

## SUPPLEMENTARY MATERIALS

Index of the supplementary materials of the systematic review “**Post-operative education for patients after hip/knee arthroplasty: a systematic review with meta-analysis of randomised controlled trials.**”

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Data extraction form is available on Open Science Framework at this [link](#).

## APPENDIX A - Search Strategies

We reported the whole strategies used in the different databases.

### Medline

("Arthroplasty, Replacement, Hip"[Mesh] OR "Hip Prosthesis"[Mesh] OR "Knee Prosthesis"[Mesh] OR "Arthroplasty, Replacement, Knee"[Mesh] OR "knee\* arthroplasty"[tiab] OR "knee\* replacement"[tiab] OR "knee\* joint replacement"[tiab] OR "hip arthroplasty"[tiab] OR "hip replacement"[tiab] OR "hip joint replacement"[tiab] OR "hip hemiarthroplasty"[tiab]) AND ("Postoperative Period"[Mesh] OR "Postoperative Complications"[Mesh] OR "Postoperative Care"[Mesh] OR "Pain, Postoperative"[Mesh] OR postoperative[tiab] OR post-operative[tiab] OR "post operative"[tiab] OR post-surg\*[tiab] OR "post surg\*"[tiab] OR post-intervention[tiab] OR "post intervention"[tiab]) AND ("Education"[Mesh] OR "Patient Education Handout" [Publication Type] OR "Patient Education as Topic"[Mesh] OR "Patient Portals"[Mesh] OR "Health Education"[Mesh] OR "Health Educators"[Mesh] OR "Mobile Applications"[Mesh] OR "Smartphone"[Mesh] OR "Internet-Based Intervention"[Mesh] OR "Counseling"[Mesh] OR "Directive Counseling"[Mesh] OR "Distance Counseling"[Mesh] OR "Health Communication"[Mesh] OR education[tiab] OR "patient educat\*"[tiab] OR "education of patient\*"[tiab] OR "health education"[tiab] OR "patient information"[tiab] OR "patient counseling"[tiab] OR "patient teaching"[tiab] OR "patient portal\*"[tiab] OR "mobile application\*"[tiab] OR "mobile app"[tiab] OR "mobile apps"[tiab] OR "portable software application\*"[tiab] OR "smartphone app"[tiab] OR "smartphone apps"[tiab] OR "smartphone application\*"[tiab] OR "portable electronic apps"[tiab] OR "portable electronic application\*"[tiab] OR smartphone\*[tiab] OR "smart phone\*"[tiab] OR "internet based intervention\*"[tiab] OR "internet-based intervention\*"[tiab] OR "web based intervention\*"[tiab] OR "web-based intervention\*"[tiab] OR "online intervention\*"[tiab] OR "on-line intervention\*"[tiab] OR "internet intervention"[tiab] OR counseling[tiab] OR "directive counseling"[tiab] OR "distance counseling"[tiab] OR e-counseling[tiab] OR "health communication\*"[tiab] OR "health educator\*"[tiab]) AND ("Physical Therapy Modalities"[Mesh] OR "Rehabilitation"[Mesh] OR "Rehabilitation Nursing"[Mesh] OR "Rehabilitation Centers"[Mesh] OR "Hospitals, Rehabilitation"[Mesh] OR "Telerehabilitation"[Mesh] OR "Telemedicine"[Mesh] OR "Exercise Therapy"[Mesh] OR "Exercise"[Mesh] OR "Exercise Movement Techniques"[Mesh] OR "Exercise Tolerance"[Mesh] OR "Exercise Test"[Mesh] OR "Resistance Training"[Mesh] OR "Muscle Stretching Exercises"[Mesh] OR "Exergaming"[Mesh] OR "Video Games"[Mesh] OR "Virtual Reality"[Mesh] OR "Virtual Reality Exposure Therapy"[Mesh] OR physiotherap\*[tiab] OR "physical therap\*"[tiab] OR rehabilitat\*[tiab] OR telerehabilitat\*[tiab] OR telemedicine[tiab] OR telehealth[tiab] OR e-health[tiab] OR kinesiotherap\*[tiab] OR exercise\*[tiab] OR "resistance training"[tiab] OR "muscle\* stretching"[tiab] OR exergam\*[tiab] OR videogam\*[tiab] OR "video game\*"[tiab] OR "virtual reality"[tiab]) AND ("Randomized Controlled Trial" [Publication Type] OR "Randomized Controlled Trials as Topic"[Mesh] OR "randomized controlled trial\*"[tiab] OR "randomised controlled trial\*"[tiab])

