# **Supplementary file 1**

**PubMed database search string:**

Search: **("Breast Neoplasms"[Mesh]) AND (Employment[Mesh] OR "Job Satisfaction"[Mesh] OR "Work Engagement"[Mesh] OR "work performance") AND (rehabilitation OR "occupational therapy" OR "occupational therapist")**

("Breast Neoplasms"[MeSH Terms] AND ((("employment"[MeSH Terms] OR "Job Satisfaction"[MeSH Terms]) OR "Work Engagement"[MeSH Terms]) OR "work performance"[All Fields])) AND (((((((((((((((("rehabilitant"[All Fields] OR "rehabilitants"[All Fields]) OR "rehabilitate"[All Fields]) OR "rehabilitated"[All Fields]) OR "rehabilitates"[All Fields]) OR "rehabilitating"[All Fields]) OR "rehabilitation"[MeSH Terms]) OR "rehabilitation"[All Fields]) OR "rehabilitations"[All Fields]) OR "rehabilitative"[All Fields]) OR "rehabilitation"[MeSH Subheading]) OR "rehabilitation s"[All Fields]) OR "rehabilitational"[All Fields]) OR "rehabilitator"[All Fields]) OR "rehabilitators"[All Fields]) OR "occupational therapy"[All Fields]) OR "occupational therapist"[All Fields])

**Translations**

**Employment[Mesh]:** "employment"[MeSH Terms]

**rehabilitation:** "rehabilitant"[All Fields] OR "rehabilitant's"[All Fields] OR "rehabilitants"[All Fields] OR "rehabilitate"[All Fields] OR "rehabilitated"[All Fields] OR "rehabilitates"[All Fields] OR "rehabilitating"[All Fields] OR "rehabilitation"[MeSH Terms] OR "rehabilitation"[All Fields] OR "rehabilitations"[All Fields] OR "rehabilitative"[All Fields] OR "rehabilitation"[Subheading] OR "rehabilitation's"[All Fields] OR "rehabilitational"[All Fields] OR "rehabilitator"[All Fields] OR "rehabilitators"[All Fields]

# **Supplementary file** **2**

| **Study Characteristics** | | | | |
| --- | --- | --- | --- | --- |
| **Author/Year**  **Reference** | **Country of study origin** | **Study aim** | **Study design/Study alignment** | **Risk of Bias**  **(if applicable)** |
| **Body Structures and Functions** | | | | |
| **Winick**  **(1977)** | USA | To describe the outcomes of a program aimed to assist patients to regain the functional use of their affected upper limb, and to adapt functionally, psychologically, and emotionally to the breast loss in the shortest period of time. | Longitudinal prospective one-group design study | Moderate |
| **Maguire (1983)** | UK | To establish if a specialist nurse helped patients to adapt to breast loss as well as improve their physical and social recovery after undergoing a mastectomy. | Randomised Controlled Trial (RCT) | Moderate |
| **Sachs**  **(1980)** | USA | To describe: the need for, operation, and outcomes of an in-patient post-mastectomy rehabilitation programme implemented at a community hospital. | Individual prospective cohort study | Moderate |
| **Groeneveld (2013)** | Netherlands | To explore cancer survivors experiences with RTW and work performance, a physical exercise programme after treatment, and the perceived relationship between exercise and work. | Qualitative study following a phenomenological approach | Not applicable |
| **Ibrahim (2017)** | Canada | To determine the effectiveness of a 12-week post-radiation exercise program focused on minimising upper limb impairments in young adults with breast cancer. | Pilot RCT | Moderate |
| **Multicomponents (Body Structures and Functions, and Activities)** | | | | |
| **Berglund (1993)** | Sweden | To assess the effects of a post-treatment rehabilitation program (Starting Again) for cancer patients. | Non- RCT | Moderate |
| **Berglund (1994)** | Sweden | To evaluate the impact of a short-structured rehabilitation program for cancer patients compared to no intervention. | RCT | Moderate |
| **Rogers**  **(2009)** | USA | To report the feasibility and preliminary outcomes of a pilot randomised trial design to improve the physical activity in sedentary breast cancer survivors on hormone therapy. | Pilot RCT | Moderate |
| **Björneklett (2013)** | Sweden | To determine, in economic terms, the effect of support group intervention on sick leave and health care use. | RCT | Moderate |
| **Leensen**  **(2017)** | Netherlands | To investigate the RTW rates of cancer patients and to assess the changes in work-related quality of life and physical outcomes. | Longitudinal prospective one-group design study | Low |
| **Activities** | | | | |
| **Hubbard (2013)** | UK | To determine the feasibility and acceptability of a vocational rehabilitation programme for breast cancer survivors to inform a larger interventional study. | Feasibility study incorporating an RCT | Low |

