Life and Health Sciences Research Institute
Instituto de Investigação em Ciências da Vida e Saúde

ICVS/3B's
Associate Laboratory
University of Minho

Universidade do Minho
Escola de Ciências da Saúde

Introdução às Revisões Sistemáticas

Sessão Apresentação Resultados

PhD4Moz
Fostering a sustainable platform to support PhD training in Health Sciences in Mozambique

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Revisões sistemáticas - Principais passos

1. Desenvolvimento da pergunta de investigação
2. Pesquisa preliminar (Registos de RS e artigos)
3. Definição dos critérios de inclusão/exclusão
4. Definição da estratégia de pesquisa
5. Pesquisa nas bases de dados
6. Registo do protocolo de investigação
7. Triagem por título e resumo
8. Triagem do texto integral
9. Pesquisa manual das referências bibliográficas
10. Extração dos dados
11. Avaliação da qualidade
12. Verificação de dados e análise estatística
13. Meta-análise
14. Verificação das análises (e dados)
15. Redação do manuscrito
16. Submissão do manuscrito

Apresentação de dados

- Durante o desenvolvimento do protocolo, os revisores devem ter um plano para a apresentação dos resultados – gráficos, figuras ou tabelas.
- O planeamento nessa fase é muito útil para uma noção inicial de que tipos de dados podem ser identificados e como melhor apresentar esses dados em relação ao objetivo e à(s) questão(ões) da revisão.
- Este processo é refinado durante o processo de revisão, à medida que os revisores têm noção do conteúdo de todas as fontes incluídas.

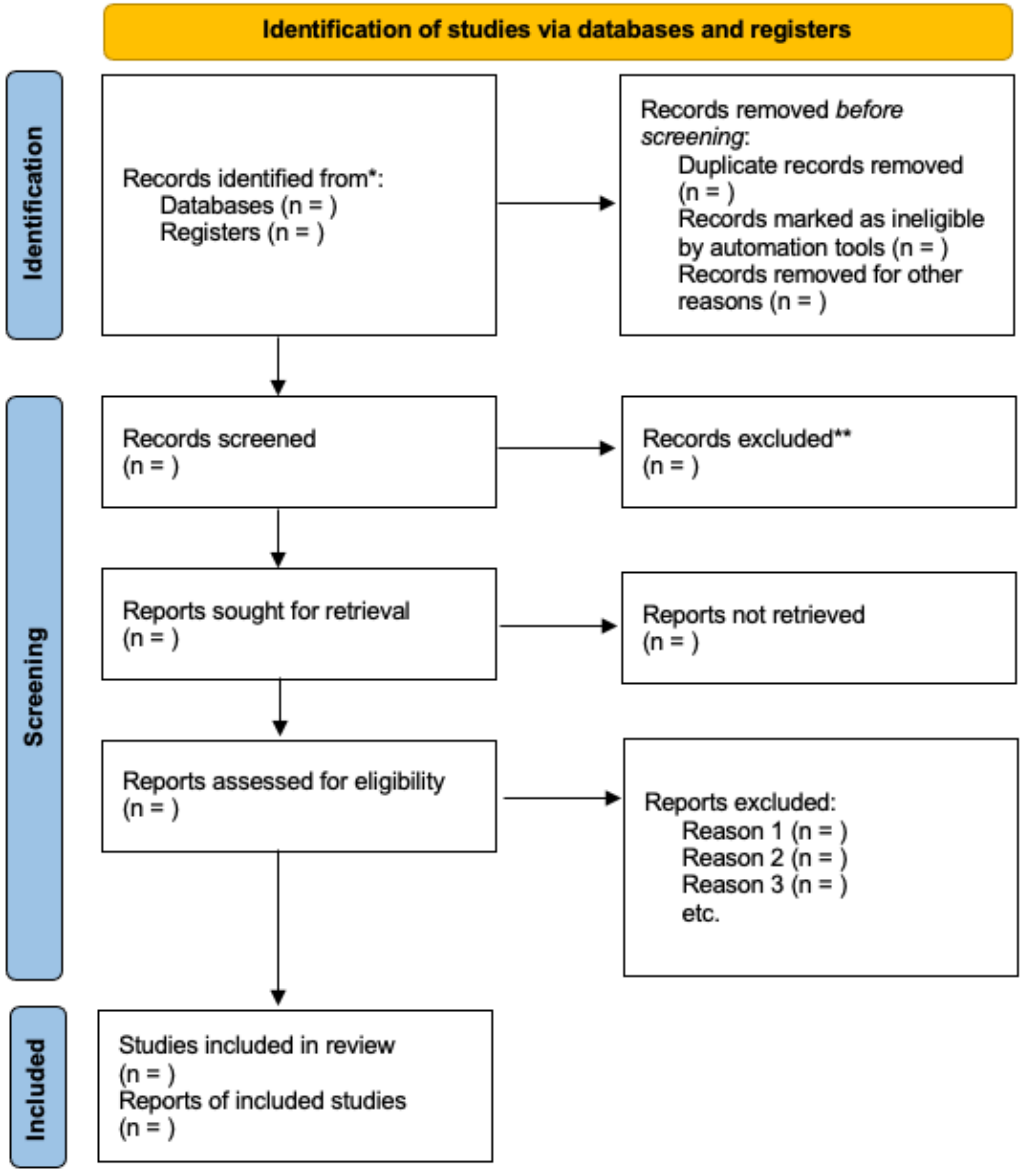
Apresentação de dados

- O objetivo final da apresentação dos dados é identificar, caracterizar e resumir as evidências de investigação sobre um tópico, incluindo a identificação de lacunas de investigação.
- Os resultados são normalmente apresentados sob a forma de um resumo breve acompanhados por diagramas ou tabelas.
- Os elementos dos critérios de inclusão podem ser úteis para orientar a forma como os dados devem ser apresentados de forma mais adequada.