## CENTRAL

("knee\* arthroplasty" OR "knee\* replacement" OR "knee\* joint replacement" OR "hip arthroplasty" OR "hip replacement" OR "hip joint replacement" OR "hip hemiarthroplasty") AND (postoperative OR post-operative OR "post operative" OR post-surg\* OR "post surg\*" OR post-intervention OR "post intervention") AND (education OR "patient educat\*" OR "education of patient\*" OR "health education" OR "health educator\*" OR "patient information" OR "patient counseling" OR "patient teaching" OR "patient portal\*" OR "mobile application\*" OR "mobile app" OR "mobile apps" OR "portable software application\*" OR "smartphone app" OR "smartphone apps" OR "smartphone application\*" OR "portable electronic apps" OR "portable electronic application\*" OR smartphone\* OR "smart phone\*" OR "internet based intervention\*" OR "internet-based intervention\*" OR "web based intervention\*" OR "web-based intervention\*" OR "online intervention\*" OR "on-line intervention\*" OR "internet intervention" OR counseling OR "directive counseling" OR "distance counseling" OR e-counseling OR "health communication\*") AND (physiotherap\* OR "physical therap\*" OR rehabilit\* OR telerehabilitat\* OR telemedicine OR telehealth OR e-health OR kinesiotherap\* OR exercise\* OR "resistance training" OR "muscle\* stretching" OR exergam\* OR videogam\* OR "video game\*" OR "virtual reality")

# CINAHL

S16	S3 AND S6 AND S9 AND S12 AND S15
S15	S13 OR S14
S14	TI ( ("randomized controlled trial*" OR "randomised controlled trial*") ) OR AB ( ("randomized controlled trial*" OR "randomised controlled trial*") )
S13	(MH "Randomized Controlled Trials+")
S12	S10 OR S11
S11	TI ( (physiotherap* OR "physical therap*" OR rehabilit* OR telerehabilitat* OR telemedicine OR telehealth OR e-health OR kinesiotherap* OR exercise* OR "resistance training" OR "muscle* stretching" OR exergam* OR videogam* OR "video game*" OR "virtual reality") ) OR AB ( (physiotherap* OR rehabilit* OR telerehabilitat* OR telemedicine OR telehealth OR e-health OR kinesiotherap* OR exercise* OR "resistance training" OR "muscle* stretching" OR exergam* OR videogam* OR "video game*" OR "virtual reality") )
S10	(MH "Physical Therapy+") OR (MH "Education, Physical Therapy") OR (MH "Physical Therapy Practice") OR (MH "Home Physical Therapy") OR (MH "Physical Therapy Service") OR (MH "Physical Therapists+") OR (MH "Rehabilitation+") OR (MH "Rehabilitation Centers+") OR (MH "Rehabilitation Patients") OR (MH "Home Rehabilitation+") OR (MH "Rehabilitation Nurses") OR (MH "Rehabilitation Counselors+") OR (MH "Rehabilitation Counseling") OR (MH "Rehabilitation Nursing") OR (MH "Telerehabilitation") OR (MH "Telemedicine+") OR (MH "Telehealth+") OR (MH "Therapeutic Exercise+") OR (MH "Exercise+") OR (MH "Exercise Tolerance+") OR (MH "Exercise Test+") OR (MH "Resistance Training") OR (MH "Stretching") OR (MH "Exergames") OR (MH "Video Games+") OR (MH "Virtual Reality+") OR (MH "Virtual Reality Exposure Therapy")
S9	S7 OR S8
S8	TI ( (education OR "patient educat*" OR "education of patient*" OR "health education" OR "health educator*" OR "patient information" OR "patient counseling" OR "patient teaching" OR "patient portal*" OR "mobile application*" OR "mobile app" OR "mobile apps" OR "portable software application*" OR "smartphone app" OR "smartphone apps" OR "smartphone application*" OR "portable electronic apps" OR "portable electronic application*" OR smartphone* OR "smart phone*" OR "internet based intervention*" OR "internet-based intervention*" OR "web based intervention*" )

