**Supplemental Digital Appendix 1**

**Search Strategy for a Cross-Discipline Systematic Review of the Literature on SBIRT Curricular Interventions for Health Care Trainees, from Inception Through March 2021, Using PubMed, ERIC, CINAHL, Ovid HealthSTAR, and PsycINFO databases**

|  |  |  |
| --- | --- | --- |
| **Search Order** | **First Keyword Blank** | **Second Keyword Blank** |
| 1st Search | SBIRT | Training |
| 2nd Search | SBIRT | Education |
| 3rd Search | SBIRT | Curriculum |
| 4th Search | SBIRT | Program Evaluation |
| 5th Search | SBIRT | Clerkship |
| 6th Search | SBIRT | Residency |
| 7th Search | SBIRT | Internship |
| 8th Search | SBIRT | Fellowship |
| 9th Search | SBIRT | Workshop |
| 10th Search | SBIRT | Implementation |
| 11th Search | SBIRT | Dissemination |
| 12th Search | SBIRT | Student |
| 13th Search | Screening and Brief Intervention | Training |
| 14th Search | Screening and Brief Intervention | Education |
| 15th Search | Screening and Brief Intervention | Curriculum |
| 16th Search | Screening and Brief Intervention | Program Evaluation |
| 17th Search | Screening and Brief Intervention | Clerkship |
| 18th Search | Screening and Brief Intervention | Residency |
| 19th Search | Screening and Brief Intervention | Internship |
| 20th Search | Screening and Brief Intervention | Fellowship |
| 21st Search | Screening and Brief Intervention | Workshop |
| 22nd Search | Screening and Brief Intervention | Implementation |
| 23rd Search | Screening and Brief Intervention | Dissemination |
| 24th Search | Screening and Brief Intervention | Student |
| 25th Search | Screening, Brief Intervention, and Referral to Treatment | Training |
| 26th Search | Screening, Brief Intervention, and Referral to Treatment | Education |
| 27th Search | Screening, Brief Intervention, and Referral to Treatment | Curriculum |
| 28th Search | Screening, Brief Intervention, and Referral to Treatment | Program Evaluation |
| 29th Search | Screening, Brief Intervention, and Referral to Treatment | Clerkship |
| 30th Search | Screening, Brief Intervention, and Referral to Treatment | Residency |
| 31st Search | Screening, Brief Intervention, and Referral to Treatment | Internship |
| 32nd Search | Screening, Brief Intervention, and Referral to Treatment | Fellowship |
| 33rd Search | Screening, Brief Intervention, and Referral to Treatment | Workshop |
| 34th Search | Screening, Brief Intervention, and Referral to Treatment | Implementation |
| 35th Search | Screening, Brief Intervention, and Referral to Treatment | Dissemination |
| 36th Search | Screening, Brief Intervention, and Referral to Treatment | Student |
| 37th Search | Brief Intervention | Training |
| 38th Search | Brief Intervention | Education |
| 39th Search | Brief Intervention | Curriculum |
| 40th Search | Brief Intervention | Program Evaluation |
| 41st Search | Brief Intervention | Clerkship |
| 42nd Search | Brief Intervention | Residency |
| 43rd Search  | Brief Intervention | Internship |
| 44th Search | Brief Intervention | Fellowship |
| 45th Search | Brief Intervention | Workshop |
| 46th Search | Brief Intervention | Implementation |
| 47th Search | Brief Intervention | Dissemination |
| 48th Search | Brief Intervention | Student |

**Supplemental Digital Appendix 2**

**Rubric for Assigning Study Design and Outcome Measurement Rigor Scores to Studies Included in a Cross-Discipline Systematic Review of Literature on SBIRT Curricular Intervention for Health Care Trainees, March 2021**

|  |
| --- |
| **STUDY DESIGN RIGOR (Using Maryland Scientific Methods Scale)** |
| **1** | **2** | **3** | **4** | **5** |
| Cross-sectional design; only measures outcomes at one time point | Uses a Pre-Post Design, but does not compare treated to untreated group | Pre-Post comparison of outcomes in treated group compared with non-randomized control | Quasi-random assignment; likely only difference in groups is the treatment | Explicit description of randomization of groups |
| **MEASUREMENT RIGOR (Using Kirkpatrick Hierarchy)** |
| **1** | **2** | **3** | **4** | **5** |
| Only measures participant reaction to curriculum | Measures pre/post learning | Has some measure of SBIRT and/or MI skills | Measures SBIRT and/or MI skills with a validated measure | Measures organizational impact (e.g., hospital, medical school, etc.) |