| **Study findings** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Author/Year**  **Reference** | **Participants**  **Inclusion criteria**  **Pre-diagnosis work status**  **Study setting** | **Intervention and Control Groups**  **(where applicable)** | **Outcome Measures** | **Relevant Findings** |
| **Level of evidence – I** | | | | | |
| **Maguire**  **(1983)** | **Participants:** N= 152 women with a modified radical mastectomy and full axillary clearance (N=75 in intervention group (I) ; N=77 in control group (II)).  **Inclusion criteria:** Women admitted for mastectomy during a 24-mon. period, were assigned to I or II group dependent on wk. of admission (‘counselling wk.’ or ‘control wk.’).  **Pre-ds work status:** I-group: N= 42; II-group: N= 46  **Study setting:** Hospital setting | **Intervention:**  Physical exercises to restore UL function. Counselling sessions to assist BC survivors to adapt to breast loss. Information on prostheses. Home visit after D/C to follow-up on adherence to exercise programme. Women were encouraged to talk to their partners about how the ds and surgery affected them as well as to RTW and socialise again. No theoretical base for intervention programme was documented.  **Health care provider:** Specialist nurse  **Control:** Care normally given by surgical unit. | Semi-structured interview to rate: reaction to scar, breast loss and prosthesis, activities, work performance, social functioning, and marital adjustment. Circumference measurements of arms and ROM assessment. | 76 % of I-group compared to 54 % of II-group RTW in 12-18-mos. 24 % of I-group and 46 % of II-group failed to RTW for the following reasons: moderate to severe arm problems (I: 50% and II: 57%); persistent psychiatric problems (I: 0 % and II: 43%); adverse Tx effects (I: 50% and II: 28%); inability to adapt to breast loss (I: 10% and II: 24%); decision to reprioritise life by giving up work for family time (I: 30% and II: 28%). |
| **Berglund**  **(1994)** | **Participants:** N= 199 (*M-*age 52.5 in I-group and 53.9 in II-group); (­­­­­­­­ 3.5 % male and 96.5 % female participants of which the majority were BC survivors)  **Inclusion criteria:** Patients who received curative Tx for a primary tumour, age < 75 years, and started group Tx within 2-mos after finishing post-operative Tx.  **Pre-ds work status:** I-group: N= 83; II-group: N= 60  **Study setting:** Karolinska Hospital. | **Intervention:** A 7-wk.programme consisting of 11 structured 2-h. group therapy sessions. First 4 wks. comprised of 2-sessions p/w.: one physical training and one information session. Last 3 wks. consisted of one coping skills training sessions p/w, presented by a psychologist, focused on role playing of RTW, anxiety management, and dealing with problem situations. No theoretical base for intervention programme noted.  **Health care providers:** Oncology nurse, oncologist**,** physical trainer, psychologist, dietician, and psychologist.  **Control:** 64% of participantsdid not receive intervention. 36 % of participants received one information session. | Background information QRE; Self-report on work, sick leave, patient organization membership; self-rated QRE on physical strength and activity; patient appraisal of information received; HADS scale (modified); 2-global items on QoL; 11-items on staff communication; 16-items on home and community activities; 20-items on BC symptoms; The Mental Adjustment to Cancer Scale | 72 % of I-group and 63% of II-group did not work at baseline. This decreased to 29 % and 25 % at the end of treatment and 3-mos. later to 23 % and 25 %, respectively. Difference between groups in **resumption of work** statistically insignificant.  **Sick leave** reduced from 72 to 20 d. and to 10% in the I-group and from 54 to 18 d. and to 17% in the II-group. No significant differences in sick leave between groups. |
