.2)Mean difference (12 months): 3.4 (1.5), p=0.03 | Hospitalization/ emergency room visits (12 months, no additional follow-up)Assessed using incident rate (rate per person/year); combined hospital stays and emergency department visits measureIncidents, n (rate per person/year):G1 (n=114): 11 (0.04)G2 (n=135): 14 (0.04)Incident rate ratio: 1.08 (95% CI, 0.49 to 2.37), p=0.86 | Severe hypoglycemia (12 months)G1 (n=114): 0 (0)G2 (n=135): 0 (0) |
| Living Well With Diabetes; Eakin (2014)29Living Well With Diabetes; Eakin (2014)29 (continued)Living Well With Diabetes; Eakin (2014)29 (continued) | Diabetes type: Diabetes mellitus type 2 Provider: Educator, counselor, or coachSetting: Primary care practicesCountry: AustraliaFunder: National Health and Medical Research Council project grant and Australian Diabetes Society National Diabetes Strategy grantRisk of bias: Some concerns | Intervention (G1): Telephone-delivered weight loss intervention + UCN=151Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=151Comparator type: Educational or community-based resource  | Glycemic control (6 months, 24 months)Assessed using HbA1c measured as % and mmol/mol, then log-transformed, exponentiated and reported as relative ratesHbA1c, % (relative rate, 95% CI) G1: 6 months: 0.99 (0.96 to 1.02), p=0.42124 months: 0.98 (0.96 to 1.01), p=0.262HbA1c, mmol/mol (relative rate, 95% CI)G1: 6 months: 0.98 (0.94 to 1.02), p=0.31224 months: 0.98 (0.94 to 1.02), p=0.261Lipid panel (6 months, 24 months)Assessed using total cholesterol, HDL cholesterol, and triglycerides, which were measured by an enzymatic colorimetric assay with a Modular Chemistry Analyzer (Roche; Tokyo, Japan); LDL cholesterol was determined using the Friedewald equationTel – UC, Completers:Total cholesterol, mmol/L (mean difference, 95% CI):6 months: 1.00 (0.97 to 1.04), p=0.93624 months: 1.01 (0.97 to 1.06) p=0.602HDL cholesterol, mmol/L (mean difference, 95% CI):6 months: 1.01 (0.97 to 1.05), p=0.60924 months: 1.00 (0.96 to 1.05), p=0.833LDL cholesterol, mmol/L (mean difference, 95% CI):6 months: 1.01 (0.95 to 1.07), p=0.70724 months: 1.03 (0.97 to 1.11), p=0.334Triglycerides, mmol/L (mean difference, 95% CI):6 months: 0.96 (0.89 to 1.04), p=0.32724 months: 0.94 (0.85 to 1.03), p=0.181BP (6 months, 24 months)Assessed using portable sphygmomanometer (Gamma G5; Heine, Herrsching, Germany) Tel – UC, Completers:Systolic BP, mmHg (mean difference, 95% CI):6 months: -1.76 (-4.7 to 1.17), p=0.23824 months: 0.51 (-2.81 to 3.83), p=0.763Diastolic BP, mmHg (mean difference, 95% CI):6 months: -0.11 (-1.74 to 1.51), p=0.89024 months: -0.27 (-2.29 to 1.75), p=0.792Weight loss (6 months, 24 months)Assessed using standard calibrated scales (model TI TBF-350; Tanita Inc., Tokyo, Japan)Tel – UC, Completers:Weight loss, % (mean difference, 95% CI):6 months: -1.29 (-2.13 to -0.46), p=0.00224 months: -0.61 (-1.95 to 0.73), p=0.371Weight loss, kg (mean difference, 95% CI):6 months: -1.30 (-2.14 to -0.46), p=0.00324 months: -0.67 (-2.00 to 0.67), p=0.327 | Not reported | Not reported | Not reported |