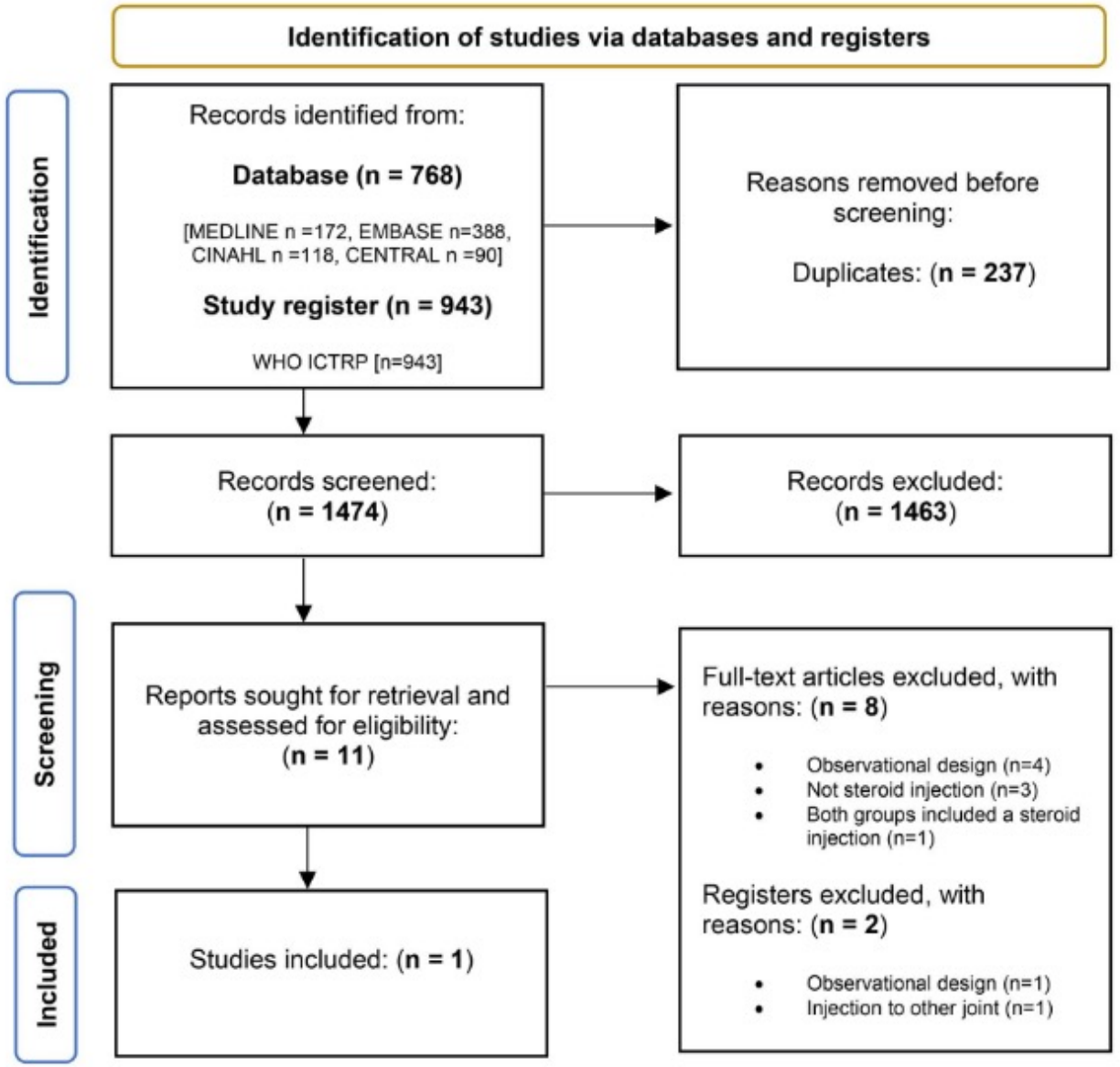
Apresentação de dados

1. Resultados da triagem
2. Resultados da avaliação da qualidade da evidência
3. Caracterização dos estudos e da população
4. Resposta às questões de investigação

