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| *Table. Risk of Bias Rationale* |
| First author, Year | Random Sequence Generation | Allocation concealment | Blinding of participants or personnel | Blinding of outcome assessor | Incomplete outcome data | Selective reporting | Any other sources of bias |
| Aycinena, 2017 | Low – the random sequence generation used randomly permuted blocks | Unclear – No description of the allocation concealment was provided | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Penttinen, 2009 | Low – the random sequence generation used a computer-generated randomization schedule | Low – randomization was centralized and stratified for the study center | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | High – participants were generally active, which may have constituted a “contamination” effect for the control group; there was also sub-optimal intervention adherence in the intervention group  |
| Eakin, 2011 | Low – the random sequence generation used a computer-generated unblocked sequence of random numbers | Low – the allocation was generated through a computer program | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Zhou, 2013 | Low – the random sequence generation used a randomization procedure stratified on prior chemotherapy status and physical activity level  | Unclear – the allocation concealment procedure was not sufficiently described to rate the risk of bias | High – blinding of participants not feasible in exercise or physical activity intervention | Low – the outcome assessors were described as being blinded to participant group allocation | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Irwin, 2008 | Low – the random sequence generation was performed using a random number generator | Low – group assignment was placed in a sealed envelope | High – blinding of participants not feasible in exercise or physical activity intervention | Low – the outcome assessors were described as being blinded to participant group allocation | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Loh, 2012 | High – authors mention the study was randomized but did not provide details pertaining to the random sequence generation | High – authors mention the study was randomized but did not provide details pertaining to allocation concealment | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | High – the study had extensive attrition (approximately 50%) | Unclear – only baseline data were available, so the extent of the risk of bias due to selective reporting was unclear | Unclear – only baseline data were available, so the extent of the risk of other sources of bias was unclear |
| Korde, 2009 | Low – the study used stratified randomization | Unclear – the allocation concealment procedure was not sufficiently described to rate the risk of bias | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | High – the study reported 26% attrition | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Fields, 2016 | Low – the random sequence generation used randomly permuted blocks to randomize participants | Low – randomizations were performed by an independent data manager to randomize participants | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | High – the intervention group experience 20% attrition while the control group experience 0% | Unclear – insufficient information was provided to determine whether all outcomes were reported | High – the authors mention that the outcome was likely biased by the control group receiving the physical activity booklet and exercise diary |
| Bennett, 2007 | Low – the random sequence generation used a computer generated randomization scheme | Low – group allocations were placed in sealed envelopes | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | High – physical activity was measured by self-report  |
| Kim, 2011 | Low – the random sequence generation used a random numbers table for random sequence generation | High – authors mention the study was randomized but did not provide details pertaining to allocation concealment | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Johnston, 2011 | Low – the random sequence generation used a 1:1 ratio, permuted block randomization with blocks of size four | Low – the study used a confidential randomization scheme that was maintained in a computer isolated from the study team | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | High – the study reported 17% attrition in the intervention and 0% in the control group, although 1 participant (14% of the control group) in the control group crossed-over to the intervention group  | Low – all specified outcomes appear to have been reported | High – the study reported 1 participant (8% of the total sample) crossed-over from the control group to the intervention group |
| Cadmus Bertram, 2011 | Low – the random sequence generation used a computer program to generate random sequences with an equal probability for each group | Low – the study provided the principal investigator who was not involved with recruitment or enrollment with the allocations  | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Unclear – only baseline data were available, so the extent of the risk of bias due to incomplete outcomes was unclear | Unclear – only baseline data were available, so the extent of the risk of bias due to selective reporting was unclear | Low – the study appeared to be at minimal risk due to other biases |
| Daley, 2007 | Low – the random sequence generation used stratified randomization | Low – the study used an independent clinical trial unit to allocate participants | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Stan, 2012 | High – single group study | High – single group study | High – blinding of participants not feasible in exercise or physical activity intervention | High – outcome assessors cannot be blinded in a single study design | Low – attrition appeared to be minimal; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Ott, 2006 | Unclear – the random sequence generation procedure was not sufficiently described to rate the risk of bias | Unclear – the allocation concealment procedure was not sufficiently described to rate the risk of bias | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Unclear – authors mention using an intent-to-treat design, although they were unclear about their overall attrition rates | Low – all specified outcomes appear to have been reported | High – authors mention a low adherence rate |