| **Björneklett (2013)** | **Participants:** N= 382 (*M-*age 57.8 years)  **Inclusion criteria:** Women with primary BC and no previous malignancy, with the capacity to participate in group therapy and to fill in QRE. BC survivors with an expected survival time of more than 12-mos.  **Pre-ds work status:** All participants had paid employment at study baseline.  **Study setting:** Foundation of Lustgården Mälardalen (resort). | **Intervention:** The programme run from Sun. to Sa., and incl.: educational sessions on cancer; physical exercise; relaxation training; mental visualization; non-verbal communication (art therapy); and social activities. Two mos. later an intervention follow-up programme run over 4-days. Method of Grahn was used as theory base.  **Health care providers:** Oncologists, social workers, art therapists, masseuses, qigong trainer, and person trained in mental visualization  **Control:** Participants attended standard follow-up routines. | Patients answered a self-formulated QRE incl. background information, and open questions about occupation, sick leave, and health care utilisation, at baseline, 2, 6, and 12 mos. | Of the employable participants at baseline, 71 in I-group and 65 in II-group were on sick leave. At 2, 6, and 12 mos. – 47 and 42, 38 and 29, 26 and 22 – were on sick leave. Statistically insignificant differences between groups. |
| **Level of evidence – II** | | | | | |
| **Sachs**  **(1980)** | **Participants:** Data of 172 patients treated at Memorial Sloan-Kettering Cancer Centre and 107 patients from Mt. Sinai Hospital.  **Inclusion criteria:** Patients undergoing modified radical mastectomies and who responded to the QRE.  **Pre-ds work status:** Not mentioned.  **Study setting:** A community hospital in Mt. Sinai Hospital Cleveland and Memorial Sloan-Kettering Cancer Centre. | **The same intervention programme was implemented at the two hospitals:** Inpatient post-mastectomy rehabilitation group programme (PMRG). A 90 min. group p/d 5 days p/w. Groups focus on: UL physical exercises; information sharing (discussing feelings about surgery and physical difficulties); teaching and demonstration of selfcare (incl. wound care). No theoretical base for intervention programme noted.  **Health care providers:** Physical therapist, nurse, social worker, and reach-to-recovery volunteer. | Follow-up self-reported QRE 90 d. after discharge, incl.: ROM; resumption of normal activities and RTW; and emotional stress. | 78% of Sloan-Kettering patients, previously employed, RTW at the 90-d. QRE within an average of 7.1 wks.  85% of Mt. Sinai patients, previously employed, RTW at the 90-d. QRE within an average of 5.9 wks. |
| **Berglund**  **(1993)** | **Participants:** N= 60 (*M-*age 53.2 in I and 54.2 in II group) ; (­­­­­­­­ 3.3% male and 96.7 % female participants of which 83.3 % were BC survivors).  **Inclusion criteria:** Patients who received curative Tx for a primary tumour, age < 75 yrs., and started group Tx within 2-mons. after finishing post-operative Tx.  **Pre-ds work status:** Not mentioned.  **Study setting:** Karolinska Hospital | **Intervention:** The same intervention programme was implemented by the same health care providers as described under -Berglund (1994).  **Control:** Control group was monitored | A self-developed QRE: background variables, work, sick leave, organisation membership, physical strength, activity, modified HADS scale, QoL, appraisal of information received, home and community activities. Physical symptoms and sequelae were assessed using a problem list developed for the study. | No significance between groups with respect to work (resumption of work and sick leave), at 6-and12-mos. |