| von Storch (2019)16von Storch (2019)16 (continued) | Diabetes type: Diabetes mellitus type 2 Provider: Educator, counselor, or coachSetting: Private health insurance company providing telemedicine assistanceCountry: GermanyFunder: North Rhine-Westphalian funding scheme ForschungskollegsRisk of bias: High | Intervention (G1): Lifestyle telemedicine-assisted self-management program + UCN=82Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=68Comparator type: Other UC  | Glycemic control (3 months)Assessed using serum levels of HbA1c, which were obtained from the physician’s routine laboratory; change in HbA1cHbA1c (baseline), mean (SD):G1 (n = 52): 7.05 (0.977)G2 (n =54): 6.89 (1.01)HbA1c (3 months), mean (SD):G1 (n = 52): 6.58 (0.723)G2 (n =54): 6.95 (1.02)HbA1c (3 months), mean (SD):G1 (n = 52) vs. G2 (n =54): -0.363 (0.173), p=0.038Effect size, Cohen’s dG1 vs. G2: 0.408BMI (3 months)Assessed using medical record; change in BMI (kg/m2) over 3 monthsBMI (baseline), mean (SD):G1 (n = 53): 32.3 (7.31)G2 (n =55): 29.3 (4.43)BMI (3 months), mean (SD):G1 (n = 53): 31.8 (6.98)G2 (n =55): 29.39 (4.37)BMI (3 months), mean (SD):G1 (n = 53) vs. G2 (n =55): 2.36 (1.12), p=0.036Effect size, Cohen’s dG1 vs. G2: 0.408 | Not reported | Not reported | Not reported |
| Healthy Outcomes through Patient Empowerment (HOPE); Naik (2019)24Healthy Outcomes through Patient Empowerment (HOPE); Naik (2019)24 (continued) | Diabetes type: Unspecified; poorly controlled (HbA1c of 7.5% for 1 year before the study)Provider: Psychologists, nurses, pharmacists, or social workersSetting: Michael E. DeBakey VA Medical Center and affiliated community-based outpatient clinicsCountry: United StatesFunder: Veterans Health Administration Health Services Research and Development Office, National Institute of Diabetes and Digestive and Kidney DiseasesRisk of bias: Some concerns | Intervention (G1): HOPE intervention + UCN=136Intervention type: Audio-only with supports to supplement with audio careComparator (G2): Enhanced UCN=89Comparator type: Educational or community-based resource  | Glycemic control (6 months, 12 months)Assessed using HbA1c (%); change in HbA1c from baselineHbA1c (baseline), mean (SD):G1: 9.2 (1.4) G2: 9.3 (1.5)HbA1c (6 months), mean (SD):G1: 9.1 (1.7) G2: 8.7 (1.7)HbA1c (12 months), mean (SD):G1: 8.7 (1.6)G2: 8.9 (2.0)HbA1c response (6 months):G1 (n=106): 40 (37.7%)G2 (n=78): 45 (57.7%)HbA1c response (12 months):G1 (n=90): 44 (48.9%)G2 (n=68): 35 (51.5%)HbA1c between group difference (6 months), mean (95% CI):G1 vs. G2: -0.40 (95% CI: -0.86 to 0.06), p=0.08HbA1c between group difference (12 months), mean (95% CI): G1 vs. G2: -0.06 (95% CI: -0.61 to 0.50), p=0.83Success rate difference (6 months):G1 (n=106) vs. G2 (n=78): -0.199 (95% CI, 0.05 to 0.33), p=0.01Success rate difference (12 months):G1 (n=90) vs. G2 (n=68): -0.026 (95% CI, -0.13 to 0.18), p=0.75 | Not reported | Not eligible | Not reported |
| Randomized Trial of Health Coaching in Secondary Prevention of Diabetes and Heart Disease (TERVA); Patja (2012)31Randomized Trial of Health Coaching in Secondary Prevention of Diabetes and Heart Disease (TERVA); Patja (2012)31 (continued) | Diabetes type: Diabetes mellitus type 2; poorly controlled („unmet treatment goals“; type 2 diabetes on medication and HbA1c >7)Provider: Certified or public health nursesSetting: Primary care and hospital registries and recordsCountry: FinlandFunder: Joint Authority for Paijat-Hame Social and Health Care; Sitra – the Finnish Innovation Fund; TEKES – the Finish Funding Agency for Technology and Innovation; Pfizer OyRisk of bias: Some concerns | Intervention (G1): Telephone health coaching + UCN=1034Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=501Comparator type: Referred to or directed to seek healthcare as needed  | Glycemic control (12 months, no additional follow-up)Assessed using HbA1c; Hb1Ac target achieved: <7% HbA1c target achieved (12 months), n (%):G1 (n=215): 65 (30.2)G2 (n=91): 27 (29.7)BP, systolic and diastolic (12 months, no additional follow-up)Assessment tool not reported; Systolic BP target: <140 mmHgDiastolic BP target: <85 mmHgParticipants achieving systolic BP target (12 months), n (%):G1 (n=327): 107 (32.7)G2 (n=148): 53 (35.8)Participants achieving diastolic BP target (12 months), n (%):G1 (n=264): 120 (45.5) G2 (n=130): 49 (37.7)Lipids (12 months, no additional follow-up)Assessment tool not reported; Serum total cholesterol target: <4.5 mmol/lSerum LDL cholesterol target: <2.5 mmol/l Serum total cholesterol target achieved (12 months), n (%):G1 (n=75): 23 (30.7) G2 (n=20): 7 (35.0)Serum LDL cholesterol target achieved (12 months), n (%):G1 (n=67): 29 (43.4)G2 (n=19): 9 (47.4) | Not reported | Not reported | Not reported |
| Peasah (2020)19 | Diabetes type: Unspecified Provider: PharmacistSetting: Primary care practicesCountry: United StatesFunder: Mercer University College of PharmacyRisk of bias: High | Intervention (G1): Telephone support for medication adherence + UCN=39Intervention type: Audio-only to supplement with audio careComparator (G2): UCN=39Comparator type: Other UC  | Glycemic control (12 weeks, no additional follow-up)Assessed using change in HbA1c  Mean (SD) change in HbA1c (12 weeks):G1: -0.35 (0.88), p = 0.0269G2: 0.338 (0.802), p = 0.0128Association between baseline and 12 weeks HbA1c for control group compared to intervention group (multiple regression estimate):G2 vs. G1: 0.5547, p=0.0019 | Not reported | Not reported  | Not reported |
| Levy (2015)36Levy (2015)36(continued) | Diabetes type: Diabetes mellitus type 2 Provider: Registered nurseSetting: Public hospitalCountry: United StatesFunder: New York University-Health and Hospitals Corporation Clinical and Translational Science InstituteRisk of bias: High for glycemic control, low for utilization and hypoglycemia | Intervention (G1): Mobile Insulin Titration Intervention + UCN=33Intervention type: Audio-only with supports to supplement with audio careComparator (G2): UCN=28Comparator type: Referred to or directed to seek healthcare as needed  | Glycemic control (12 weeks, no additional follow-up)Assessed using HbA1c; change in A1c, greater decrease in A1c indicates greater effectiveness HbA1c value (12 weeks):G1 (n=28): 9.34% (1.45)G2 (n=14): 9.99% (1.33)HbA1c mean change (12 weeks):G1 (n=28): -1.90 (2.64)G2 (n=14): -1.81 (2.63)HbA1c mean change (12 weeks):G1 vs. G2: NR, p=0.99HbA1c values with combined results from 10 multiple imputations (12 weeks):G1 (n=28) vs. G2 (n=14): -0.85 (95% CI, -1.83 to 0.13), p=0.09 | Not reported | Not eligible | Hypoglycemia (12 weeks, no additional follow-up)Self-reported by patients; more hypoglycemic events indicate worse effectivenessHypoglycemia cases:G1: 3G2: 2 |