{Acquavita, 2019 #357;Agley, 2014 #375;Agley, 2014 #449;Agley, 2016 #403;Arends, 2020 #349;Aurora, 2019 #443;Bernstein, 2007 #452;Boyle, 2019 #444;Braxter, 2014 #421;Bray, 2014 #442;Bray, 2012 #447;Bremner, 2020 #482;Burmester, 2019 #377;Calleja, 2020 #348;Carlson, 2017 #365;Carlson, 2017 #364;Clauser, 2020 #347;Clemence, 2016 #419;Clemence, 2016 #398;Cole, 2012 #395;Collin, 2019 #457;Cook, 2018 #392;Covington, 2018 #453;Crisafio, 2018 #379;Curtis, 2019 #400;de Barros Junqueira, 2015 #380;Ellington, 2019 #393;Fioravanti, 2018 #440;Fleming, 2009 #378;Giudice, 2015 #397;Habib, 2019 #446;Hettema, 2009 #411;Hettema, 2012 #371;Hitchcock, 2019 #424;Kalu, 2016 #402;Kane, 2014 #361;Kelly, 2018 #367;Kidd, 2020 #353;Knopf-Amelung, 2018 #445;Kobayashi, 2019 #356;Koetting, 2017 #366;Koyi, 2018 #416;Kuzma, 2018 #396;Mahmoud, 2018 #441;Malone, 2015 #430;Marshall, 2012 #432;Martin, 2020 #458;Mello, 2019 #374;Mitchell, 2013 #384;Mitchell, 2018 #358;Mitchell, 2017 #426;Mitchell, 2017 #359;Monteiro, 2017 #414;Moore, 2017 #394;Muench, 2012 #387;Munoz, 2019 #388;Munoz, 2019 #370;Neander, 2018 #415;Neft, 2018 #459;Neufeld, 2012 #373;O'Brien, 2019 #376;O'Sullivan, 2018 #454;Odusola, 2020 #345;Odusola, 2021 #354;Osborne, 2012 #408;Osborne, 2016 #391;Pringle, 2017 #369;Puskar, 2013 #438;Putney, 2019 #410;Putney, 2017 #404;Rawlings, 2019 #417;Rule, 2015 #383;Ryan, 2018 #405;Ryan, 2012 #433;Sacco, 2017 #425;Satterfield, 2012 #385;Scaramucci, 2020 #350;Schram, 2015 #399;Scudder, 2021 #460;Seale, 2015 #372;Seigart, 2018 #363;Senreich, 2017 #407;Senreich, 2017 #455;Sherwood, 2019 #418;Smith, 2018 #390;Tanner, 2012 #413;Tetrault, 2012 #368;Ting, 2021 #461;Todd, 2020 #346;van Eeghen, 2019 #451;Wamsley, 2013 #427;Wamsley, 2013 #389;Wamsley, 2016 #429;Washburn, 2021 #351;Whittle, 2015 #423}

**Supplementary Digital Appendix 3**

**Summary of Articles Included in a Cross-Discipline Systematic Review of Literature on SBIRT Curricular Interventions for Health Care Trainees (n = 95)**

| **Study** | **Measure-ment rigor score** | **Design rigor score** | **Types of trainees** | **SBIRT training methods** | **MI training methods** | **Coaching and feedback** | **Fidelity measures** | **Trainer credentials** | **Outcome measures** | **Skill benchmark** | **Other studies connected to sample** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acquavita et al., 2019 | 2 | 4 | Medical students, social work, pharmacy, nursing | Computer-based didactic, computer-based simulation, videos, reading materials, classroom-based didactic, experiential practice, observed practice with real patients, observed practice with standardized patient, feedback from standardized patient | Computer-based didactic, classroom-based didactic | Yes | SBIRT  | None reported | Training satisfaction, SBIRT knowledge, MI knowledge, SBIRT self-confidence, SBIRT skill | No | N/A |
| Agley et al., 2014a | 1 | 1 | Residents | None reported | None reported | No | None | None reported | SBIRT implementation (completed encounters), implementation barriers | No | Agley et al., 2014b |
| Agley et al., 2014b | 2.5 | 1 | Residents | Classroom-based didactic, experiential practice | Classroom-based didactic, experiential practice | No | None | Profession, level of education, SBIRT/MI qualifications | Training satisfaction, SBIRT self-confidence | No | Agley et al., 2014a |
| Agley et al., 2016 | 1 | 1 | Nursing | Computer-based didactic, classroom-based didactic, experiential practice | Computer-based didactic, classroom-based didactic, experiential practice | No | None | None reported | Training, satisfaction, SBIRT self-confidence, SBIRT implementation (chart review), skepticism of behavioral health care, time utilization and compensations | No | N/A |
| Arends et al., 2020 | 2 | 2 | Nursing | Computer-based didactic, classroom-based didactic, experiential practice | Computer-based didactic, classroom-based didactic, experiential practice | No | None | None reported | Training satisfaction, SBIRT knowledge, SBIRT self-confidence, SBIRT implementation (self-report), attitudes toward substance use | No | N/A |
| Aurora et al., 2019 | 1 | 1 | Medical students, social work, pharmacy, nursing | Classroom-based didactic, experiential practice, observed practice with real patients, observed practice with standardized patient, feedback-based coaching | None reported | No | None | None reported | SBIRT implementation (number screened and interviewed) | No | Monteiro et al., 2017 |
| Bernstein et al., 2007 | 2 | 1 | Residents | Computer-based didactic, videos, reading materials, classroom-based didactic, experiential practice | Videos, experiential practice | No | None | None reported | SBIRT self-confidence, SBIRT implementation (self-report), responsibility to do SBIRT, perceived implementation barriers  | No | N/A |