| **Rogers**  **(2009)** | **Participants** N= 41 (*M-*age of 53 years)  **Inclusion criteria:** English female BC survivors, aged between 18 and 70 yrs., with a ds of stage I, II, or IIIA BC. Participants on hormonal therapy and expected to remain on hormonal therapy for the duration of the study. Participants with medical clearance for participation.  **Pre-ds work status:** Not mentioned.  **Study setting:** Not clearly stated. Sessions with exercise specialists were allocated on the basis of scheduling logistics. | **Intervention:** 12-wk. MDT physical activity behaviour change intervention (titled the BEAT cancer programme), based on the social cognitive theory. The programme aimed to gradually increase participants to 150 min of walking p/wk. Participants also attended 6 discussion group sessions on social support, exercise role models, and copings skills (journaling, stress- and time management, coping with exercise barriers, and behaviour modification). Participants individually attended 12 supervised exercise sessions and 3 counselling sessions. The intervention included a home programme.  **Health care providers:** Clinical psychologist and exercise specialist.  **Control:** Control group provided with written materials about physical activity. | Patient-rated health outcomes also reporting **sick leave days** in the past mo. RE-AIM to assess feasibility. 21-item programme evaluation form. GTIM Accelerometer. Godin Leisure-time Exercise QRE. Self-reported stage of motivational readiness for physical activity. Naughton Protocol for fitness assessment. Back/leg extensor and handgrip dynamometer. BMI. FACT self-reported scales. PSQI. WOMAC. Functional Comorbidity Index. 3-day diet record. | Outcomes measures taken at baseline and immediately post 12-week intervention. Nonsignificant difference in **sick leave days** from work between the groups. |
| **Hubbard**  **(2013)** | **Participants:** N= 18 (*M-*age 50.5 years) I-group: N= 7; II-group: N=11  **Inclusion criteria:** Women aged 18 to 65 yrs., in paid or self-employment, ds with invasive BC tumour or ductal carcinoma in situ, first treated with surgery.  **Pre-ds work status:** All participants were in paid employment or self-employed.  **Study setting:** Hospital setting | **Intervention:** Case management vocational rehabilitation service. Intervention adopts a biopsychosocial model and an MDT approach using case management to assess participants’ individual needs to provide support and services accordingly, such as referring participants to relevant health professionals namely physiotherapy, occupational therapy, occupational health nurse, occupational health doctor, counsellor, psychological therapy, and complementary therapy. Work-related issues (contacting the employer to discuss a RTW plan and changes in work demands and hours) were also done by the case manager to decrease the period of absenteeism and increase work performance upon RTW. No theoretical base for intervention programme noted.  **Health care provider:** vocational rehabilitation case managers  **Control:** Usual post-operative care with no formal employment support.  Both groups received a booklet, titled Work and Cancer, by Macmillian Cancer Support. | Semi-structured interviews to assess trial feasibility & acceptability, at 6-mos. follow-up with participants & health care providers.  **Primary outcome**: Self-reported postal QRE on sick leave days every 4-wks. during the first 6-mos. post-operatively and at 12-mos. Self-report postal QRE were used at baseline, 6-and 12 mos. follow-up to assess **secondary outcomes**: FACT-fatigue, health-related QoL (FACT-B), changes in patterns of employment (non-validated QRE). | 53 fewer sick leave days were reported by I-group over the first 6-mos post-surgery compared to II-group, which was not statistically significant, but a substantial difference.  At 12 mos. follow-up, the I-group reported 2 days fewer sick leave compared to II-group, which is not statistically significant. |