- OR "web-based intervention\*" OR "online intervention\*" OR "on-line intervention\*" OR "internet intervention" OR counseling OR "directive counseling" OR "distance counseling" OR e-counseling OR "health communication\*") )
- OR AB ( (education OR "patient educat\*" OR "education of patient\*" OR "health education" OR "health educator\*" OR "patient information" OR "patient counseling" OR "patient teaching" OR "patient portal\*" OR "mobile application\*" OR "mobile app" OR "mobile apps" OR "portable software application\*" OR "smartphone app" OR "smartphone apps" OR "smartphone application\*" OR "portable electronic apps" OR "portable electronic application\*" OR smartphone\* OR "smart phone\*" OR "internet based intervention\*" OR "internet-based intervention\*" OR "web based intervention\*" OR "web-based intervention\*" OR "online intervention\*" OR "on-line intervention\*" OR "internet intervention" OR counseling OR "directive counseling" OR "distance counseling" OR e-counseling OR "health communication\*") )
- S7 (MH "Education+") OR (MH "Outcomes of Education") OR (MH "Patient Education+") OR (MH "Health Education+") OR (MH "Patient Portals") OR (MH "Health Educators+") OR (MH "Mobile Applications") OR (MH "Smartphone") OR (MH "Internet-Based Intervention") OR (MH "World Wide Web Applications+") OR (MH "Counseling+") OR (MH "Rehabilitation Counseling")
- S6 S5 OR S4
- S5 TI ( (postoperative OR post-operative OR "post operative" OR post-surg\* OR "post surg\*" OR post-intervention OR "post intervention") ) OR AB ( (postoperative OR post-operative OR "post operative" OR post-surg\* OR "post surg\*" OR post-intervention OR "post intervention") )
- S4 (MH "Postoperative Period") OR (MH "Postoperative Pain") OR (MH "Postoperative Complications+") OR (MH "Postoperative Care+")
- S3 S1 OR S2
- S2 TI ( ("knee\* arthroplasty" OR "knee\* replacement" OR "knee\* joint replacement" OR "hip arthroplasty" OR "hip replacement" OR "hip joint replacement" OR "hip hemiarthroplasty") ) OR AB ( ("knee\* arthroplasty" OR "knee\* replacement" OR "knee\* joint replacement" OR "hip arthroplasty" OR "hip replacement" OR "hip joint replacement" OR "hip hemiarthroplasty") )
- S1 (MH "Arthroplasty, Replacement, Hip") OR (MH "Arthroplasty, Replacement, Knee+")

## EMBASE

#16

#3 AND #6 AND #9 AND #12 AND #15

#15

#13 OR #14

#14

'randomized controlled trial\*':ti,ab,kw OR 'randomised controlled trial\*':ti,ab,kw

#13

'randomized controlled trial (topic)'/exp

#12

#10 OR #11

#11

physiotherap\*:ti,ab,kw OR 'physical therap\*:ti,ab,kw OR rehabilit\*:ti,ab,kw OR telerehabilitat\*:ti,ab,kw OR telemedicine:ti,ab,kw OR telehealth:ti,ab,kw OR 'e health':ti,ab,kw OR kinesiotherap\*:ti,ab,kw OR exercise\*:ti,ab,kw OR 'resistance training':ti,ab,kw OR 'muscle\* stretching':ti,ab,kw OR exergam\*:ti,ab,kw OR videogam\*:ti,ab,kw OR 'video game\*':ti,ab,kw OR 'virtual reality':ti,ab,kw