| McTiernan, 1998  | High – single group study | High – single group study | High – blinding of participants not feasible in exercise or physical activity intervention | High – outcome assessors cannot be blinded in a single study design | Low – attrition appeared to be minimal; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Rogerino, 2009 | Low – the random sequence generation used randomization through minimization that was stratified by lymphedema status and balanced on time since diagnosis | Low – the allocation sequence was concealed by the software program MINIM, which was used to randomly allocate participants | High – blinding of participants not feasible in exercise or physical activity intervention | Low – the outcome assessors were described as being blinded to participant group allocation | Unclear – authors mention using an intent-to-treat design, although they were unclear about their overall attrition rates | Low – authors appear to report all outcome measures across a series of related publications | Low – the study appeared to be at minimal risk due to other biases |
| Broderick, 2013 | Low – the random sequence generation used computer-generated random numbers list  | Low – the allocation sequence was concealed by the computer program generating the random numbers list | High – blinding of participants not feasible in exercise or physical activity intervention | Low – the outcome assessors were described as being blinded to participant group allocation | High – authors reported more than 20% dropout rate | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Hayes, 2010 | Low – the random sequence generation used a computer-generated unblocked sequence of random numbers  | Unclear – the allocation concealment procedure was not sufficiently described to rate the risk of bias | High – blinding of participants not feasible in exercise or physical activity intervention | Low – the outcome assessors were described as being blinded to participant group allocation | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Unclear – only baseline data were available, so the extent of the risk of bias was unclear  | Low – the study appeared to be at minimal risk due to other biases |
| Pinto, 2004 | Low – the random sequence generation used a process stratified on age, cancer stage, and medical treatment | Unclear – the allocation concealment procedure was not sufficiently described to rate the risk of bias | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Unclear – authors had a high rate of excluding potential participants; it is unclear how extensively this impacted generalizability |
| Westphal, 2018 | Low – the random sequence generation used permuted blocks with BMI stratification  | Unclear – the allocation concealment procedure was not sufficiently described to rate the risk of bias | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Al-Majid, 2015 | Unclear – the random sequence generation procedure was not sufficiently described to rate the risk of bias | Unclear – the allocation concealment procedure was not sufficiently described to rate the risk of bias | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Myers, 2019 | High – authors mention the study was randomized but did not provide details pertaining to the random sequence generation | High – authors mention the study was randomized but did not provide details pertaining to allocation concealment | High – blinding of participants not feasible in exercise or physical activity intervention | Low – study described as a single-blind study | High – Completers were statistically different than non-completers on baseline variables, the attrition rate does not appear to be uniform across groups | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Lynch, 2017 | High – single group study | High – single group study | High – blinding of participants not feasible in exercise or physical activity intervention | High – outcome assessors cannot be blinded in a single study design | High – Approximately half of the sample withdrew or was lost to follow-up over the course of the intervention | Low – all specified outcomes appear to have been reported | High – the study sample demographics limit generalizability, the lack of a control or comparison group limits causal inferences |
| Ammitzboll, 2017 | High – single group study | High – single group study | High – blinding of participants not feasible in exercise or physical activity intervention | High – outcome assessors cannot be blinded in a single study design | High – authors reported approximately 25% dropout rate | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Gollhofer, 2015 | Low – the random sequence generation used stratified random block assignment | Low – the randomization process was conducted by a biometrician unrelated to the project | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Porter, 2018 | Low – the random sequence generation used 1:1 randomization that was stratified by cancer type  | Low – the allocation was generated through a computer program  | High – blinding of participants not feasible in exercise or physical activity intervention | High – no mention of a blinded outcome assessor | Low – attrition appeared to be minimal and balanced across the two groups; missing data did not appear to be a significant factor | Low – all specified outcomes appear to have been reported | Low – the study appeared to be at minimal risk due to other biases |
| Hirschey, 2018 | Low – the random sequence generation used a random number generator to generate randomization sequences  | Low– the allocation was generated through a computer program | High – blinding of participants not feasible in exercise or physical activity intervention | Low – the outcome assessors were described as being blinded to participant group allocation | High – authors reported approximately 40% attrition | Low – all specified outcomes appear to have been reported | High – selection bias may have produced a sample that is not generalizable |