| Surveillance, PREvention, and ManagEment of Diabetes Mellitus (SUPREME-DM) Study; O’Connor (2014)34Surveillance, PREvention, and ManagEment of Diabetes Mellitus (SUPREME-DM) Study; O’Connor (2014)34 (continued)Surveillance, PREvention, and ManagEment of Diabetes Mellitus (SUPREME-DM) Study; O’Connor (2014)34 (continued)Surveillance, PREvention, and ManagEment of Diabetes Mellitus (SUPREME-DM) Study; O’Connor (2014)34 (continued) | Diabetes type: Diabetes mellitus type 2; poorly controlled (A1c >8% at the time of index medication prescription)Provider: Registered nurses, diabetes educators, or pharmacists (varied by site)Setting: Kaiser Permanente Northern California, Group Health Cooperative, Marshfield Clinic, and Geisinger ClinicCountry: United StatesFunder: Agency for Healthcare Research and QualityRisk of bias: Some concerns | Intervention (G1): Structured telephone call + UCN=1,220Intervention type: Audio-only to supplement with audio careComparator (G2): UCN=1,158Comparator type: Other UC  | Glycemic control (12 months, no additional follow-up)Assessed using A1c outcomes in uncontrolled A1c (i.e., >8%); change in A1c from baseline and decrease in A1c from baseline of at least 0.2% Change from baseline: Mean (SD):G1 (n=506): -1.16 (1.80)G2 (n=463): -1.33 (1.87)Experienced decrease from baseline, n (%):G1: 373 (73.7%)G2: 348 (75.2%)Change from baseline: p=0.149Experienced decrease from baseline: p=0.639BP outcomes in uncontrolled systolic BP (i.e., >140 mmHg) (12 months, no additional follow-up)Assessment tool not specified; change from baseline systolic BP and decrease from baseline in uncontrolled systolic BP Change from baseline, mean (SD):G1 (n=363): -18.1 (20.56)G2 (n=368): -16.4 (18.75)Experienced decrease from baseline, n (%): G1 (n=363): 285 (78.5%)G2 (n=368): 279 (75.8%)Change from baseline: p=0.255Experienced decrease from baseline: p=0.380Lipid panel in uncontrolled LDL cholesterol (i.e., >100 mg/dL) (12 months, no additional follow-up)Assessment tool not specified; Change from baseline LDL cholesterol and decrease from baseline LDL Change from baseline, mean (SD):G1 (n=288): -30.4 (39.02)G2 (n=251): -33.0 (38.36)Experienced decrease from baseline, n (%): G1 (n=288): 218 (75.7%)G2 (n=251): 189 (75.3%)Change from baseline: p=0.438Experienced decrease from baseline: p=0.901 | Not reported | Medication adherence (follow-up >60 days, follow-up >180 days)Assessed using medical group administrative databases; having at least 1 prescription fill of the index medication within 60 days of the prescription datePrimary adherence by the index date among patients with uncontrolled A1c, n yes (%):G1 (n=481): 365 (75.9%)G2 (n=458): 348 (76.0%)Primary adherence within 60 days of new prescription among patients with uncontrolled A1c, n yes (%):G1 (n=481): 413 (85.9%)G2: (n=458): 401 (87.6%)Primary adherence by the index date among patients with uncontrolled systolic BP, n yes, (%):G1 (n=296): 234 (79.1%)G2 (n=317): 241 (76.0%)Primary adherence within 60 days of new prescription among patients with uncontrolled systolic BP, n yes (%):G1 (n=296): 254 (85.8%)G2 (n=317): 263 (83.0%)Primary adherence by the index date among patients with uncontrolled LDL cholesterol, n yes (%):G1 (n=299): 182 (60.9%)G2 (n=270): 189 (70.0%)Primary adherence within 60 days of new prescription among patients with uncontrolled LDL cholesterol, n yes (%):G1 (n=299): 238 (79.6%)G2: (n=270): 221 (81.9%)Medication possession ratio (MPR) among patients with uncontrolled A1c, mean (SD):G1 (n=341): 0.802 (0.22)G2: (n=316): 0.793 (0.24)MPR among patients with uncontrolled systolic BP, mean (SD):G1 (n=341): 0.900 (0.159)G2: (n=316): 0.922 (0.129)MPR among patients with uncontrolled LDL cholesterol, mean (SD):G1 (n=341): 0.851 (0.184)G2: (n=316): 0.846 (0.178)Primary adherence by the index date among patients with uncontrolled A1c: p=0.932Primary adherence within 60 days of new prescription among patients with