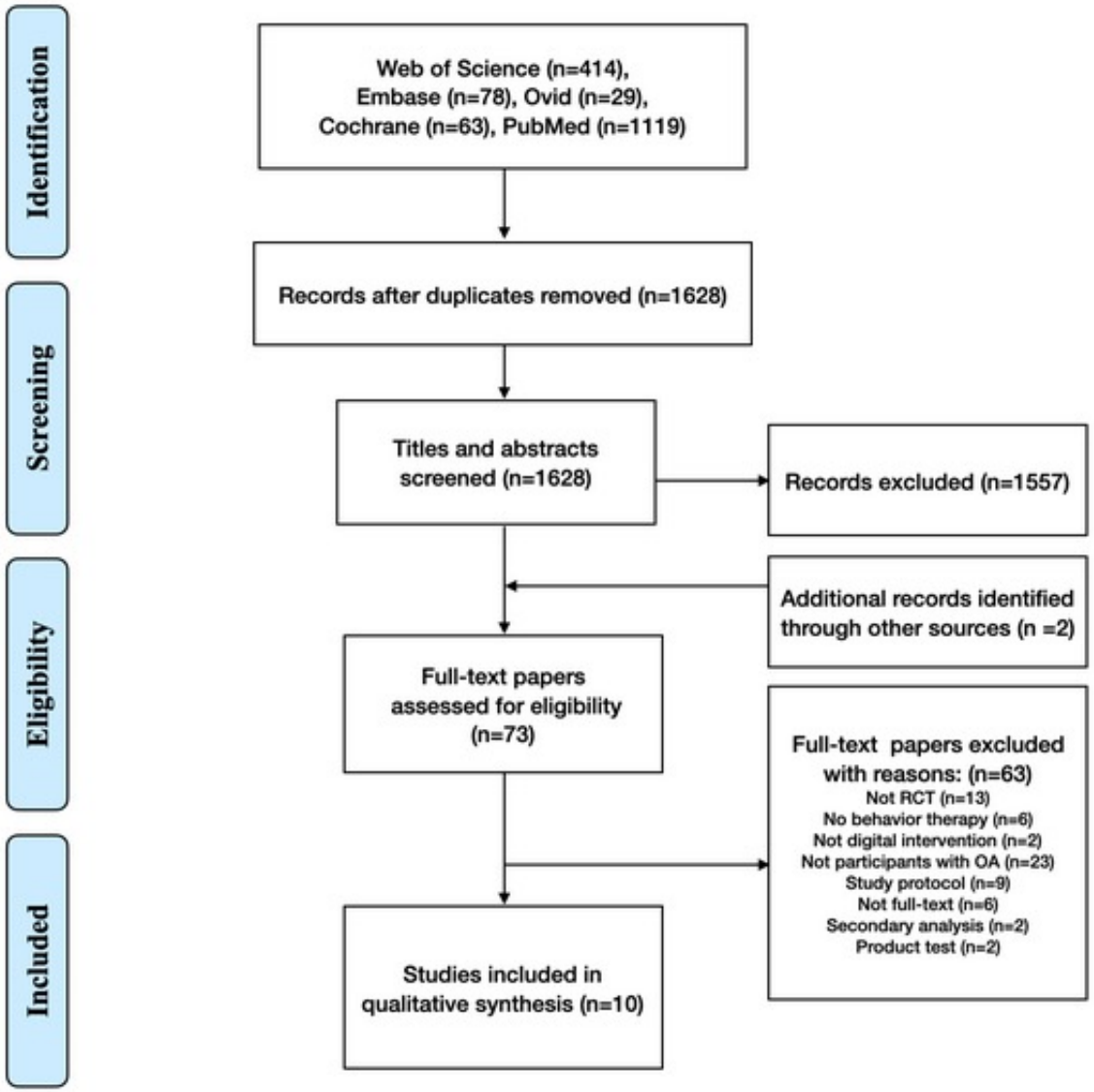
Apresentação de dados - Flowchart



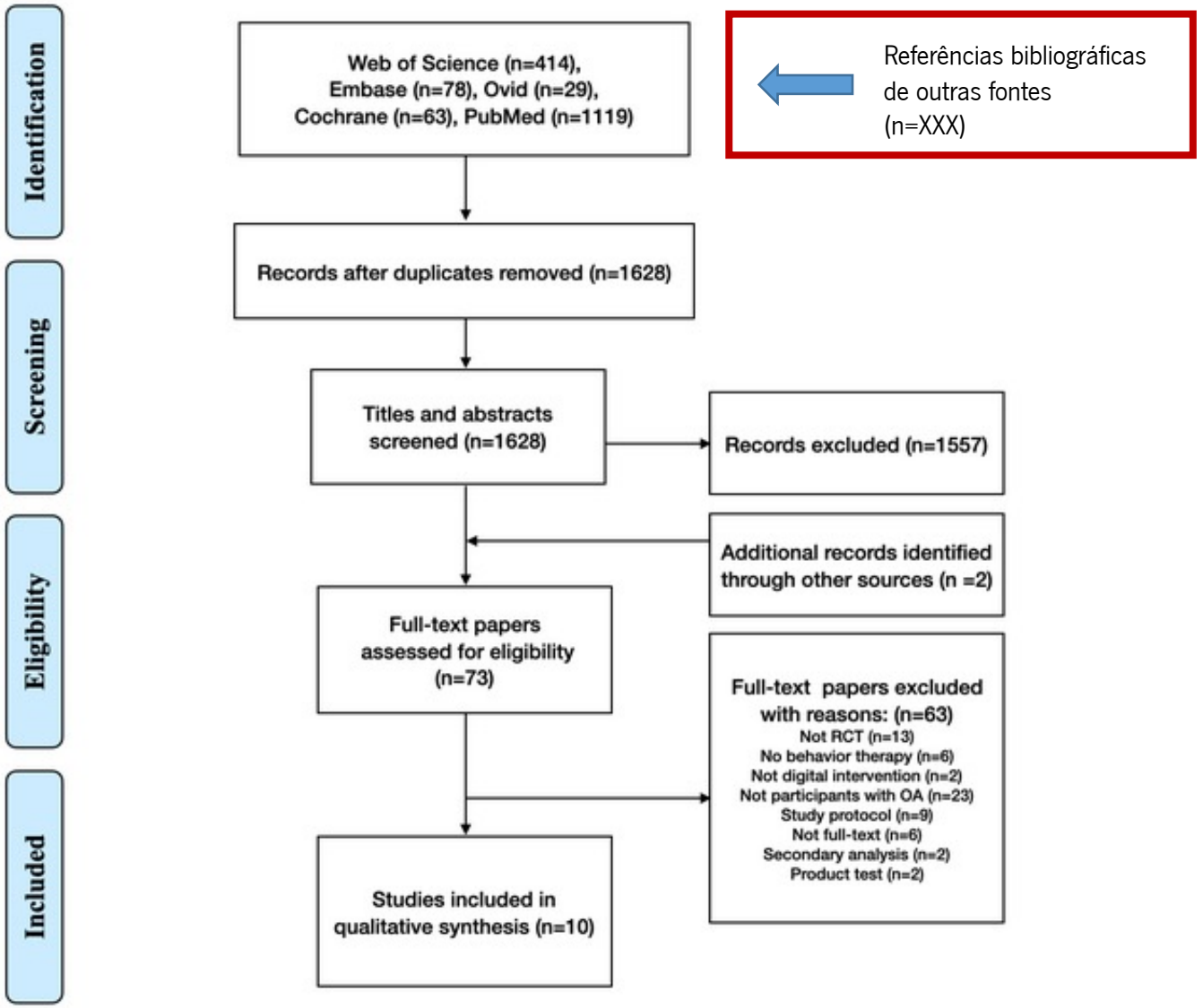
Apresentação de dados - Flowchart



Apresentação de dados - Flowchart



Apresentação de dados - Flowchart



Apresentação de dados - Flowchart