| Boyle & Pham, 2019 | 1 | 3 | Social work | Computer-based simulation, videos, classroom-based didactic, observed practice with real patients | Videos, classroom-based didactic, experiential practice, observed practice with real patients | No | SBIRT  | None reported | SBIRT skill | No | N/A |
| Braxter et al., 2014 | 1 | 1 | Nursing | Classroom-based didactic, experiential practice, feedback-based coaching | None reported | No | None | None reported | Perception of SBIRT | No | Kane et al., 2014; Mitchell et al., 2013; Puskar et al., 2013  |
| Bray et al., 2014 | 2 | 5 | Residents | Videos, classroom-based didactic, experiential practice | Videos, classroom-based didactic, experiential practice | Yes | SBIRT, MI | None reported | Training satisfaction, SBIRT self-confidence, SBIRT skill, MI skill, SBIRT implementation (self-report) | Yes | N/A |
| Bray et al., 2012 | 2 | 1 | Residents | Videos, classroom-based didactic, experiential practice | Videos, classroom-based didactic, experiential practice | No | None | None reported | Training satisfaction | No | N/A |
| Bremner et al., 2020 | 2 | 2 | Nursing | Computer-based didactic, computer-based Simulation, videos, classroom-based didactic, observed practice with standardized patient | Discussion prior to standardized patient simulation | No | None | None reported | Training satisfaction, SBIRT knowledge, substance use knowledge, SBIRT self-confidence | No | N/A |
| Burmester et al., 2019 | 2 | 4 | Nursing | Computer-based didactic, computer-based simulation | Computer-based didactic, computer-based simulation | No | SBIRT, MI | None reported | Training satisfaction, SBIRT self-confidence, SBIRT skill | Yes | N/A |
| Calleja et al., 2020 | 2 | 1 | Psychology, nursing, dental, physician assistant | Videos, reading materials, classroom-based didactic, experiential practice | Videos, Reading Materials, classroom-based didactic, experiential practice | No | None | None reported | Attitudes toward substance use | No | N/A |
| Carlson et al., 2017a | 2 | 1 | Social work | Computer-based didactic, classroom-based didactic, experiential practice | Experiential practice | No | None | None reported | SBIRT self-confidence | No | N/A |
| Carlson et al., 2017b | 2 | 1 | Medical students, social work, nursing | Computer-based didactic | Classroom-based didactic, experiential practice | No | None | None reported | SBIRT self-confidence, skepticism of behavioral health care, time utilization and compensations | No | N/A |
| Clauser et al., 2020 | 1 | 1 | Medical students, social work, pharmacy, nursing, dietetics, occupational therapy, physician assistant | Videos, classroom-based didactic, experiential practice, nonobserved standardized patient practice | None reported | No | None | None reported | Training satisfaction | No | Kobayahsi et al., 2019 |
| Clemence et al., 2016a | 1 | 1 | Residents | None reported | None reported | No | None | None reported | Training satisfaction, SBIRT self-confidence, SBIRT implementation (self-report), perceived implementation barriers | No | Clemence et al., 2016b  |
| Clemence et al., 2016b | 2 | 2 | Residents | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | Videos, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | Yes | SBIRT  | Profession, level of education  | Training satisfaction, SBIRT knowledge, substance use knowledge | No | Clemence et al., 2016a |
| Cole et al., 2012 | 1 | 3 | Residents | Observed practice with standardized patient, feedback-based coaching | Observed practice with standardized patient, feedback-based coaching | Yes | SBIRT, MI | Profession, Level of Education  | Training satisfaction, SBIRT skill, MI skill | No | N/A |
| Collin et al., 2019 | 1 | 1 | Social work | Computer-based didactic, videos, classroom-based didactic, experiential practice | Computer-based didactic, videos | No | None | None reported | Training satisfaction, SBIRT self-confidence, SBIRT implementation (self-report), attitudes toward substance use | No | N/A |
| Cook et al., 2018 | 2 | 1.5 | Nursing | Computer-based didactic, videos, classroom-based didactic, experiential practice, observed practice with real patients | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with real patients | No | None | Profession  | Training satisfaction, SBIRT implementation (self-report), attitudes toward substance use | No | N/A |
| Covington et al., 2018 | 1 | 1 | Nursing | None reported | None reported | No | None | None reported | SBIRT implementation (chart review and self-report) | No | N/A |