| **Ibrahim (2017)** | **Participants:** N= 59 ( *M-*age 39.2 years), I-group: N=30; II-group: N=29  **Inclusion criteria:** Young women with a ds of stage I,II,II BC, between 18 and 45 yrs., scheduled to receive post-operative adjuvant Tx and have an Eastern Cooperative Oncology Group performance status.  **Pre-ds work status:** Pre-diagnosis working hours 38.9 h.  **Study setting:** Hope & Cope Wellness Centre for oncology patients. | **Intervention:** Intervention was implemented 3-4 wks. post-radiation. 12-wk. post-radiation individual exercise programme to limit UL dysfunction and pain. Participants unable to exercise at the centre, were given a home programme and the equipment needed. Participants were encouraged to perform programme 2-3 times p/wk. Programme incl.: 10-min. cardiovascular warm-up, upper body strength training, endurance programme, UL stretching, and a light cool down. Reference made to theory used for programme development.  **Health care provider:** Exercise physiologist.  **Control:** Standard care which incl. information on benefits of an active and healthy lifestyle. Participants were encouraged to maintain level of physical activity and/or sport participation. | Quantitative data collected at 6 time points (baseline/pre-radiation, as well as post-radiation and at 3,6,12, and 18 mos. follow-up.): DASH; MET-h/wk.; Post-hoc QRE on RTW | 86 % of participants (cohort) RTW (12-18 mos. post-radiation), with 89% returning to pre-ds work activities and responsibilities with a decrease of 8.5 h/wk., thus working 30.4 h/wk. |
| **Level III** | | | | | |
| **Winick**  **(1977)** | **Participants:** N= 863 (*M-*age 56.3 yrs.)  **Inclusion criteria:** Patients at Memorial Hospital who attended a post-mastectomy rehabilitation programme (1970 and 1974) from whom data could be collected. Participants’ data were categorised based on the type of mastectomy they underwent.  **Pre-ds work status:** N= 317 employed full time.  **Study setting:** Memorial Sloan-Kettering Cancer Centre. | **Intervention:** The same post-mastectomy rehabilitation programme was implemented as used in the Sachs study (discussed in this table).  **Health care providers:** physical therapist, nurse, social worker, and reach-to-recovery volunteer.  **Control:** No control group. | Follow-up 3-pg. **self-reported QRE** 90 d. after D/C, incl. the following: return to pre-operative levels of activity (incl. RTW); physical functioning (ROM on affected side); psychological functioning (using open ended questions). QRE were completed on average 16.8 wks. post-operatively. | 74 % returned to full time employment (237 of 317 full-time employed participants) within 3-mos. after mastectomy.  \***Simple mastectomy:**100 % of participants (N=2) RTW within 3 wks. on average.  **\*\*Modified radical mastectomy:** 78% of participants (N=50) RTW within 7.1 wks. on average.  **\*\*\*Radical mastectomy** :75% of participants (N=241) RTW within 8.5 wks. on average.  **\*\*\*\* Extended radical mastectomy** 63 % of participants (N=24) RTW within 9.5 wks. on average. |
| **Leensen**  **(2017)** | **Participants:** N=93 (*M* age 47.9 yrs., 83.9% of participants ds with BC)  **Inclusion criteria:** Primary ds of cancer, between 18 and 60 yrs., being treated with chemotherapy, and competent to complete a QRE in Dutch. Participants were on paid employment at the time of ds or on sick leave or planning to take sick leave prior to starting with treatment.  **Study setting:** Two hospitals in the Netherlands. | **Intervention:** MDT rehabilitation programme combining counselling on work-related issues with a supervised moderate to vigorous exercise programme. The intervention programme run twice weekly for one hour over a period of 12-wks. Exercises were individually graded for each participant as a percentage of their maximum workload. Besides the exercise programme participants underwent between 1-3 individual counselling sessions focused on discussing a transitional RTW plan considering the BC survivor’s work demands, work ability, medical situation, and opinion. Intervention programme was based on scientific literature and opinions of care providers in the field.  **Health care providers:** Oncology occupational physician, physiotherapist. | Data collected at baseline and 6,12- and 18-mos. follow-up. QRE on: RTW (any resumption of work); Importance of work (using VAS, with a higher score indicating higher importance); WAI;  RTW self-efficacy scale; WLQ; MFI, EORTC QOL-30; SQUASH | Participants RTW: 59% at 6-mos. after the start of the programme, 86% at 12 mos., and 83% at 18 mos. The importance of work, work ability, RTW self-efficacy, and QoL showed statistically significant improvements at 6,12-and-18 mos. |