uncontrolled A1c: p=0.540Primary adherence by the index date among patients with uncontrolled systolic BP: p=0.389Primary adherence within 60 days of new prescription among patients with uncontrolled systolic BP: p=0.354Primary adherence by the index date among patients with uncontrolled LDL cholesterol: p=0.023Primary adherence within 60 days of new prescription among patients with uncontrolled LDL cholesterol: p=0.474MPR among patients with uncontrolled A1c: p=0.903MPR among patients with uncontrolled systolic BP: p=0.126MPR among patients with uncontrolled LDL cholesterol: p=0.839 | Not reported  |
| Leichter (2013)18Leichter (2013)18(continued)Leichter (2013)18 (continued)Leichter (2013)18 (continued) | Diabetes type: Diabetes mellitus type 1 or 2 Provider: PhysicianSetting: Treatment center for diabetes and metabolismCountry: United StatesFunder: Roche DiagnosticsRisk of bias: High | Intervention (G1): Telephone office visits with remote patient monitoringN=49Intervention type: Hybrid with supports to replace other care with audio careComparator (G2): Synchronous in-person visitsN=49Comparator type: Synchronous in-person visits  | Glycemic control (6 months, 12 months)Assessed using HbA1c, tests during clinic visits; non-inferiority analysisHbA1c (6 months), LSM (SD):G1 (n=33): 7.1 (0.2)G2 (n=37): 6.9 (0.2)HbA1c (12 months), LSM (SD):G1 (n=33): 7.4 (0.2)G2 (n=37): 7.1 (0.2)HbA1c (6 months):G1 vs. G2: p=0.43 HbA1c (12 months):G1 vs. G2: p=0.20BP (6 months, 12 months)Assessed using tests during clinic visits; non-inferiority analysisSystolic BP (mm/Hg) (6 months), LSM (SD):G1 (n=33): 130.7 (2.8)G2 (n=37): 131.6 (2.6)Systolic BP (mm/Hg) (12 months), LSM (SD):G1 (n=33): 134.7 (2.8)G2 (n=37): 133.0 (2.6)Diastolic BP (mm/Hg) (6 months), LSM (SD):G1 (n=33): 76.7 (1.2)G2 (n=37): 76.8 (1.1)Diastolic BP (mm/Hg) (12 months), LSM (SD):G1 (n=33): 78.5 (1.2)G2 (n=37): 76.9 (1.1)Systolic BP (mm/Hg) (6 months):G1 vs. G2: p=0.81 Systolic BP (mm/Hg) (12 months): G1 vs. G2: p=0.65Diastolic BP (mm/Hg) (6 months): G1 vs. G2: p=0.94Diastolic BP (mm/Hg) (12 months): G1 vs. G2: p=0.35Cholesterol (6 months, 12 months)Assessed using tests during clinic visits; non-inferiority analysisLDL cholesterol (mg/dL) (6 months), LSM (SD):G1 (n=33): 78.7 (4.8)G2 (n=37): 87.3 (4.6LDL cholesterol (12 months), LSM (SD):G1 (n=33): 79.7 (4.8)G2 (n=37): 90.7 (4.5)HDL cholesterol (mg/dL) (6 months), LSM (SD):G1 (n=33): 48.1 (1.4)G2 (n=37): 47.8 (1.4)HDL cholesterol (mg/dL) (12 months), LSM (SD):G1 (n=33): 47.8 (1.4)G2 (n=37): 48.5 (1.3)Triglycerides (mg/dL) (6 months), LSM (SD):G1 (n=33): 111.0 (18.6)G2 (n=37): 129.0 (17.7)Triglycerides (mg/dL) (12 months), LSM (SD):G1 (n=33): 129.8 (18.8)G2 (n=37): 147.4 (17.3)LDL cholesterol (6 months):G1 vs. G2: p=0.20LDL cholesterol (12 months): G1 vs. G2: p=0.10HDL cholesterol (6 months):G1 vs. G2: p=0.86HDL cholesterol (12 months):G1 vs. G2: p=0.75Triglycerides (6 months):G1 vs. G2: p=0.48Triglycerides (12 months):G1 vs. G2: p=0.49BMI (6 months, 12 months)Assessed using tests during clinic visits; non-inferiority analysisBMI (6 months), LSM (SD):G1 (n=33): 32.0 (0.3)G2 (n=37): 32.1 (0.3)BMI (12 months), LSM (SD):G1 (n=33): 31.3 (0.3)G2 (n=37): 32.0 (0.3)BMI (6 months):G1 vs. G2: p=0.67 BMI (12 months):G1 vs. G2: p=0.06 | Not reported | Not reported | Hospitaliz-ation for hypo-glycemia or hyperglycemia (6 months, 12 months)Non-inferiority analysisG1: 0G2: 0 |