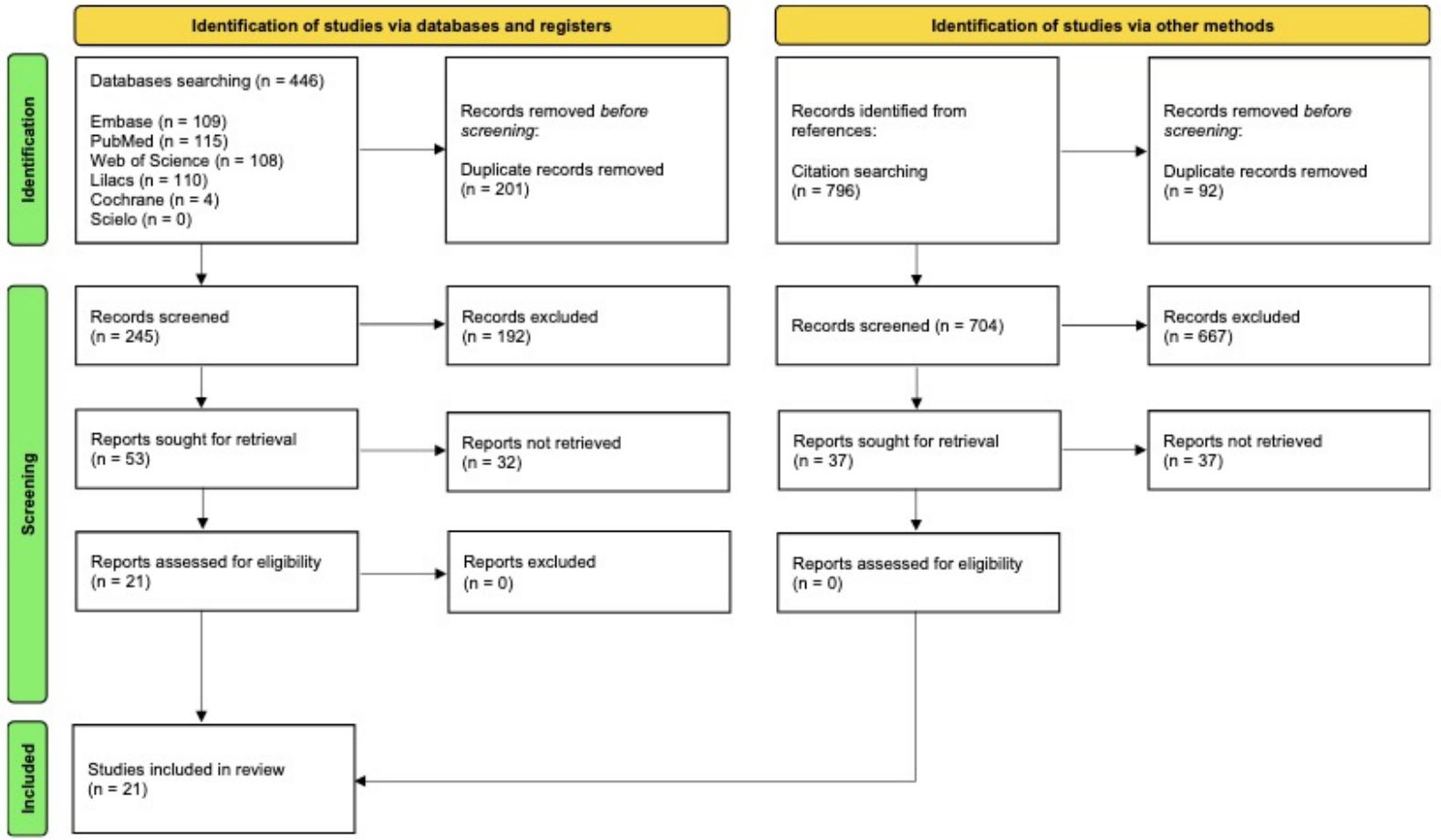
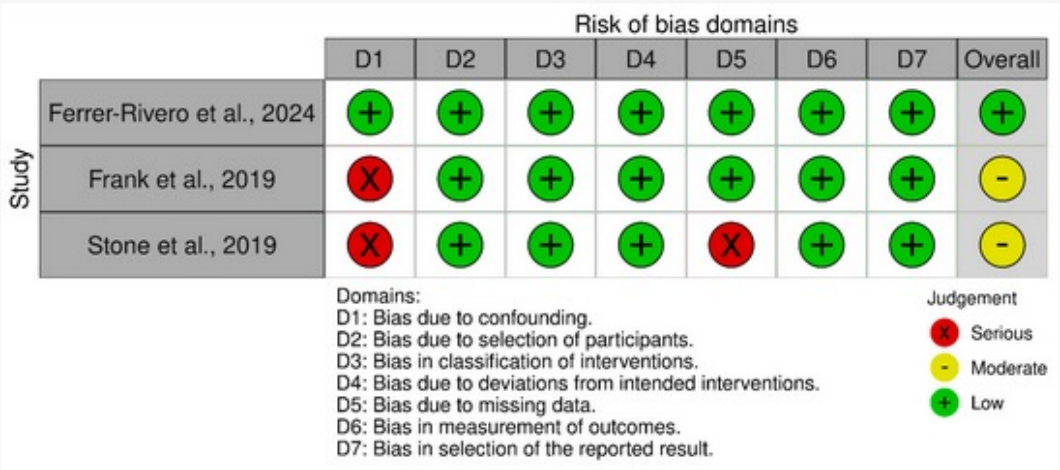
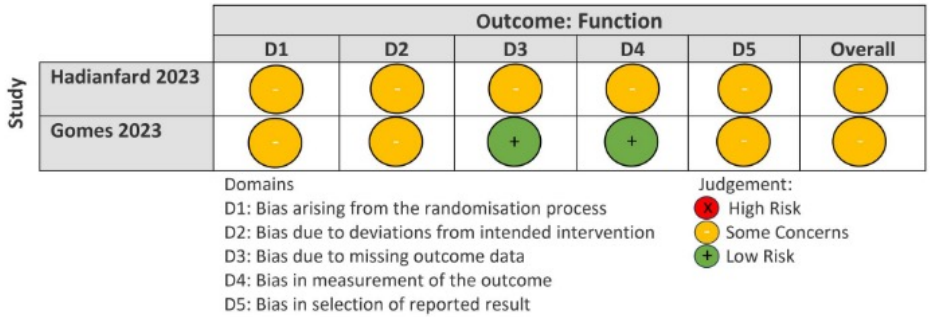


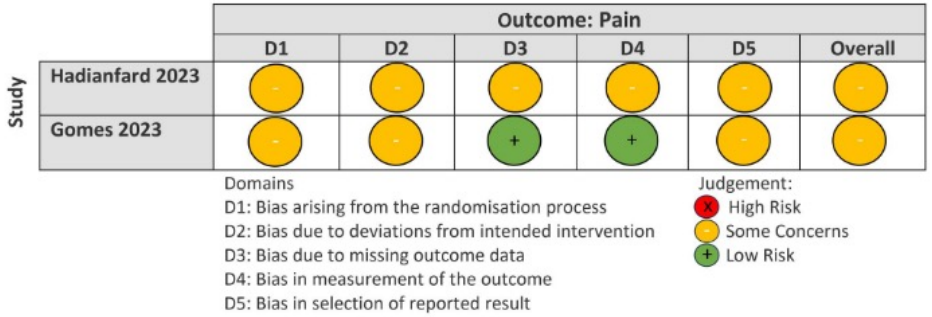
Fig. 1 Flow diagram of the selection process

Apresentação de dados – Avaliação Qualidade

Figure 2. The ROBINS-I of non-RCTs.