| Crisafio et al., 2018 | 2.5 | 3 | Medical students | Videos, classroom-based didactic, observed practice with standardized patient | None reported | No | None | None reported | SBIRT knowledge, SBIRT skill | No | N/A |
| Curtis et al., 2019 | 1 | 1 | Nursing | Computer-based didactic, classroom-based didactic | None reported | No | None | None reported | Qualitative report on SBIRT beliefs/attitudes | No | N/A |
| de Barros Junqueira et al., 2015 | 5 | 2 | Nursing | Classroom-based didactic, experiential practice | Classroom-based didactic, experiential practice | No | None | Profession  | SBIRT knowledge, substance use knowledge, SBIRT self-confidence, SBIRT skill, SBIRT implementation, attitudes toward substance use | No | N/A |
| Ellington, 2019 | 1 | 3 | Nursing | Videos, reading materials, feedback-based coaching | Videos, reading materials | No | SBIRT, MI | None reported | SBIRT skill, MI skill | No | N/A |
| Fioravanti et al., 2018 | 2 | 1 | Nursing | Videos, classroom-based didactic, feedback-based coaching | None reported | No | None | None reported | Training satisfaction, cultural competency | No | N/A |
| Fleming et al., 2009  | 5 | 3 | Medical students, pharmacy, nursing | Computer-based didactic, computer-based simulation, reading materials | None reported | No | SBIRT  | None reported | SBIRT skill | No | N/A |
| Giudice et al., 2015 | 4 | 4 | Residents | Computer-based Simulation, videos, reading, materials, experiential practice, feedback-based coaching | None reported | No | None | Level of education  | SBIRT knowledge, SBIRT self-confidence, SBIRT skill, attitudes toward substance use | No | N/A |
| Habib et al., 2019  | 2 | 2 | Social work, psychology, nursing | Computer-based didactic, computer-based simulation, videos, classroom-based didactic, experiential practice | Computer-based simulation, experiential practice | No | None | None reported | SBIRT knowledge, substance use knowledge, SBIRT self-confidence | No | N/A |
| Hettema et al., 2009 | 2 | 1 | Residents | Classroom-based didactic, 15 minute MET session | None reported | No | None | None reported | SBIRT self-confidence, SBIRT implementation (self-report), barriers to implementation | No | N/A |
| Hettema et al., 2012 | 2 | 1 | Residents | Classroom-based didactic, experiential practice | Classroom-based didactic | No | None | None reported | SBIRT self-confidence, SBIRT implementation (self-report) | No | N/A |
| Hitchcock et al., 2019 | 2 | 1 | social work, nursing | Computer-based Simulation, classroom-based didactic | Computer-based simulation | Yes | None | None reported | SBIRT self-confidence, readiness to use SBIRT | No | N/A |
| Kalu et al., 2016 | 1 | 3 | Residents | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with real patients | Computer-based didactic, classroom-based didactic, experiential practice | No | None | None reported | SBIRT skill | Yes | N/A |
| Kane et al., 2014.  | 1 | 3 | Nursing | Classroom-based didactic, experiential practice, observed practice with real patients, observed practice with standardized patient, feedback-based coaching, small group discussions | Classroom-based didactic, experiential practice, observed practice with real patients, observed practice with standardized patient, feedback-based coaching, small group discussions | Yes | None | None reported | Training satisfaction, SBIRT skill | No | Braxter et al., 2014; Mitchell et al., 2013; Puskar et al., 2013 |
| Kelly et al., 2018 | 3 | 3 | Nursing | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | Classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | Yes | SBIRT, MI | None reported | Training satisfaction, SBIRT knowledge, SBIRT self-confidence, SBIRT skill, MI skill, attitudes toward substance use | No | N/A |
| Kidd et al., 2020 | 2 | 1 | Medical students | Reading materials, classroom-based didactic, observed practice with standardized patient | None reported | No | None | None reported | Attitudes toward substance use in health care | No | N/A |
| Knopf-Amelung et al., 2018 | 3 | 3 | Nursing | Computer-based didactic, videos, reading materials, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | None reported | Yes | SBIRT, MI | None reported | Training satisfaction, SBIRT knowledge, MI knowledge, SBIRT self-confidence, SBIRT skill, MI skill, attitudes toward substance use | No | N/A |