| O’Neil (2016)26O’Neil (2016)26 (continued)O’Neil (2016)26 (continued)O’Neil (2016)26 (continued) | Diabetes type: Diabetes mellitus type 2 Provider: Educator, counselor, or coachSetting: Various clinics, hospitals, research centers, and other sitesCountry: United StatesFunder: Weight Watchers InternationalRisk of bias: Some concerns | Intervention (G1): Weight Watchers weight management program with coordinated telephone and email consultationsN=279Intervention type: Audio-only with supports to replace other care with audio careComparator (G2): Synchronous in-person visitsN=284Comparator type: Synchronous in-person visits  | Glycemic control (3 months, 12 months)Assessed using HbA1c; greater decrease in A1c indicates greater effectivenessHbA1c (3 months):G1 (n=257): 8.12 (1.22)G2 (n=251): 7.74 (1.26)HbA1c (12 months):G1 (n=223): 8.01 (1.41)G2 (n=250): 8.40 (1.5)Total change in HbA1c (12 months), %G1: -0.32 (95% CI: 0.16 to 0.49), p<0.001G2: 0.16 (95% CI: 0.03 to 0.36), p=0.020Participants that achieved HbA1c below 7.0% (12 months), % (95% CI):G1: 23.8 (95% CI: 18.2 to 29.4)G2: 13.6 (95% CI: 9.4 to 17.8)HbA1c difference between groups (each follow-up):p<0.001 (favors intervention)Participants that achieve HbA1c below 7.0% (12 months):p=0.004 (favors intervention)Lipid panel (3 months, 12 months)Assessed using HDL, LDL, triglycerides, total cholesterol; greater decrease in lipid panel values indicates greater effectivenessHDL (3 months):G1 (n=249): 47.68 (12.3)G2 (n=258): 49.1 (13.1)HDL (12 months):G1 (n=224): 51.66 (13.6)G2 (n=250): 51.15 (13.3)LDL (3 months):G1 (n=245): 99.22 (30.5)G2 (n=254): 100.6 (31.6)LDL (12 months):G1 (n=219): 99.89 (31.3)G2 (n=240): 97.45 (31.9)Triglycerides (3 months):G1 (n=249): 146.4 (79.1)G2 (n=258): 143.8 (79.5)Triglycerides (12 months):G1 (n=224): 163.7 (168.3)G2 (n=250): 148.2 (104.7)Total cholesterol (3 months):G1 (n=249): 175.8 (37.5)G2 (n=258): 178.3 (37.9)Total cholesterol (12 months):G1 (n=224): 182.9 (40.3)G2 (n=250): 177.0 (37.0)Group x Time interaction:HDL: p=0.29LDL: p=0.99Triglycerides: p=0.91Total cholesterol: p=0.49BP (3 months, 12 months)Assessed using diastolic BP, systolic BP; greater decrease in blood pressure values indicates greater effectivenessDiastolic BP (3 months):G1 (n=249): 77.3 (10.6)G2 (n=255): 78.3 (9.7)Diastolic BP (12 months):G1 (n=229): 75.7 (10.1)G2 (n=254): 77.7 (9.8)Systolic BP (3 months):G1 (n=249): 126.8 (16.5)G2 (n=255): 128.7 (16.5)Systolic BP (12 months):G1 (n=229): 125.9 (15.8)G2 (n=254): 128.5 (16.4)Group x Time interaction:Diastolic BP: p=0.99Systolic BP: p=0.43Weight loss (%) (3 months, 12 months)Assessed using weight; greater number indicates greater effectivenessPercent weight loss (3 months):G1 (n=250): 3.34 (3.26)G2 (n=255): 1.43 (2.54)Percent weight loss (12 months):G1 (n=230): 3.99 (5.20)G2 (n=254): 1.79 (4.01)Group x Time interaction:p<0.001 (favors intervention) | Not reported | Not reported | Symptoms of hypoglycemia (3 months, 12 months)Assessed using hypoglycemia; experiencing symptoms of hypoglycemia indicates adverse eventParticipants experiencing symptoms of hypoglycemia (3 months):G1: 35%G2: 21%Participants experiencing symptoms of hypoglycemia (12 months):G1: 18%G2: 16%Serious adverse events reported (12 months):G1: 11G2: 10Hypoglycemia that required hospitalization and considered study related (12 months):G1: 1 G2: 0Symptoms of hypoglycemia (3 months):p<0.001 (favors control)Symptoms of hypoglycemia (12 months):p=0.63 |