#10

'physiotherapy'/exp OR 'rehabilitation'/exp OR 'rehabilitation nursing'/exp OR 'rehabilitation center'/exp OR 'telerehabilitation'/exp OR 'telemedicine'/exp OR 'video consultation'/exp OR 'kinesiotherapy'/exp OR 'exercise'/exp OR 'exercise tolerance'/exp OR 'exercise test'/exp OR 'resistance training'/exp OR 'stretching exercise'/exp OR 'exergaming'/exp OR 'video game'/exp OR 'virtual reality'/exp OR 'virtual reality system'/exp OR 'virtual reality simulator'/exp OR 'virtual reality exposure therapy'/exp OR 'virtual reality head mounted display'/exp

#9

#7 OR #8

#8

education:ti,ab,kw OR 'patient educat\*:ti,ab,kw OR 'education of patient\*:ti,ab,kw OR 'health education':ti,ab,kw OR 'health educator\*:ti,ab,kw OR 'patient information':ti,ab,kw OR 'patient counseling':ti,ab,kw OR 'patient teaching':ti,ab,kw OR 'patient portal\*:ti,ab,kw OR 'mobile application\*:ti,ab,kw OR 'mobile app':ti,ab,kw OR 'mobile apps':ti,ab,kw OR 'portable software application\*:ti,ab,kw OR 'smartphone app':ti,ab,kw OR 'smartphone apps':ti,ab,kw OR 'smartphone application\*:ti,ab,kw OR 'portable electronic apps':ti,ab,kw OR 'portable electronic application\*:ti,ab,kw OR smartphone\*:ti,ab,kw OR 'smart phone\*:ti,ab,kw OR 'internet based intervention\*:ti,ab,kw OR 'internet-based intervention\*:ti,ab,kw OR 'web based intervention\*:ti,ab,kw OR 'web-based intervention\*:ti,ab,kw OR 'online intervention\*:ti,ab,kw OR 'on-line intervention\*:ti,ab,kw

OR 'internet intervention':ti,ab,kw OR counseling:ti,ab,kw OR 'directive counseling':ti,ab,kw  
OR 'distance counseling':ti,ab,kw OR 'e counseling':ti,ab,kw OR 'health  
communication\*':ti,ab,kw

**#7**

'education'/exp OR 'patient education'/exp OR 'medical record'/exp OR 'health  
education'/exp OR 'health educator'/exp OR 'mobile application'/exp OR 'smartphone'/exp  
OR 'web-based intervention'/exp OR 'e-counseling'/exp OR 'counseling'/exp OR 'patient  
counseling'/exp OR 'directive counseling'/exp OR 'medical information'/exp

**#6**

**#4 OR #5**

**#5**

postoperative:ti,ab,kw OR 'post operative':ti,ab,kw OR 'post surg\*':ti,ab,kw OR 'post  
intervention':ti,ab,kw

**#4**

'postoperative period'/exp OR 'postoperative complication'/exp OR 'postoperative care'/exp  
OR 'postoperative pain'/exp

**#3**

**#1 OR #2**

**#2**

'knee\* arthroplasty':ti,ab,kw OR 'knee\* replacement':ti,ab,kw OR 'knee\* joint  
replacement':ti,ab,kw OR 'hip arthroplasty':ti,ab,kw OR 'hip replacement':ti,ab,kw OR 'hip  
joint replacement':ti,ab,kw OR 'hip hemiarthroplasty':ti,ab,kw

**#1**

'hip replacement'/exp OR 'hip prosthesis'/exp OR 'total hip prosthesis'/exp OR 'knee  
prosthesis'/exp OR 'knee replacement'/exp