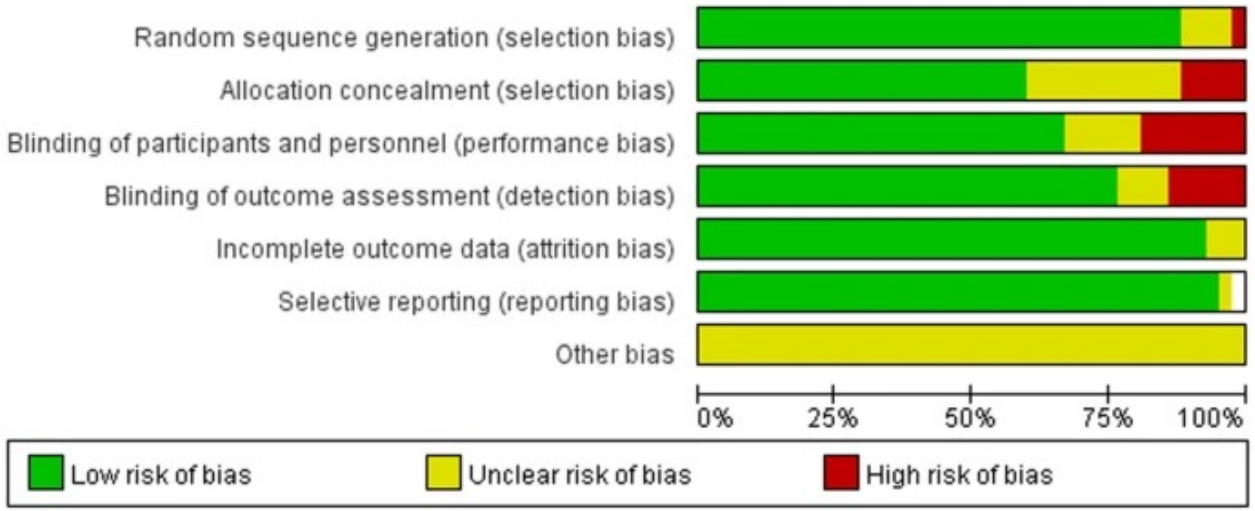




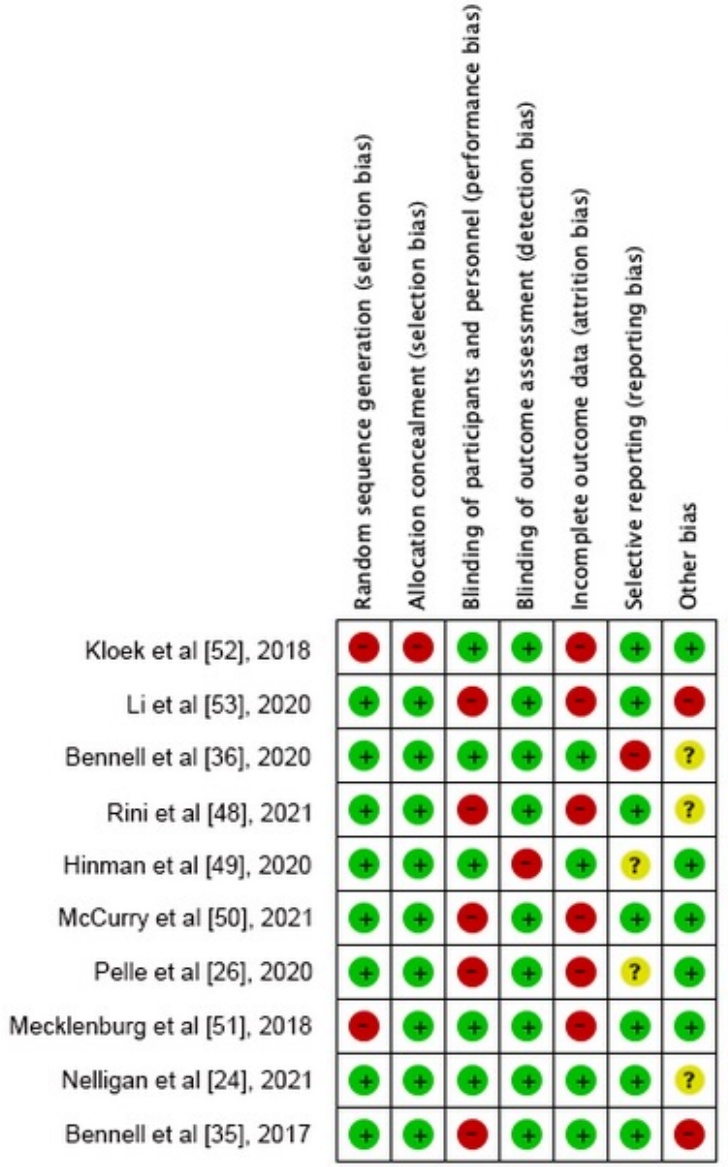


Apresentação de dados – Avaliação Qualidade

Fig. 2



Risks of bias graph



Apresentação de dados – Caracterização estudos e população

Table 1. Characteristics of the included studies.

Study author(s)	Nationality	Participants		Outcome (primary or secondary)	Follow-up (months)	Postintervention attrition (%)	
		Intervention group	Control group			Intervention group	Control group
Bennell et al [36]	Australia	SMS text message (n=56)	Non-SMS text message (n=54)	Exercise Adherence Rating Scale, days of the week to exercise (0-3), pain (Knee Injury and Osteoarthritis Outcome Score), overall mean knee pain (Numeric Rating Scale), symptoms (Knee Injury and Osteoarthritis Outcome Score), function (Knee Injury and Osteoarthritis Outcome Score), knee-related quality of life (Knee Injury and Osteoarthritis Outcome Score), health-related quality of life, self-efficacy: pain (Arthritis Self-Efficacy Scale), self-efficacy: function (Arthritis Self-Efficacy Scale), self-efficacy: other (Arthritis Self-Efficacy Scale), Behavioral Factors in Osteoarthritis Management Scale, Physical Activity Scale for the Elderly, Pain Catastrophizing Scale	6	14.29	5.55
Rini et al [48]	United States	Digital application (n=58)	Nonintervention (n=55)	Pain, self-efficacy in pain management, pain-related anxiety, pain-related functional interference, positive and negative emotions	3	1.72	5.45
Hinman et al [49]	Australia	Campaign advice and support (n=87)	Available services (n=88)	Overall mean knee pain (Numeric Rating Scale), Pain with Activities of Daily Living (Western Ontario and McMaster Universities Arthritis Index), mean pain while walking (Numeric Rating Scale), Pain Self-Efficacy (Arthritis Self-Efficacy Scale), Functional Self-Efficacy (Arthritis Self-Efficacy Scale), Fear of Movement, Physical Activity Scale for the Elderly, barriers to physical activity, benefits of physical activity, health-related quality of life	6	5.74	13.63
McCurry et al [50]	United States	Cognitive behavioral therapy-I (n=163)	Education (n=164)	Insomnia Severity Index, Flinders Fatigue Scale, Arthritis Pain Intensity and Interference with Activity, Brief Pain Inventory-short form, Patient Health Questionnaire-8 items, Measure of Depression	12	14.72	6.09

Apresentação de dados – Resposta às questões de investigação

Table 2. Summary of the findings for efficacy outcomes.[a]

Outcome, time	Studies (patients), n	SMD[b] (95% CI)	I^2 (%)	Quality of evidence assessment					
				Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Rating[c]
Pain (short-term)	10 (1895)	–0.20 (–0.35 to 0.05)	65	_[d]	–	+[e]	+	+	Low
Pain (long-term)	6 (1271)	–0.01 (–0.12 to 0.10)	0	–	+	+	+	+	Moderate
Physical function (short-term)	6 (974)	–0.20 (–0.41 to 0.00)	62	–	–	+	+	+	Low
Physical function (long-term)	3 (519)	–0.13 (–0.32 to 0.06)	0	–	+	+	+	+	Moderate
Health-related quality of life (short-term)	6 (1137)	0.28 (–0.05 to 0.61)	86	–	_[–2f]	+	+	+	Very low
Pain self-efficacy (long-term)	5 (812)	0.22 (0.02 to 0.42)	10	–	+	+	–	+	Low
Physical activity (short-term)	5 (1086)	0.05 (–0.07 to 0.17)	0	–	+	+	+	+	Moderate

