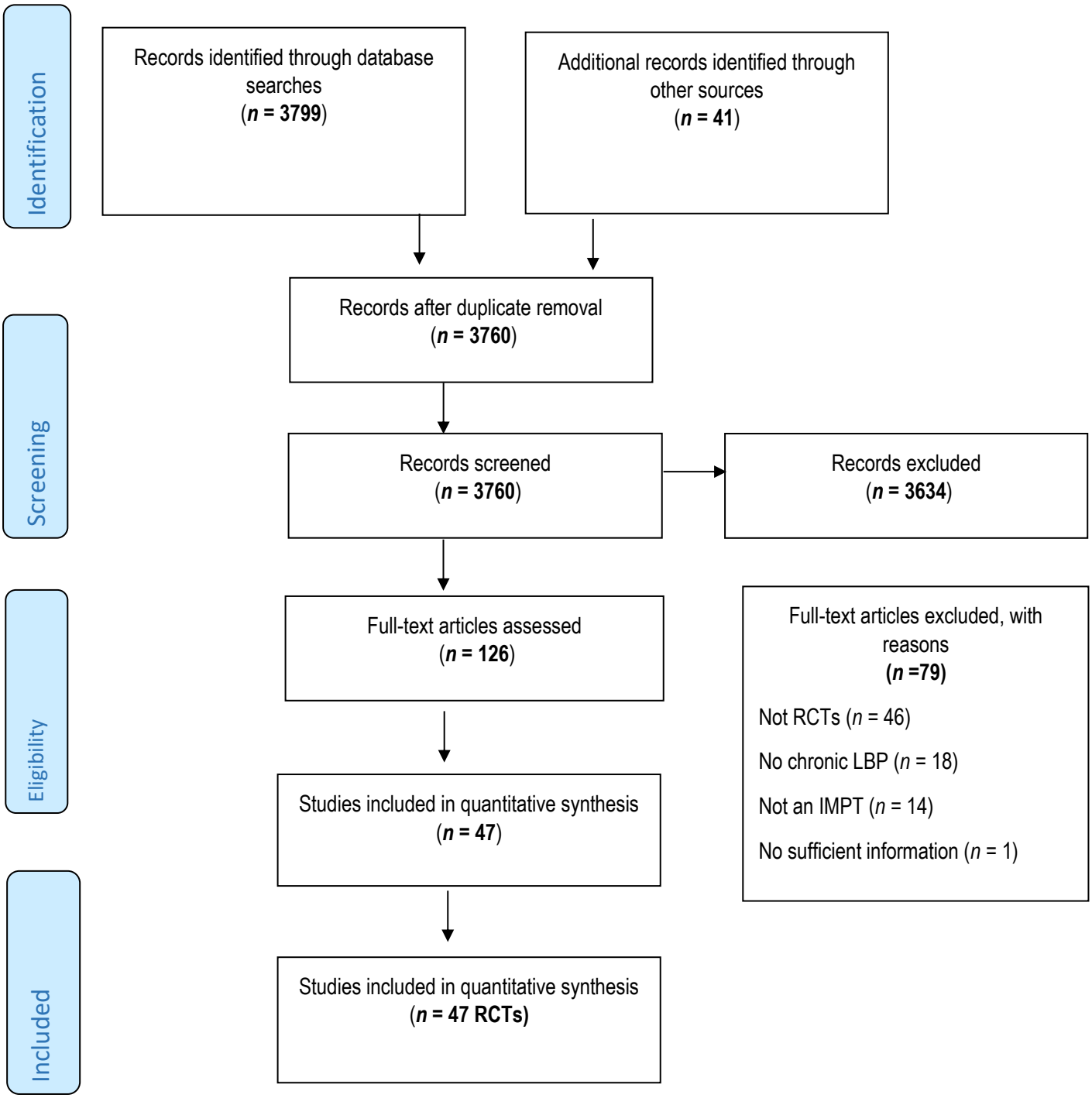

Figure S1. Study flow diagram.

Notes: RCTs = randomized controlled trials, LBP = low back pain, IMPT = interdisciplinary multimodal pain therapy.

Box S1. Search details in PubMed.