## **PEDro**

'knee\* arthroplasty' post\* 'patient\* education'  
'knee\* replacement' post\* 'patient\* education'  
'knee\* joint replacement' post\* 'patient\* education'  
'hip arthroplasty' post\* 'patient\* education'  
'hip replacement' post\* 'patient\* education'  
'hip joint replacement' post\* 'patient\* education'  
'knee\* arthroplasty' post\* 'mobile app\*'  
'knee\* replacement' post\* 'mobile app\*'  
'knee\* joint replacement' post\* 'mobile app\*'  
'hip arthroplasty' post\* 'mobile app\*'  
'hip joint replacement' post\* 'mobile app\*'  
'knee\* arthroplasty' post\* smartphone\*  
'knee\* replacement' post\* smartphone\*  
'knee\* joint replacement' post\* smartphone\*  
'hip arthroplasty' post\* smartphone\*  
'knee\* arthroplasty' post\* counseling  
'hip arthroplasty' post\* counseling  
'hip replacement' post\* counseling



## SCOPUS

( TITLE-ABS-KEY ( ( "knee\* arthroplasty" OR "knee\* replacement" OR "knee\* joint replacement" OR "hip arthroplasty" OR "hip replacement" OR "hip joint replacement" OR "hip hemiarthroplasty" ) ) AND TITLE-ABS-KEY ( ( postoperative OR post-operative OR "post operative" OR post-surg\* OR "post surg\*" OR post-intervention OR "post intervention" ) ) AND TITLE-ABS-KEY ( ( education OR "patient educat\*" OR "education of patient\*" OR "health education" OR "health educator\*" OR "patient information" OR "patient counseling" OR "patient teaching" OR "patient portal\*" OR "mobile application\*" OR "mobile app" OR "mobile apps" OR "portable software application\*" OR "smartphone app" OR "smartphone apps" OR "smartphone application\*" OR "portable electronic apps" OR "portable electronic application\*" OR smartphone\* OR "smart phone\*" OR "internet based intervention\*" OR "internet-based intervention\*" OR "web based intervention\*" OR "web-based intervention\*" OR "online intervention\*" OR "on-line intervention\*" OR "internet intervention" OR counseling OR "directive counseling" OR "distance counseling" OR e-counseling OR "health communication\*" ) ) AND TITLE-ABS-KEY ( ( physiotherap\* OR "physical therap\*" OR rehabilit\* OR telerehabilitat\* OR telemedicine OR telehealth OR e-health OR kinesiotherap\* OR exercise\* OR "resistance training" OR "muscle\* stretching" OR exergam\* OR videogam\* OR "video game\*" OR "virtual reality" ) ) ) AND ( LIMIT-TO ( EXACTKEYWORD , "Randomized Controlled Trial (topic)" ) OR LIMIT-TO ( EXACTKEYWORD , "Randomized Controlled Trial" ) )

### Google Scholar

intitle:( "randomized controlled trial\*" | "randomised controlled trial\*") intitle:(knee\* | hip\*)  
intitle:(postoperative | post-operative | "post operative" | post-surg\* | "post surg\*" | post-  
intervention | "post intervention") intitle:(education | "patient education\*" | "education of  
patient\*" | "health education" | "health educator\*" | "patient information" | "patient  
counseling" | "patient teaching" | "patient portal\*" | "mobile application\*" | "mobile app" |  
"mobile apps" | "portable software application\*" | "smartphone app" | "smartphone apps" |  
"smartphone application\*" | "portable electronic apps" | "portable electronic application\*" |  
smartphone\* | "smart phone\*" | "internet based intervention\*" | "internet-based  
intervention\*" | "web based intervention\*" | "web-based intervention\*" | "online  
intervention\*" | "on-line intervention\*" | "internet intervention" | counseling | "directive  
counseling" | "distance counseling" | e-counseling | "health communication\*")  
(physiotherap\* | rehabilit\* | telerehabilitat\* | telemedicine | telehealth | e-health |  
kinesiotherap\* | exercise\* | "resistance training" | "muscle\* stretching" | exergam\* |  
videogam\* | "video game\*" | "virtual reality")