Apresentação de dados – Caracterização estudos e população

Table 1 Basic information of all the identified RCTs

Author.Year	Country	Group	N	Age, year	Sex M/F	BMI	OA Grade (KL)	OA Grade	Intervention (Dose,Times,Type)	Follow-up
Ahmad, H. S. 2018 [25]	Egypt	PRP	45	56.2 ± 6.8	14/31	26.7 ± 3.6	Grade 1–3; $P > 0.05$	2.83 ± 0.75	4 mL,3 times,2 weeks	6 m
		HA	44	56.8 ± 7.4	14/30	26.5 ± 3.5		2.25 ± 0.72	20 mg/2 mL,3 times,2 weeks	
Arliani, G. G. 2022 [26]	Brazil	PRP	14	62.78 ± 6.1	11/3	28.3	Grade 2–3; $P > 0.9999$	2.36 ± 0.50	5 mL,3 times,weekly	6 m
		HA	15	63.4 ± 4.99	13/2	28.1		2.4 ± 0.51	NA	
Buendía-López, D. 2018 [27]	Spain	PRP	33	56.15 ± 3.0	16/17	24.9 ± 0.32	Grade 1–2; $P > 0.05$	1.46 ± 0.51	5 mL,1 time	12 m
		HA	32	56.63 ± 2.9	15/17	24.9 ± 0.41		1.44 ± 0.50	60 mg/2 mL,1 time,DUROLANE	
Cerza, F. 2012 [28]	Italy	PRP	60	66.5 ± 11.3	25/35	NA	Grade 1–3; $P > 0.05$	1.9 ± 0.77	5.5 mL,4 times,weekly	6 m
		HA	60	66.2 ± 10.6	28/32			1.8 ± 0.78	20 mg/2 mL,4 times,weekly;HYALGAN	
Cole, B. J. 2017 [29]	USA	PRP	49	55.9 ± 10.4	28/21	27.4 ± 3.9	Grade 1–3; $P > 0.05$	2.35 ± 0.60	4 mL,3 times,weekly	12 m
		HA	50	56.8 ± 10.5	20/30	29.0 ± 6.4		2.45 ± 0.50	16 mg/2 mL,3 times,weekly	
Di Martino, A. 2019 [30]	Italy	PRP	85	52.7 ± 13.2	53/32	27.2 ± 7.6	Grade 1–3	2.0 ± 1.1	5 mL,3 times, weekly	24 m
		HA	82	57.5 ± 11.7	47/35	26.8 ± 4.3		2.0 ± 1.0	30 mg/2 mL,3 times,weekly;Hyalubrix	
Dong, C. 2022 [31]	China	PRP	24	56.64 ± 8.32	6/18	27.14 ± 3.16	Grade 3–4; $P > 0.05$	3.33 ± 0.48	3 ml,4 times, weekly,1 week postsurgery	12 m
		HA	25	55.18 ± 7.96	5/20	27.13 ± 3.04		3.4 ± 0.5	3 ml,4 times, weekly,1 week postsurgery	
Dulic, O. 2021 [32]	Serbia	PRP	34	58.8 ± 11.2	15/19	28.47 ± 4.54	Grade 2–4; $P > 0.05$	2.94 ± 0.81	NA	12 m
		HA	30	59.4 ± 14.0	13/17	29.98 ± 5.24		2.87 ± 0.86	20mg/2ml,3 times,weekly,Cartinorm	
Duymus, T. M. 2017 [33]	Turkey	PRP	33	60.4 ± 5.1	1/32	27.6 ± 4.6	Grade 2–3; $P > 0.05$	2.33 ± 0.48	5 mL,2 times,2 weeks	12 m
		HA	34	60.3 ± 9.1	1/33	28.4 ± 3.6		2.29 ± 0.46	40 mg/2 mL,1 time,OSTENIL PLUS	
Filardo, G. 2012 [34]	Italy	PRP	54	55	37/17	27	Grade 1–3	2.2	5 mL,3 times, weekly	12 m
		HA	55	58	31/24	26		2.1	3 times, weekly, Hyalubrix	
Filardo, G. 2015 [16]	Italy	PRP	94	53.32 ± 13.2	60/34	26.6 ± 4.0	Grade 1–3	2.0 ± 1.1	5 mL,3 times,weekly	12 m
		HA	89	57.55 ± 11.8	52/37	26.9 ± 4.4		2.0 ± 1.1	20 mg/2 mL,3 times,weekly,Hyalubrix	
Gormeli, G. 2017 [35]	Turkey	PRP	39	53.7 ± 13.1	16/23	28.7 ± 4.8	Grade 1–4	NA	5 mL,3 times,weekly	6 m
		HA	39	53.5 ± 14	17/22	29.7 ± 3.7			20 mg/2 mL,3 times,weekly,ORTHOVISC	
Huang, Y. 2019 [36]	China	PRP	40	54.5 ± 1.2	25/15	25.23 ± 4.15	Grade 1–2	NA	4 mL,1 time	12 m
		HA	40	54.8 ± 1.1	19/21	24.51 ± 3.09			2 mL,3 times, weekly	
Kesiktas, F. N. 2020 [37]	Turkey	PRP	18	52.7 ± 8.3	2/16	28.3 ± 4.4	Grade 2–4; $P > 0.05$	2 ± 0.77	2 – 3ml,1 time	3 m
		HA	18	55.1 ± 10.3	4/14	31.0 ± 4.9		2.06 ± 0.80	1 time,Biometics	
Kon, E. 2011 [38]	Italy	PRP	50	50.6 ± 13.8	30/20	24.6 ± 3.2	Grade 0–4	NA	5 mL,3 times,2 weeks	6 m
		HA	100	54.05 ± 12.77	52/48	25.5 ± 2.99			20 or 30 mg/2 mL,1 time	
Küçükakkaş, O. 2022 [39]	Turkey	PRP	20	57.5 ± 10.6	4/16	29.8 ± 6.8	Grade 2–3	NA	1 time	6 m
		HA	20	57.0 ± 10.1	6/14	28.9 ± 3.6			1 time	
Lana, J. F. 2016 [40]	Brazil	PRP	36	60.9 ± 7	7/29	27.42 ± 6.89	Grade 1–3; $P > 0.05$	2.11 ± 0.78	5 mL,1 time	12 m
		HA	36	60 ± 6.6	3/33	28.24 ± 8.77		2.06 ± 0.75	20 mg/2 mL,5 – 8 times	

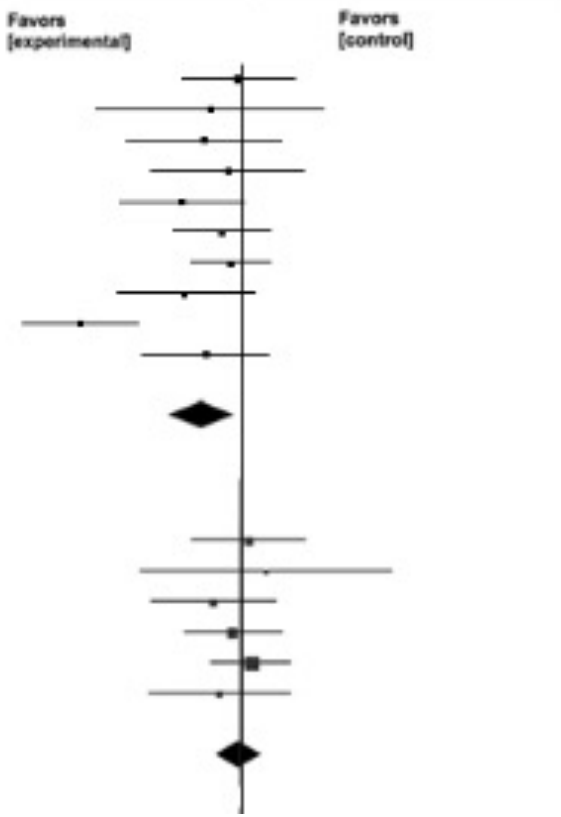
Apresentação de dados – Caracterização estudos e população