| Kobayashi et al., 2019 | 1 | 1 | Medical students, social work, pharmacy, nursing, occupational therapy, physician assistant, dietetics | Computer-based didactic, videos, classroom-based didactic, experiential practice, observed practice with standardized patient | None reported | Yes | None | None reported | Training satisfaction, perception of SBIRT | No | Clauser et al., 2020 |
| Koetting & Freed, 2017 | 2 | 2 | Nursing | Computer-based didactic, computer-based simulation, classroom-based didactic, feedback-based coaching | Computer-based didactic, computer-based simulation | Yes | SBIRT, MI | None reported | Substance use knowledge, SBIRT self-confidence | No | N/A |
| Koyi et al., 2018 | 2 | 1 | Medical students | Classroom-based didactic, experiential practice, observed practice with standardized patient | Classroom-based didactic, experiential practice, observed practice with standardized patient | No | None | None reported | Attitudes toward substance use | No | N/A |
| Kuzma et al., 2018 | 2 | 3 | Nursing | Computer-based didactic, reading materials, classroom-based didactic, experiential practice | Computer-based simulation | Yes | SBIRT, MI | None reported | Training satisfaction, SBIRT self-confidence, SBIRT skill, MI skill | Yes | N/A |
| Mahmoud et al., 2018 | 2 | 1 | Nursing | Classroom-based didactic, SBIRT practice with real patients (supervision unspecified) | None reported | No | None | None reported | Attitudes toward substance use | No | N/A |
| Malone et al., 2015 | 2 | 2 | Residents | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with real patients, feedback-based coaching | Classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | Yes | None | None reported | Training satisfaction, SBIRT knowledge, substance use knowledge, SBIRT self-confidence, SBIRT implementation (self-report), attitudes toward substance use and SBIRT | No | N/A |
| Marshall et al., 2012 | 2 | 1 | Residents, fellows | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with standardized patient, nonobserved practice with real patients | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with standardized patient, nonobserved practice with real patients | Yes | None | None reported | SBIRT self-confidence, attitudes toward substance use, readiness to use SBIRT | No | N/A |
| Martin et al., 2020 | 2 | 2 | Psychology | Computer-based didactic, videos, classroom-based didactic, experiential practice, feedback-based coaching, observed practice with peers | Computer-based didactic, videos, classroom-based didactic, experiential practice, feedback-based coaching, observed practice with peers | Yes | None | Profession, level of education, SBIRT/MI qualifications | Training satisfaction, SBIRT knowledge, substance use knowledge, MI knowledge, SBIRT self-confidence, SBIRT implementation (self-report) | No | N/A |
| Mello et al., 2019 | 1 | 1 | Medical students, residents, physician assistant | Computer-based didactic, videos, classroom-based didactic, experiential practice, feedback-based coaching | None reported | Yes | None | None reported | Training satisfaction, SBIRT self-confidence, SBIRT implementation (self-report) | No | N/A |
| Mitchell, 2017 | 2 | 3 | Dental hygiene | Classroom-based didactic, observed practice with standardized patient | None reported | No | None | None reported | SBIRT skill, attitudes toward substance use | No | N/A |
| Mitchell et al., 2013 | 2 | 3 | Nursing | Classroom-based didactic, experiential practice, observed practice with real patients, observed practice with standardized patient, feedback-based coaching | None reported | Yes | None | None reported | Training satisfaction, SBIRT self-confidence, SBIRT skill | No | Braxter et al., 2014; Kane et al., 2014; Puskar et al., 2013 |
| Mitchell et al., 2018 | 2 | 1 | Dental hygiene | Classroom-based didactic, Non-observed standardized patient practice | Nonobserved standardized patient practice | Yes | None | None reported | Training satisfaction, SBIRT self-confidence | No | N/A |
| Mitchell et al., 2017 | 2 | 1 | Residents | Classroom-based didactic, observed practice with standardized patient, nonobserved practice with real patients | Classroom-based didactic, observed practice with standardized patient, nonobserved practice with real patients | No | None | None reported | SBIRT self-confidence | No | N/A |
| Monteiro et al., 2017 | 2 | 2 | Medical students, social work, pharmacy, nursing, physical therapy | Classroom-based didactic, experiential practice, observed practice with standardized patient feedback-based coaching, group developed care plan | None reported | Yes | None | None reported | Training satisfaction, substance use knowledge | No | Aurora et al., 2019 |