### **Clinical Trials.gov**

("knee\* arthroplasty" OR "knee\* replacement" OR "knee\* joint replacement" OR "hip arthroplasty" OR "hip replacement" OR "hip joint replacement" OR "hip hemiarthroplasty") | Other terms: (postoperative OR post-operative OR "post operative" OR post-surg\* OR "post surg\*" OR post-intervention OR "post intervention") | (education OR "patient educat\*" OR "education of patient\*" OR "health education" OR "health educator\*" OR "patient information" OR "patient counseling" OR "patient teaching" OR "patient portal\*" OR "mobile application\*" OR "mobile app" OR "mobile apps" OR "portable software application\*" OR "smartphone app" OR "smartphone apps" OR "smartphone application\*" OR "portable electronic apps" OR "portable electronic application\*" OR smartphone\* OR "smart phone\*" OR "internet based intervention\*" OR "internet-based intervention\*" OR "web based intervention\*" OR "web-based intervention\*" OR "online intervention\*" OR "on-line intervention\*" OR "internet intervention" OR counseling OR "directive counseling" OR "distance counseling" OR e-counseling OR "health communication\*")

## APPENDIX B – Excluded studies

Potentially relevant studies for which the full-text was screened but not included in the review. The motivation for exclusion is provided.

### Studies from Databases

- 1- **Berkan Torpil et al, 2022**<sup>1</sup>. The study was excluded because the intervention group's treatment involved creating adaptations for daily occupations based on the patient's needs, engaging them in this process.
- 2- **Ping LI et al 2021**<sup>2</sup>. The study was excluded because the intervention group received a video demonstration on how to correctly perform the exercises.
- 3- **D. A. Crawford et al, 2021**<sup>3</sup>. The study was excluded because the education was provided both in the pre-operative and post-operative periods.
- 4- **Kristin Siggeirsdottir et al, 2005**<sup>4</sup>. The study was excluded because the education was provided in the pre-operative period.
- 5- **D. A. Crawford et al, 2021**<sup>5</sup>. The study was excluded because the education is provided both in the pre-operative and post-operative periods.
- 6- **Eisermann U et al, 2004**<sup>6</sup>. The study was excluded because the education includes instruction on how to perform exercises and is provided both in the pre-operative and post-operative periods.
- 7- **Runkai Zhao et al, 2023**<sup>7</sup>. The study was excluded because the app assesses the patient's performance during the execution of the exercises and plans the schedule for the following weeks.
- 8- **Jacob S. Alexander et al, 2023**<sup>8</sup>. The study was excluded because the app is an educational platform about exercises.
- 9- **Turid Rognsvåg et al, 2024**<sup>9</sup>. The study was excluded because the educational group and the control group differ significantly in terms of treatment, as the intervention group also undergoes exercise-based therapy.
- 10- **Krishna R et al, 2021**<sup>10</sup>. The study was excluded because the purpose of the app was to monitor individuals with varying levels of adherence to exercise execution, along with education provided in the pre-operative period.
- 11- **Elena Losina et al, 2019**<sup>11</sup>. The study was excluded because the outcomes, such as the number of steps and amount of physical activity, were not of interest in the study.
- 12- **Nina Santavirta et al, 1994**<sup>12</sup>. The study was excluded because the informational booklet was provided in the pre-operative period.