VAS score

VAS score before intra-articular injection was available in 25 studies, with one [53] not reporting the SD. Data from 29 studies were used for analysis and no statistic difference was found ($p=0.05$, Fig. 4). The VAS score at one to three months post-injection was available in 20 studies. The analysis revealed that patients in the PRP group had significantly lower VAS score ($p<0.01$, Fig. 5). VAS

Apresentação de dados – Resposta às questões de investigação

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI	P Value	Confidence in Evidence
Pain (short term)										
Kloek, C.J.J 2018	-5.4	46.5	109	-4.9	45.92	99	11.1%	-0.01 [-0.28, 0.26]		
Li, L.C 2020	-0.1	65.3	26	9.7	68.41	25	5.1%	-0.14 [-0.69, 0.41]		
Kim Bennell 2020	-0.6	2.4	56	-0.2	2.2	54	8.3%	-0.17 [-0.55, 0.20]		
Christine Rini 2015	-0.75	4.23	55	-0.5	4.03	58	8.4%	-0.06 [-0.43, 0.31]		
Rana S Hinman 2020	-2.5	2	87	-1.9	2.3	88	10.4%	-0.28 [-0.57, 0.02]		
Susan M. McCurry 2021	-1	3.12	136	-0.7	3.39	146	12.4%	-0.09 [-0.33, 0.14]		
Pelle, T 2020	-2	53.2	214	0.8	50.85	213	13.9%	-0.05 [-0.24, 0.14]		
Mecklenburg, G 2018	-10.7	26.31	101	-3	33.32	54	9.4%	-0.26 [-0.60, 0.07]		
Nelligan, R.K 2021	-18.5	15.3	103	-6.4	15.9	103	10.8%	-0.77 [-1.06, -0.49]		
Bennell, K.L 2017	-2.5	2.76	84	-2	3.32	84	10.2%	-0.16 [-0.47, 0.14]		
Total (95% CI)			**971**			**924**	**100.0%**	**-0.20 [-0.35, -0.05]**	0.008	Low
Pain (long term)										
Kloek, C.J.J 2018	-15.5	58.96	109	-17.7	56.62	99	16.4%	0.04 [-0.23, 0.31]		
Li, L.C 2020	0.5	64.52	20	-7.7	67.18	23	3.4%	0.12 [-0.48, 0.72]		
Rana S Hinman 2020	-2.1	2.2	88	-1.8	2.4	87	13.8%	-0.13 [-0.43, 0.17]		
Susan M. McCurry 2021	-1.2	2.94	136	-1.1	3.03	146	22.2%	-0.03 [-0.27, 0.20]		
Pelle, T 2020	1.9	52.82	214	-0.7	50.94	213	33.6%	0.05 [-0.14, 0.24]		
Bennell, K.L 2017	-2.4	2.88	70	-2.1	3.22	66	10.7%	-0.10 [-0.43, 0.24]		
Total (95% CI)			**637**			**634**	**100.0%**	**-0.01 [-0.12, 0.10]**	0.88	Moderate



Apresentação de dados – Caracterização estudos e população

Table 1. Characteristics of included studies

Author/year	Study design	Participants	Treatments	Outcome-measures/timepoint
Hadianfard *et al.* [29] Country: Iran	RCT Parallel block randomization ('equal allocation') Participant and statistician blinded	$N = 32$ F/M = 27/5 Mean age 48 years (range 30–65) Population: grade I or II MTP joint OA	***Active*** ($n = 16$): mixture of 1 cc methylprednisolone acetate (40 mg) and 1 cc of lidocaine 2%. Single injection ***Control*** ($n = 16$): mixture of 1 cc dextrose 50% and 1 cc of lidocaine 2%. Single injection	Pain (VAS 0–10cm) Function (MOxFQ 16-item) Adverse events Timepoints: baseline, 1, 4 and 8 weeks after injection; verbal completion with researcher
Gomes *et al.* [30] Country: Brazil	RCT Participant blinded	$N = 25$ F/M = 2/23 Mean age 50 years (SD 8) Population: post-traumatic subtalar OA	***Corticosteroid*** ($n = 12$): mixture 2 ml betamethasone dipropionate 5 mg/ml (10 mg) + betamethasone sodium phosphate 2 mg/ml (4 mg) total injected volume 2 ml Single injection repeated weekly for 3 weeks ***Corticosteroid + hyaluronic acid*** ($n = 13$) As per corticosteroid plus 2 ml hyaluronic acid at 10 mg/ml, total injected volume 4 ml Single injection repeated weekly for 3 weeks	Pain (VAS 0–10cm) Function (AOFAS 0–100 scale) Adverse events Timepoints: baseline, 4, 12 24 weeks after third injection; independent assessor

RCT: randomized controlled trial; MTPJ OA: osteoarthritis in the first metatarsophalangeal joint; MOFQ: Manchester-Oxford Foot Questionnaire; CC syringe (23 gauge); AOFAS: American Orthopaedic Ankle-Hindfoot Scale; VAS: visual analogue scale.

Apresentação de dados – Resposta às questões de investigação

Table 2. Findings from included studies

Hadianfard *et al.* [29]	VAS (0–10)[a]				MOxFQ (0–100)[b]			
Timepoint	Corticosteroid Mean (SD)[c]	Prolotherapy Mean (SD)[c]	MD[d]	*P* value	Corticosteroid Mean (SD)[c]	Prolotherapy Mean (SD)[c]	MD[d]	*P* value
Baseline	6.06 (1.34)	5.68 (1.44)	0.38	0.491	49.62 (9.06)	45.37 (7.94)	4.25	0.254
1 week	2.25 (1.41)	2.50 (1.41)	−0.25	0.323	35.37 (8.17)	35.62 (7.78)	−0.25	0.930
4 weeks	2.37 (1.58)	2.68 (1.40)	−0.31	0.305	33.06 (8.29)	33.12 (7.30)	−0.06	1.00
8 weeks	2.68 (1.70)	2.81 (1.37)	−0.13	0.699	33.75 (8.49)	33.12 (7.30)	0.63	0.825
Gomes *et al.* [30]	VAS (0–10)[a]				AOFAS (0–100)[e]			
Timepoint	Corticosteroid Mean (SD)	Corticosteroid + HA Mean (SD)	MD[d]	*P* value	Corticosteroid Mean (SD)	Corticosteroid + HA Mean (SD)	MD[d]	*P* value
Baseline	6.6 (1.5)	6.9 (1.9)	−0.3	0.46	77.2 (12.2)	69.5 (19.4)	7.7	0.31
4 weeks	5.4 (1.8)	3.7 (1.7)	1.7	0.6	86.2 (14.1)	94.1 (10.9)	−7.9	0.04
12 weeks	5.8 (1.9)	2.8 (1.9)	3.0	0.003	76.7 (17.8)	93.3 (12.2)	−16.6	0.01
24 weeks	6.3 (2.1)	2.6 (2.6)	3.7	0.003	76.2 (17.6)	90.6 (19.2)	−14.4	0.02

[a] VAS metric 0–10, where 10 = worse pain possible.
[b] MOxFQ 0–100 metric, where 100 = most severe.
[c] Data not published.
[d] Unadjusted mean difference (MD) calculated by review team.
[e] AOFAS 0–100 metric, where 100 = healthy.
VAS: visual analogue scale; MOxFQ: Manchester-Oxford foot questionnaire; AOFAS: American Orthopaedic Ankle-Hindfoot Scale.