| Moore et al., 2017 | 1 | 1 | Nursing | Computer-based didactic, videos, reading materials, classroom-based didactic, experiential practice, feedback-based coaching | Computer-based didactic, classroom-based didactic, experiential practice, feedback-based coaching | Yes | None | None reported | SBIRT implementation (clinical log) | No | N/A |
| Muench et al., 2012  | 2 | 2 | Residents | Videos, classroom-based didactic, experiential practice, nonobserved practice with real patients | Videos, classroom-based didactic, experiential practice, nonobserved practice with real patients | No | None | None reported | SBIRT knowledge, SBIRT self-confidence, SBIRT implementation (chart review) | No | N/A |
| Munoz et al., 2019a | 2 | 2 | Social work | Videos, Reading Materials, classroom-based didactic, experiential practice, observed practice with standardized patient | Videos, classroom-based didactic, experiential practice, observed practice with standardized patient | Yes | None | None reported | MI knowledge, attitudes toward substance use | No | Munoz et al., 2019b |
| Munoz et al., 2019b | 2 | 2 | Social work | Videos, reading materials, classroom-based didactic, experiential practice, observed practice with standardized patient | Videos, classroom-based didactic, experiential practice observed practice with standardized patient | Yes | None | None reported | MI knowledge, attitudes toward substance use | No | Munoz et al., 2019a  |
| Neander et al., 2018 | 1 | 1 | Residents, social work, psychology, nursing | Computer-based didactic, videos, classroom-based didactic, experiential practice, observed practice with standardized patient, review of simulation video | None reported | Yes | SBIRT  | None reported | Training satisfaction, SBIRT self-confidence | No | N/A |
| Neft et al., 2018 | 1 | 3 | Nursing, dental, dental hygiene | Classroom-based didactic, observed practice with standardized patient feedback-based coaching, student performance feedback | None reported | Yes | None | None reported | Training satisfaction, SBIRT skill | No | N/A |
| Neufeld et al., 2012 | 2 | 2 | Medical students | Classroom-based didactic, experiential practice, observed practice with standardized patient | Classroom-based didactic, experiential practice, observed practice with standardized patient | No | None | None reported | Training satisfaction, substance use knowledge, MI knowledge | No | N/A |
| O’Brien et al., 2019 | 5 | 1 | Psychology, nursing | Computer-based didactic, videos, classroom-based didactic, experiential practice | None reported | No | None | None reported | SBIRT self-confidence, attitudes toward SBIRT | No | N/A |
| O’Sullivan et al., 2018 | 1 | 1 | Residents | Classroom-based didactic, experiential practice, observed practice with standardized patient | Classroom-based didactic, experiential practice | Yes | None | None reported | Training satisfaction | No | N/A |
| Odusola et al., 2020 | 2 | 1 | Dental | Videos, classroom-based didactic, experiential practice | None reported | No | None | None reported | Attitudes toward substance use | No | Odusola et al., 2021 |
| Odusola et al., 2021 | 2 | 4 | Dental | Classroom-based didactic, experiential practice, observed practice with standardized patient, case-based discussion | Classroom-based didactic | Yes | SBIRT  | None reported | SBIRT skill | No | Odusola et al., 2020 |
| Osborne & Benner, 2012 | 2 | 1 | Social work | None reported | None reported | No | None | None reported | SBIRT self-confidence, attitudes toward SBIRT | No | N/A |
| Osborne et al., 2016 | 2 | 1 | Social work | Computer-based didactic, videos, classroom-based didactic, observed practice with standardized patient, feedback-based coaching | Computer-based didactic, videos, classroom-based didactic, observed practice with standardized patient, feedback-based coaching | Yes | None | None reported | Training satisfaction, SBIRT self-confidence, attitudes toward SBIRT | No | N/A |
| Pringle et al., 2017 | 2 | 2 | Residents | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with real patients, observed practice with standardized patient, feedback-based coaching | Classroom-based didactic, experiential practice, observed practice with real patients, observed practice with standardized patient, feedback-based coaching | Yes | SBIRT  | None reported | Training satisfaction, SBIRT knowledge, substance use knowledge, SBIRT self-confidence, attitudes toward substance use | No | N/A |