- 13- **Elena Losina et al, 2013**<sup>13</sup>. The study was excluded because this study does not provide true patient education, but only a dialogue between the patient and a navigator, who does not provide information to the patient.
- 14- **Jie Wang et al, 2018**<sup>14</sup>. The study was excluded because it does not fall within the definition of education established in the protocol.
- 15- **Su-Ru Chen et al, 2013**<sup>15</sup>. The study was excluded because education is provided both in the pre-operative and post-operative periods.
- 16- **Sara R Piva et al, 2017**<sup>16</sup>. The study was excluded because the intervention group, in addition to education, performs high-intensity exercises.
- 17- **Rosemary Saunders et al, 2021**<sup>17</sup>. The study was excluded because the treatment of the intervention group and the control group do not adhere to the criteria established in the protocol. Moreover, education is provided both in the pre-operative and post-operative periods.
- 18- **Majbritt Madsen et al, 2013**<sup>18</sup>. The study was excluded because the comparison is between group rehabilitation and education versus supervised home-based individual training.
- 19- **Jesper B. Larsen et al, 2024**<sup>19</sup>. The study was excluded because the treatment of the intervention group and the control group does not adhere to the criteria established in the protocol.
- 20- **Huang et al, 2017**<sup>20</sup>. The study was excluded because the full text is available only in Chinese.
- 21- **Jamieson et al, 2022**<sup>ND</sup>. The study was excluded because the full text is not available.
- 22- **Minna Pikkarainen et al, 2019**<sup>ND</sup>. The study was excluded because the full text is not available.
- 23- **V. Duong et al, 2023**<sup>21</sup>. The study was excluded because the study design is incorrect.
- 24- **K.J. Campbell et al, 2019**<sup>22</sup>. The study was excluded because the number of patients undergoing joint replacement for reasons other than osteoarthritis is not specified.
- 25- **Ya Meng et al, 2022**<sup>23</sup>. The study was excluded because the majority of patients were treated with joint replacement for reasons other than osteoarthritis.
- 26- **Lun La Li et al, 2014**<sup>24</sup>. The study was excluded because the majority of patients were treated with joint replacement for reasons other than osteoarthritis.
- 27- **Sygekassernes Helsefond et al, 2016**<sup>25</sup>. The study was excluded because the number of patients undergoing joint replacement for reasons other than osteoarthritis is not specified.
- 28- **Yongmei Zhang et al, 2023**<sup>ND</sup>. The study was excluded because the full text is not available.

29- **Yinjuan Cao et al, 2019<sup>ND</sup>**. The study was excluded because the full text is not available.

30- **Xie Wenqing et al, 2023<sup>ND</sup>**. The study was excluded because the full text is not available.

31- **Rognsvaag et al, 2023<sup>26</sup>**. The study was excluded because it is actually the abstract of another paper that was previously excluded and will be considered a duplicate.

### **Studies from “Additional Methods”**

1- **Jian-Ning Sun et al, 2020<sup>27</sup>**. The study was excluded because the treatment of the intervention group and the control group does not adhere to the criteria established in the protocol. Moreover, education is provided both in the pre-operative and post-operative periods.

2- **Walet et al, 2020<sup>28</sup>**. The study was excluded because the treatment of the intervention group and the control group does not adhere to the criteria established in the protocol. Moreover, education is provided both in the pre-operative and post-operative periods

3- **Timmers et al, 2019<sup>29</sup>**. The study was excluded because it is an additional duplicate compared to the articles from the Databases/Registers.

4- **Campbell et al, 2023<sup>22</sup>**. The study was excluded because it is an additional duplicate compared to the articles from the Databases/Registers.

### **References**

1. Torpil B, Kaya Ö. The Effectiveness of Client-Centered Intervention With Telerehabilitation Method After Total Knee Arthroplasty. OTJR (Thorofare N J). 2022 Jan;42(1):40-49. doi: 10.1177/15394492211038293. Epub 2021 Aug 22. PMID: 34423693.
2. Li P, Li X, Meng H, Huang L, Zhang L, Wang S, Chen S. Video-Assisted Health Education Promotes Rehabilitation Training of Total Knee Arthroplasty Patients and Reduces Stress and Burnout in Nurses Compared to Oral Education. Biomed Res Int. 2021 Oct 22;2021:5058899. doi: 10.1155/2021/5058899. Retraction in: Biomed Res Int. 2024 Mar 20;2024:9834307. doi: 10.1155/2024/9834307. PMID: 34722765; PMCID: PMC8556099.
3. Crawford DA, Lombardi AV Jr, Berend KR, Huddleston JI 3rd, Peters CL, DeHaan A, Zimmerman EK, Duwelius PJ. Early outcomes of primary total hip arthroplasty with use of a smartphone-based care platform: a prospective randomized controlled trial. Bone Joint J. 2021 Jul;103 -B(7 Supple B):91-97. doi: 10.1302/0301-620X.103B7.BJJ-2020-2402.R1. PMID: 34192907.
4. Siggeirsdottir K, Olafsson O, Jonsson H, Iwarsson S, Gudnason V, Jonsson BY. Short hospital stay augmented with education and home-based rehabilitation improves function and quality of life after hip replacement: randomized study of 50 patients with 6 months of follow-up. Acta Orthop. 2005 Aug;76(4):555-62. doi: 10.1080/17453670510041565. PMID: 16195074.