\*Value calculated by abstractor; not reported in original study.

**Abbreviations:** BMI, body mass index; BP, blood pressure; CI, confidence interval; DL, deciliter; EMR, electronic medical record; G, group; HbA1c/A1c, hemoglobin A1c or glycated hemoglobin; HDL, high-density lipoprotein; kg, kilograms; lb, pound; LDL, low-density lipoprotein; LSM, least squares mean; MCS, mental component score; mg, milligrams; MMAS-4, 4-item Morisky Medication Adherence Scale; mmHg: millimeters of mercury; mmol, millimoles; MPR, medication possession ratio; L, liter; N, number; NR, not reported; NS, not significant; NYC, New York City; OR, odds ratio; PCS, physical component score; PDC, proportion of days covered; QOL, quality of life; SD, standard deviation; SF-12, short form 12 item questionnaire; SF-36, short form 36 item questionnaire; UC, usual care; VA, Veterans Affairs; vs., versus.

**SDC Table 4. Study Population and Intervention Characteristics by Population at Risk of Health Disparities.\***

|  |  |  |
| --- | --- | --- |
|  | Study Conducted in Population at Risk of Disparity (n=9) | Study Not Conducted in Population at Risk of Disparity (n=13) |
| Mean Baseline A1c (% range) | 7.8-11.7 | 6.9-9.8 |
|  | Number of studies | Number of studies |
| Intervention Focus |  |  |
|  BLC | 2 | 7 |
|  MM | 1 | 2 |
|  BLC+MM | 6 | 4 |
| Intervention Frequency |  |  |
|  > Monthly (e.g., weekly or biweekly) | 5 | 3 |
|  Monthly | 2 | 5 |
|  < Monthly  | 1 | 5 |
|  As needed | 1 | 0 |
| Intervention Supports\*\* |  |  |
|  Educational materials | 4 | 4 |
|  Remote monitoring tools | 3 | 5 |
|  Web-based platform/technology | 1 | 3 |
|  Asynchronous communication | 3 | 2 |

**Abbreviations:** BIPOC, Black, Indigenous, and people of color’ BLC, behavioral/lifestyle counseling, MM, medication management, MM+BLC, both behavioral and lifestyle counseling.

\*Defined as at least a quarter of study participants represented populations at risk for disparities, including BIPOC individuals; older adults (age 65 years or older); individuals with limited English proficiency; individuals with low health or digital literacy; immigrants or refugees; persons with intellectual or physical disabilities; or veterans. Several studies had groups with multiple risks for disparities.

\*\*Interventions may have had more than 1 support, so column numbers may exceed total.

**SDC Figure 1. Effects of Supplemental Audio Interventions on A1c by Risk of Bias Assessment**

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**Abbreviations:** AM, asynchronous messaging; BLC, behavioral/lifestyle counseling; EUC, enhanced usual care; MM, medication management; UC, usual care**.**

**SDC Figure 2. Effects of Supplemental Audio Interventions on A1c by Intervention Contact**

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**Abbreviations:** AM, asynchronous messaging; BLC, behavioral/lifestyle counseling; EUC, enhanced usual care; MM, medication management; UC, usual care.

**SDC Figure 3. Effects of Supplemental Audio Interventions on A1c by Intervention Focus**

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**Abbreviations:** AM, asynchronous messaging; BLC, behavioral/lifestyle counseling; EUC, enhanced usual care; MM, medication management; UC, usual care.

**SDC Figure 4. Effects of Supplemental Audio Interventions on A1c by Population at Risk of Health Disparities\***



**Abbreviations:** AM, asynchronous messaging; BLC, behavioral/lifestyle counseling; EUC, enhanced usual care; MM, medication management; UC, usual care.

\* Defined as at least a quarter of study participants represented populations at risk for disparities, including Black, Indigenous, and people of color (BIPOC) individuals; older adults (age 65 years or older); individuals with limited English proficiency; individuals with low health or digital literacy; immigrants or refugees; persons with intellectual or physical disabilities; or veterans. Several studies had groups with multiple risks for disparities.