| **Qualitative study** | | | | | |
| **Groeneveld**  **(2013)** | **Participants:** N= 10 (*M-*age 56 yrs.); (­­­90 % was female of which 70% was BC survivors)  **Inclusion criteria:** Treated with chemotherapy, employed at the time of ds, and completed a 12-wk posttreatment exercise programme.  **Study setting:** Medical Centre Haaglanden. | **Intervention received prior to the study:** 12-week group-based supervised physical exercise programme for 1-h twice p/wk. Consisting of interval and resistance training of moderate intensity. Interval training had 2-blocks of 08 min. on a cycle ergometer, and resistance training through weightlifting targeting large muscle groups. Programme was adapted from an evidence-based exercise programme.  **Health care provider:** Sports medicine physician.  **Control:** Not applicable. | Semi-structed individual interviews, scheduled for 45-60 min, which were audio-taped, transcribed, and coded. The following topics were discussed: RTW and work performance; physical exercise programme after treatment; perceived link between physical exercise and work | 8-participants RTW most within half a year after Tx, 5-participants reported insufficient RTW support from the occupational physician. Most of the participants enjoyed the programme. Perceived effects were: “improved fitness” and “renewed energy”. Participants voiced that by increasing energy levels through physical exercise, likely contributed to their ability to go back to work. Additionally, some reported that the physical exercise improved their work performance. Some participants said a supportive work environment, encouraged them to continue with physical exercise. |
| **Ds:** Diagnosis; **Tx:** Treatment; **D/C**: Discharge; **RCT:** Randomised Controlled Trial; **BC:** Breast Cancer; **RTW:** Return-to-work; **EORTC- QLOC-30** – European Organisation for Research and Treatment of Cancer; **QOL** – Quality of life; **VAS:** Visual analogue scale**; WLQ:** Work Limitations Questionnaire; **MFI:** Multidimensional Fatigue Inventory;  **SQUASH:** Short Questionnaire to Assess health enhancing physical activity; **WAI-** Work Ability Index; **DASH:** Disability of Arm, Shoulder, and Hand; **MET-h/wk.:** Metabolic Equivalent of Task-hour per week; **RE-AIM:** (Reach, Efficacy/effectiveness, Adoption, Implementation, and Maintenance); **BMI:** Body Mass Index; **FACT- B:** Functional Assessment of Cancer Therapy **– Breast; FACT- G:** Functional Assessment of Cancer Therapy **– General (including additional concerns); FACT-F:** Functional Assessment of Cancer Therapy **-** Fatigue**; FACT-Cog:** Functional Assessment of Cancer Therapy **-** Cognitive functioning**; FACT – ES**: Functional Assessment of Cancer Therapy **-** Endocrine Symptoms**; PSQI:** Pittsburgh Sleep Quality Index**; WOMAC:** McMaster Universities Osteoarthritis Index; **HADS:** Hospital Anxiety and Stress Scale; **MDT:** Multidisciplinary; **ROM:** Range of Motion; **I:** Intervention group; **II:** Control group; **UL:** Upper limb; \***Simple mastectomy:** only removal of breast; **\*\*Modified radical mastectomy:** removal of breast, lymph nodes, portion pectoral muscles; **\*\*\*Radical mastectomy:** removal of breast, axillary lymph nodes, pectoral muscles; **\*\*\*\* Extended radical mastectomy:** removal of tissue as indicated under radical mastectomy and medial chest wall overlying the internal mammary nodes. | | | | | |