5. Crawford DA, Duwelius PJ, Sneller MA, Morris MJ, Hurst JM, Berend KR, Lombardi AV. 2021 Mark Coventry Award: Use of a smartphone-based care platform after primary partial and total knee arthroplasty: a prospective randomized controlled trial. *Bone Joint J.* 2021 Jun;103-B(6 Supple A):3-12. doi: 10.1302/0301-620X.103B6.BJJ-2020-2352.R1. PMID: 34053272.
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7. Zhao R, Cheng L, Zheng Q, Lv Y, Wang YM, Ni M, Ren P, Feng Z, Ji Q, Zhang G. A Smartphone Application-Based Remote Rehabilitation System for Post-Total Knee Arthroplasty Rehabilitation: A Randomized Controlled Trial. *J Arthroplasty.* 2024 Mar;39(3):575-581.e8. doi: 10.1016/j.arth.2023.08.019. Epub 2023 Aug 11. PMID: 37572720.
8. Alexander JS, Redfern RE, Duwelius PJ, Berend KR, Lombardi AV Jr, Crawford DA. Use of a Smartphone-Based Care Platform After Primary Partial and Total Knee Arthroplasty: 1-Year Follow-Up of a Prospective Randomized Controlled Trial. *J Arthroplasty.* 2023 Jul;38(7 Suppl 2):S208-S214. doi: 10.1016/j.arth.2023.02.082. Epub 2023 Mar 6. PMID: 36889524.
9. Rognsvåg T, Bergvad IB, Furnes O, Indrekvam K, Lerdal A, Lindberg MF, Skou ST, Stubberud J, Badawy M. Exercise therapy, education, and cognitive behavioral therapy alone, or in combination with total knee arthroplasty, in patients with knee osteoarthritis: a randomized feasibility study. *Pilot Feasibility Stud.* 2024 Feb 28;10(1):43. doi: 10.1186/s40814-024-01470-y. PMID: 38419024; PMCID: PMC10900652.
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## APPENDIX C – GRADE Criteria

We used the following criteria to assess the certainty of evidence by the GRADE approach.

- **Risk of Bias:** no downgrading if no serious flaws were highlighted (i.e. most of information came from studies at low risk of bias or “some concerns” without influencing the overall estimate of effect); one level if serious limitations were highlighted (i.e. most of information came from studies at high risk of bias or “some concerns” with probably impact on the overall estimate of effect); two levels if very serious limitations were highlighted (i.e. most of information came from studies at high risk of bias) with impact on the overall estimate of effect. We intended “most of information” when coming from studies contributing to > 50% of that meta-analysis.
- **Indirectness:** one level if one element of the main research question was not clearly represented in the eligible studies; two level if one or more elements of the main research question of the eligible studies were significantly different from our research question.
- **Inconsistency:** one level if the point estimates varied across studies AND confidence intervals showed minimum or no overlap; two levels if the same previous criteria were accompanied by  $I^2$  higher than 60%;
- **Imprecision:** one level if the sample size was less than 400 subjects (for continuous outcomes) and two levels if 95%CI of estimate effect included both clinically relevant benefit and harm;
- **Publication bias:** one level if the funnel plot (for >10 trials) was asymmetric suggesting missing studies or if less than 10 studies were available, we followed the algorithm published on the Core GRADE recommendations.