Apresentação de dados – Caracterização estudos e população

Table 2. Baseline comparability (VAS: Visual Analogue Scale, HOS-ADL: Hip Outcome Score-Activities of Daily Living, HOS-SSS: Hip Outcome Score-Sport Specific Subscale). Continuous data are presented as mean value and standard deviation. Dichotomic data are reported as frequency.

Endpoint	Athletes (n = 165)	Non-Athletes (n = 643)	*p*
Mean follow-up (months)	28.8 ± 3.5	25.4 ± 2.9	0.99
Mean age	35.6 ± 1.2	32.7 ± 2.3	0.4
Mean-BMI	23.6 ± 0.6	25.1 ± 1.1	0.2
Women (%)	100% (108 of 108)	95% (556 of 583)	0.7
VAS (mean)	6.8 ± 1.8	6.7 ± 2.0	0.8
HOS-ADL (mean)	66.9 ± 16.6	55.3 ± 18.6	0.3
HOS-SSS (mean)	43.2 ± 20.3	42.1 ± 22.8	0.5

Apresentação de dados – Caracterização estudos e população

Table 1. Overview of the included studies.

Author and Year	Journal	Design	Follow-Up (Months)	Group	Patients (n)	Mean Age	Mean BMI
Ferrer-Rivero et al., 2024 [59]	J ISAKOS	Retrospective	32.4	Athletes	11	32.0	21.7
				Non-Athletes	22	32.0	21.7
Frank et al., 2019 [60]	Orthop J Sports Med	Retrospective	31.2	Athletes	97	36.0	23.8
				Non-Athletes	97	37.8	27.4
Stone et al., 2019 [61]	Arthroscopy	Retrospective	24.0	Non-Athletes	464	31.6	24.6
				Non-Athletes	60	31.6	24.6
				Athletes	47	31.6	24.6
				Athletes	10	31.6	24.6

Apresentação de dados – Resposta às questões de investigação

Table 3. Results of PROMs (VAS: Visual Analogue Scale; HOS-ADL: Hip Outcome Score-Activities of Daily Living, HOS-SSS: Hip Outcome Score-Sport Specific Subscale; MD: mean difference). Data are presented as mean value and standard deviation.

Endpoint	Athletes (n = 165)	Non-Athletes (n = 643)	MD	*p*
VAS	1.5 ± 1.9	2.1 ± 2.4	−0.5	0.7
HOS-ADL	91.6 ± 9.9	74.6 ± 24.0	17.0	0.5
HOS-SSS	82.5 ± 20.4	73.2 ± 27.6	9.3	0.4

Table 4. Results of endpoint rate of reoperation and progression to THA.

Endpoint	Athletes (n = 165)	Non-Athletes (n = 643)	*p*
Reoperation	3.1% (3 of 97)	2.1% (2 of 97)	0.7
Progression to THA	0% (0 of 97)	1.0% (1 of 97)	0.4

Apresentação de dados – Resposta às questões de investigação

Figure 3. Forest plots of this meta-analysis: VAS.

Study or Subgroup	Weight	Mean Difference IV, Random, 95% CI
Frank et al., 2019	35.1%	-2.20 [-2.90, -1.50]
Stone et al., 2019 a	35.5%	0.38 [-0.23, 0.99]
Stone et al., 2019 b	29.3%	-0.08 [-1.67, 1.51]
Total (95% CI)	**100.0%**	**-0.66 [-2.57, 1.24]**

Heterogeneity: $Tau^2 = 2.56$; $Chi^2 = 30.09$, df = 2 ($P < 0.00001$); $I^2 = 93\%$
Test for overall effect: Z = 0.68 (P = 0.50)

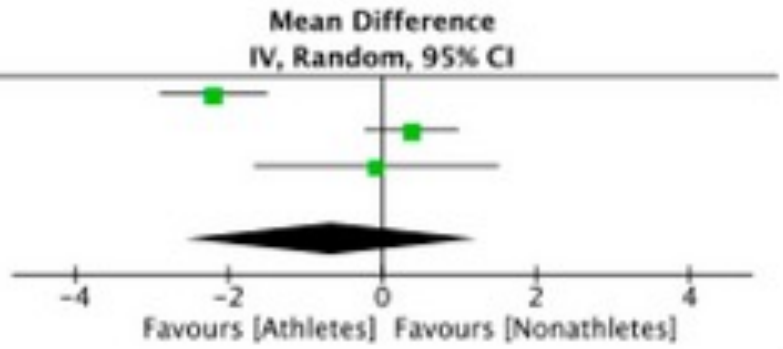
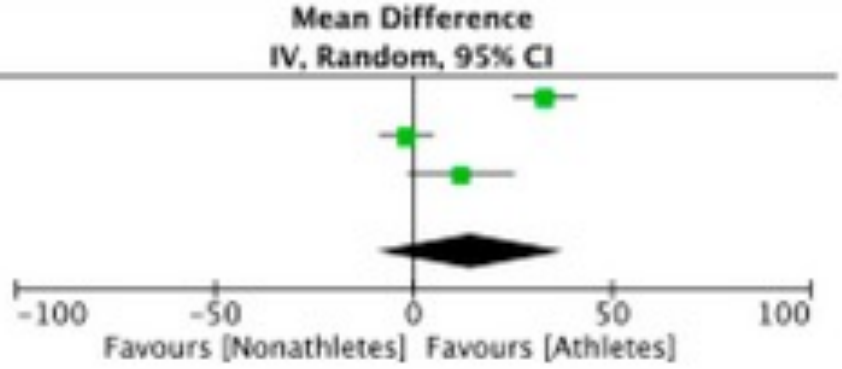


Figure 4. Forest plots of this meta-analysis: HOS-SSS.

Study or Subgroup	Weight	Mean Difference IV, Random, 95% CI
Frank et al., 2019	34.0%	33.00 [25.01, 40.99]
Stone et al., 2019 a	34.3%	-1.80 [-8.71, 5.11]
Stone et al., 2019 b	31.7%	11.90 [-1.67, 25.47]
Total (95% CI)	**100.0%**	**14.37 [-9.30, 38.04]**

Heterogeneity: $Tau^2 = 412.38$; $Chi^2 = 41.69$, df = 2 ($P < 0.00001$); $I^2 = 95\%$
Test for overall effect: Z = 1.19 (P = 0.23)



Life and Health Sciences Research Institute
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Sessão "Avaliação da Qualidade"

Questões

PhD4Moz
Fostering a sustainable platform to support PhD training in Health Sciences in Mozambique

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