# **Supplementary file 3**

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| **Table – Risk-of-Bias Table for Randomised Controlled Trails (RCT) and Non-RCT** | | | | | | | | | | | |
| Citation | Selection Bias (risk of bias arising from randomisation process) | | | Performance Bias (effect of assignment to intervention) | | Detection Bias | | Attrition Bias | Reporting Bias | Overall risk of bias assessment (low, moderate, high risk) |
| Random sequence generation | Allocation Concealment (until participants enrolled and assigned) | Baseline differences between intervention groups (suggest problem with randomisation?) | Blinding of participants during the trial | Blinding of study personnel during the trial | Blinding of outcome assessment: Self-reported outcomes | Blinding of outcome assessment: Objective outcome (assessors aware of intervention received?) | Incomplete outcome data (data for all or nearly for all participants) | Selective reporting (results being reported selected on the basis of the results?) |
| Maguire (1983) | + | - | + | - | - | - | - | + | + | **M** |
| Berglund (1993) | - | - | + | - | - | - | - | + | + | **M** |
| Berglund (1994) | + | + | + | - | - | - | - | + | + | **M** |
| Rogers (2009) | + | + | + | - | - | - | - | + | + | **M** |
| Björneklett (2012) | + | + | + | - | - | - | - | + | + | **M** |
| Hubbard (2013) | + | + | ? | - | + | - | + | - | + | **L** |
| Ibrahim (2017) | + | + | + | - | - | - | - | + | + | **M** |
| *Note.* Key = Categories for risk of bias are as follows: Low risk of bias (+), unclear risk of bias (?), high risk of bias (-). Scoring for overall risk-of-bias assessment is as follows: 0-3 minuses, low risk of bias (L); 4-6 minuses, moderate risk of bias (M); 7-9 minuses, high risk of bias (H). | | | | | | | | | | | |

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| **Table – Risk-of-Bias for Before-After (Pre-Post) Studies with no control-group** | | | | | | | | | | | | | |
| Citation | Study question or objective clear | Eligibility or selection criteria clearly described | Participants representative of real-world patients | All eligible participants enrolled | Sample size appropriate for confidence in findings | Intervention clearly described and delivered consistently | Outcome measures pre-specified, defined, valid/reliable, and assessed consistently | Assessors blinded to participant exposure to intervention | Loss to follow-up after baseline 20% or less | Statistical methods examine changes in outcome measures from before to after intervention | Outcome measures were collected multiple times before and after intervention | Overall risk of bias assessment (low, moderate, high risk) |
| Sachs (1980) | N | Y | Y | Y | N/R | Y | N | N | N/R | N | N | **M** |
| Leensen (2017) | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | **L** |
| Winick (1977) | N | Y | Y | N | Y | Y | N | N | NA | N/R | N | **M** |
| *Note.* Key = Y-yes; N= no; NR= not reported. Scoring for all overall risk of bias assessment is as follows: 0-3 N, Low risk of bias (L); 4-8 N, Moderate risk of bias (M); 9-11 N, High risk of bias (H). | | | | | | | | | | | | | |

# **Supplementary file 4**

**JBI Critical Appraisal Checklist for Qualitative Research**

**Date: 17 November 2020**

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| **Author/Year** | | **Groeneveld (2013)** | | | |
|  | **Checklist items** | **Yes** | **No** | **Unclear** | **NA** |
| 1. | Is there congruity between the stated philosophical perspective and the research methodology ? |  |  | **x** |  |
| 2. | Is there congruity between the research methodology and the research question or objectives? | **x** |  |  |  |
| 3. | Is there congruity between the research methodology and the methods used to collect data ? | **x** |  |  |  |
| 4. | Is there congruity between the research methodology and the representation and analysis of results ? | **x** |  |  |  |
| 5. | Is there congruity between the research methodology and the interpretation of results? | **x** |  |  |  |
| 6. | Is there a statement locating the researcher culturally or theoretically ? |  |  | **x** |  |
| 7. | Is the influence of the researcher on the research, and vice-versa, addressed ? | **x** |  |  |  |
| 8. | Are participants, and their voices, adequately represented ? |  |  | **x** |  |
| 9. | Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body? | **x** |  |  |  |
| 10. | Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data? | **x** |  |  |  |

**Overall appraisal: Include : YES Exclude: NA Seek further info: NA**

**Comments (including reasons for exclusion)**

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| None |