((("low back pain"[MeSH Terms] OR ("low"[All Fields] AND "back"[All Fields] AND "pain"[All Fields]) OR "low back pain"[All Fields]) OR (chronic[All Fields] AND ("low back pain"[MeSH Terms] OR ("low"[All Fields] AND "back"[All Fields] AND "pain"[All Fields]) OR "low back pain"[All Fields])) OR LBP[All Fields] OR CLBP[All Fields] OR ("sciatica"[MeSH Terms] OR "sciatica"[All Fields]) OR ("low back pain"[MeSH Terms] OR ("low"[All Fields] AND "back"[All Fields] AND "pain"[All Fields]) OR "low back pain"[All Fields] OR "lumbago"[All Fields]) OR ("spondylosis"[MeSH Terms] OR "spondylosis"[All Fields])) AND ((("pain"[MeSH Terms] OR "pain"[All Fields]) AND ("rehabilitation"[Subheading] OR "rehabilitation"[All Fields] OR "rehabilitation"[MeSH Terms])) OR ("pain management"[MeSH Terms] OR ("pain"[All Fields] AND "management"[All Fields]) OR "pain management"[All Fields] OR ("pain"[All Fields] AND "therapy"[All Fields]) OR "pain therapy"[All Fields]) OR ("combined modality therapy"[MeSH Terms] OR ("combined"[All Fields] AND "modality"[All Fields] AND "therapy"[All Fields]) OR "combined modality therapy"[All Fields]) OR ("interdisciplinary studies"[MeSH Terms] OR ("interdisciplinary"[All Fields] AND "studies"[All Fields]) OR "interdisciplinary studies"[All Fields] OR "multidisciplinary"[All Fields]) OR ("interdisciplinary studies"[MeSH Terms] OR ("interdisciplinary"[All Fields] AND "studies"[All Fields]) OR "interdisciplinary studies"[All Fields] OR "interdisciplinary"[All Fields]) OR multimodal[All Fields] OR (("pain"[MeSH Terms] OR "pain"[All Fields]) AND program[All Fields] AND team[All Fields] AND based[All Fields] AND ("rehabilitation"[Subheading] OR "rehabilitation"[All Fields] OR "rehabilitation"[MeSH Terms])) OR vocational[All Fields]) AND (("randomized controlled trial"[Publication Type] OR "randomized controlled trials as topic"[MeSH Terms] OR "randomized controlled trials"[All Fields] OR "randomised controlled trials"[All Fields]) OR (random[All Fields] OR random'[All Fields] OR random1[All Fields] OR random1y[All Fields] OR randomaized[All Fields] OR randomally[All Fields] OR randomaly[All Fields] OR randomamplified[All Fields] OR randoman[All Fields] OR randomand[All Fields] OR randomate[All Fields] OR randombalance[All Fields] OR randombased[All Fields] OR randomboost[All Fields] OR randombred[All Fields] OR randombreds[All Fields] OR randomc[All Fields] OR randomcoil[All Fields] OR randomcommittee[All Fields] OR randomcontrol[All Fields] OR randomdata[All Fields] OR randomdigit[All Fields] OR randomdock[All Fields] OR randomdot[All Fields] OR randomdouble[All Fields] OR randome[All Fields] OR randomed[All Fields] OR randomeffect[All Fields] OR randomeffects[All Fields] OR randomely[All Fields] OR randomer[All Fields] OR randomesque[All Fields] OR randomezed[All Fields] OR randomferns[All Fields] OR randomforest[All Fields] OR randomforest'[All Fields] OR randomforest4life[All Fields] OR randomforests[All Fields] OR randomforestsrc[All Fields] OR randomforrest[All Fields] OR randomfrog[All Fields] OR randomglm[All Fields] OR randomi[All Fields] OR randomiazed[All Fields] OR randomic[All Fields] OR randomically[All Fields] OR randomicaly[All Fields] OR randomiced[All Fields] OR randomicity[All Fields] OR randomico[All Fields] OR randomided[All Fields] OR randomied[All Fields] OR randomifzed[All Fields] OR randomil[All Fields] OR randomily[All Fields] OR randomin[All Fields] OR randomined[All Fields] OR randomingly[All Fields] OR randominization[All Fields] OR randominzed[All Fields] OR randomirrespective[All Fields] OR randomis[All Fields] OR randomisable[All Fields] OR randomisaion[All Fields] OR randomisatie[All Fields] OR randomisation[All Fields] OR randomisation'[All Fields] OR randomisations[All Fields] OR randomisationsecondary[All Fields] OR

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Table S1. Risk of bias (RoB) according to the Cochrane Back Review Group criteria.