| Puskar et al., 2013 | 2 | 1 | Nursing | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with real patients, feedback-based coaching | None reported | Yes | None | None reported | SBIRT self-confidence, attitudes toward substance use | No | Braxter et al., 2014; Kane et al., 2014; Mitchell et al., 2013 |
| Putney et al., 2019 | 3 | 3 | Social work | Computer-based didactic, computer-based simulation, videos, reading materials, classroom-based didactic, experiential practice, feedback-based coaching | Computer-based didactic, computer-based simulation, videos, reading materials, classroom-based didactic, experiential practice | Yes | SBIRT, MI | None reported | SBIRT skill, MI skill | No | N/A |
| Putney et al., 2017 | 2 | 1 | Social work | Computer-based didactic, videos, classroom-based didactic, experiential practice | Computer-based didactic, videos, classroom-based didactic, experiential practice | No | None | Profession  | Training satisfaction, SBIRT self-confidence, attitudes toward SBIRT | No | N/A |
| Rawlings et al., 2019 | 2 | 1 | Social work | Computer-based didactic | None reported | No | None | None reported | SBIRT self-confidence, perceived importance of SBIRT | No | N/A |
| Rule & Samuel, 2015  | 1 | 1 | Residents | Classroom-based didactic, experiential practice, nonobserved practice with real patients | Classroom-based didactic, experiential practice, nonobserved practice with real patients | No | None | None reported | Training satisfaction | No | N/A |
| Ryan et al., 2012 | 2 | 4 | Residents | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | None reported | Yes | SBIRT  | None reported | Training satisfaction, SBIRT knowledge, substance use knowledge, SBIRT self-confidence, SBIRT skill, SBIRT implementation (self-report) | No | Ryan et al., 2018 |
| Ryan et al., 2018 | 2 | 4 | Residents | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | None reported | Yes | SBIRT  | None reported | training satisfaction, SBIRT knowledge, substance use knowledge, SBIRT self-confidence, SBIRT skill, SBIRT implementation (self-report) | No | Ryan et al., 2012 |
| Sacco et al., 2017 | 2 | 5 | Social work | Classroom-based didactic, experiential practice, observed practice with standardized patient | None reported | No | None | None reported | SBIRT knowledge, substance use knowledge, SBIRT self-confidence, SBIRT skill, SBIRT implementation (self-report) | No | N/A |
| Satterfield et al., 2012 | 2 | 3 | Residents | Videos, classroom-based didactic, experiential practice | Videos, classroom-based didactic, experiential practice | No | None | Profession, level of education  | Training satisfaction, SBIRT knowledge, SBIRT self-confidence, SBIRT skill | No | Wamsley et al., 2013b |
| Scaramucci et al., 2020 | 2 | 2 | Dental hygiene | Classroom-based didactic, experiential practice, clinic shadowing | None reported | No | None | None reported | Training satisfaction, SBIRT knowledge, SBIRT implementation (self-report) | No | N/A |
| Schram et al., 2015 | 2 | 2 | Residents | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with standardized patient, nonobserved practice with real patients | Computer-based didactic, classroom-based didactic, experiential practice, observed practice with standardized patient, nonobserved practice with real patients | Yes | None | None reported | Training satisfaction, SBIRT knowledge, MI knowledge, SBIRT self-confidence, SBIRT implementation (self and observer report) | No | N/A |
| Scudder et al. 2019 | 2 | 2 | Psychology, nursing, physician assistant, physical therapy, occupational therapy | Videos, classroom-based didactic, experiential practice, self-rated proficiency checklist from patient interaction | None reported | No | None | None reported | SBIRT knowledge, substance use knowledge, SBIRT self-confidence, attitudes toward substance use | No | N/A |
| Seale et al., 2015 | 1 | 1 | Residents | Videos, reading, materials, classroom-based didactic, experiential practice | Videos, reading materials, classroom-based didactic, experiential practice | No | None | None reported | SBIRT implementation (chart review) | No | N/A |
| Seigart et al., 2018 | 1 | 1 | Nursing | Computer-based simulation, classroom-based didactic, experiential practice, observed practice with real patients, observed practice with standardized patient, nonobserved practice with real patients | Computer-based Simulation, classroom-based didactic, experiential practice, observed practice with real patients, observed practice with standardized patient, nonobserved practice with real patients | Yes | SBIRT, MI | None reported | Training satisfaction | No | N/A |
| Senreich et al., 2017a | 2 | 2 | Social work | Videos, classroom-based didactic, experiential practice | Classroom-based didactic, experiential practice | No | None | Profession  | Training satisfaction, SBIRT knowledge, substance use knowledge, MI knowledge, SBIRT self-confidence, SBIRT implementation (self-report), attitudes toward substance use, perceived effectiveness of SBIRT | No | Senreich et al., 2017b |
| Senreich et al., 2017b | 1 | 1 | Social work | Videos, classroom-based didactic, experiential practice | Classroom-based didactic, experiential practice | No | None | Profession  | SBIRT implementation (self-report) | No | Senreich et al., 2017a |
| Sherwood et al., 2019 | 1 | 1 | Medical students, social work, pharmacy, nursing, dental, dental hygiene, physical therapy, occupational therapy, physician assistant | Videos, classroom-based didactic, experiential practice, observed practice with standardized patient, case-based simulation | None reported | No | None | None reported | Training satisfaction | No | N/A |
| Smith et al., 2018 | 2 | 3 | Social work | Videos, reading materials, classroom-based didactic, experiential practice, feedback-based coaching | Videos, classroom-based didactic, experiential practice, feedback-based coaching, training to code MI sessions | Yes | SBIRT  | None reported | SBIRT skill | No | N/A |
| Tanner et al., 2012 | 2 | 2 | Medical students, nursing | Computer-based didactic, computer-based simulation, nonobserved standardized patient practice | None reported | No | None | None reported | Training satisfaction, SBIRT knowledge, SBIRT self-confidence | No | N/A |
| Tetrault et al., 2012 | 1 | 1 | Residents | Videos, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | None reported | Yes | None | None reported | Training satisfaction, SBIRT implementation (self-report) | No | N/A |
| Ting et al., 2019 | 1 | 1 | Social work | Computer-based didactic, videos, classroom-based didactic, experiential practice | Computer-based didactic, videos classroom-based didactic, experiential practice | No | None | None reported | SBIRT implementation (self-report) | No | N/A |
| Todd, 2020 | 2 | 1 | Social work, nursing, physician assistant | None reported | None reported | No | None | None reported | SBIRT self-confidence, likelihood to use SBIRT, skepticism of behavioral health care, time utilization, role legitimacy | No | N/A |
| van Eeghen et al., 2019 | 2 | 2 | Residents, social work, psychology, nursing | Computer-based didactic, videos, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | Videos, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching | Yes | None | SBIRT/MI qualifications | Training satisfaction, SBIRT knowledge, substance use knowledge, SBIRT self-confidence, attitudes toward substance use | No | N/A |
| Wamsley et al., 2013a | 3 | 3 | Residents | Computer-based didactic, videos, reading materials, classroom-based didactic, experiential practice, observed practice with standardized patient, feedback-based coaching, group readiness assurance test | None reported | Yes | None | None reported | Training satisfaction, SBIRT self-confidence, SBIRT skill | No | N/A |
| Wamsley et al., 2013b | 2 | 1 | Residents | Observed practice with standardized patient, feedback-based coaching | None reported | Yes | SBIRT  | None reported | Training satisfaction, SBIRT self-confidence | No | Satterfield et al., 2012 |
| Wamsley et al., 2016 | 1 | 1 | Residents | Classroom-based didactic, experiential practice, nonobserved practice with real patients | Videos, classroom-based didactic, experiential practice, feedback-based coaching, nonobserved practice with real patients | Yes | None | None reported | SBIRT implementation (chart review) | No | N/A |
| Washburn et al., 2021 | 1 | 1 | Social work | Computer-based didactic, classroom-based didactic, observed practice with standardized patient | None reported | No | None | Profession  | Training satisfaction, SBIRT self-confidence | No | N/A |
| Whittle et al., 2015 | 1 | 1 | Residents | Computer-based didactic, videos, Reading Materials, classroom-based didactic, experiential practice, observed practice with real patients, feedback-based coaching | Computer-based didactic, videos, classroom-based didactic, experiential practice, observed practice with real patients, feedback-based coaching, self-reflection of MI use | Yes | SBIRT, MI | None reported | Training satisfaction, SBIRT self-confidence | No | N/A |

Abbreviations: SBIRT, Screening, Brief Intervention, and Referral to Treatment; MI, motivational interviewing