Author, year	Random sequence generation	Allocation concealment	Blinding of participants	Blinding of clinicians	Blinding of outcome assessment	Incomplete outcome data	Intention to treat analysis	Selective reporting	Comparability of groups at baseline	Compliance	Cointerventions	Timing of assessment	RoB Assessment
Abbassi, 2012	1	2	3	3	3	1	1	2	1	1	2	1	Low risk
Alaranta, 1994	2	2	3	3	3	1	2	2	1	2	2	1	High risk
Basler, 1997	1	2	3	3	3	3	2	2	1	2	2	1	High risk
Bendix, 1996/1998	1	2	3	3	3	1	2	2	1	2	2	1	High risk
Bendix, 1995/1998	1	2	3	3	3	1	2	2	1	1	2	2	High risk
Bendix, 2000	1	2	3	3	3	1	1	2	1	2	2	1	High risk
Coole, 2013	2	2	3	3	3	3	2	2	1	3	2	1	High risk
Fairbank, 2005	1	2	3	3	3	1	1	2	1	2	1	1	Low risk
Harkapaa, 1989	2	2	3	3	3	1	2	2	1	3	2	1	High risk
Hellum, 2011	1	1	3	3	3	1	1	2	3	2	2	1	High risk
Henchoz, 2010	1	1	3	3	3	3	1	2	1	2	2	1	High risk
Jackel, 1990	2	2	3	3	3	2	2	2	1	2	2	1	High risk
Jousset, 2004	1	2	3	3	3	1	2	2	1	2	2	1	High risk
Kaapa, 2006	1	1	3	3	3	1	1	2	1	2	2	1	Low risk
Kole-Snijders, 1999	1	1	3	3	3	3	1	2	3	1	2	1	High risk
Kool, 2007	1	2	3	3	3	1	1	2	1	1	1	1	Low risk
Lambeek, 2010	1	1	3	3	3	1	1	3	1	3	2	1	Low risk
Leeuw, 2008	1	1	3	3	3	1	1	2	1	3	1	1	Low risk
Linton, 2005	1	2	3	3	3	3	1	2	1	1	3	1	High risk
Lukinmaa, 1989	2	2	3	3	3	1	2	2	1	2	2	1	High risk
Mangels, 2009	1	1	3	3	3	1	1	2	1	2	2	1	Low risk
Meng, 2011	1	1	3	3	3	1	2	2	1	2	2	1	High risk
Mitchell, 1994	2	2	3	3	3	2	2	2	2	2	2	1	High risk

Moix, 2003	1	2	3	3	3	1	2	2	1	2	2	1	High risk
Monticone, 2013	1	1	3	3	3	1	1	2	1	2	2	1	Low risk
Morone, 2011	2	1	3	3	3	1	3	2	1	2	2	1	High risk
Morone, 2012	1	1	3	3	3	1	1	2	2	2	2	1	High risk
Nicholas, 1991	2	1	3	3	3	3	2	2	2	2	2	1	High risk
Nicholas, 1992	2	1	3	3	3	1	2	2	2	2	2	1	High risk
Roche, 2007/2011	1	1	3	3	3	1	2	2	1	1	2	1	Low risk
Schweikert, 2006	1	1	3	3	3	3	2	2	2	2	2	1	High risk
Skouen, 2002	1	1	3	3	3	1	2	2	2	2	1	1	High risk
Smeets, 2006/2008	1	1	3	3	3	1	1	2	1	1	1	1	Low risk
Strand, 2001	1	1	3	3	3	3	2	2	1	2	2	1	High risk
Streibelt, 2009	1	1	3	3	3	3	1	2	3	2	2	1	High risk
Tavafian 2008	2	3	3	3	3	3	2	2	1	2	1	1	High risk
Tavafian 2011	1	1	3	3	3	1	3	1	1	2	2	1	Low risk
Turner, 1990	2	2	3	3	3	3	3	2	1	2	2	1	High risk
Van den Hout, 2003	1	1	3	3	3	3	2	2	3	2	2	1	High risk
Vollenbroek-Hutten, 2004	1	1	3	3	3	1	2	2	1	2	1	1	Low risk
Von Korff, 2005	2	2	3	3	3	1	2	2	1	2	2	1	High risk
Tavafian 2017	1	1	3	3	3	1	3	1	1	2	2	1	Low risk
Tavafian 2017	1	1	3	3	3	1	3	1	1	2	2	1	Low risk
Tavafian 2014	2	3	3	3	3	3	2	2	1	2	1	1	High risk
Monticone, 2014	1	1	3	3	3	1	1	2	1	2	2	1	Low risk
Altmaier, 1992	3	3	3	3	3	1	3	1	1	3	1	1	High risk
Corey, 1996	2	1	1	3	3	3	3	1	1	2	2	1	High risk

Ratings of "1" indicate the study has a low RoB on that criteria; ratings of "2" indicate uncertain RoB on that criteria; ratings of "3" indicate high RoB on that criteria; RoB = risk of bias. Studies satisfying at least six of the 12 criteria and having no having no serious flaws (e.g., 80% drop-out rate in one group) were considered as "low" risk of bias. Studies with serious flaws, or those in which fewer than six of the criteria are met were considered as having a "high" risk of bias.

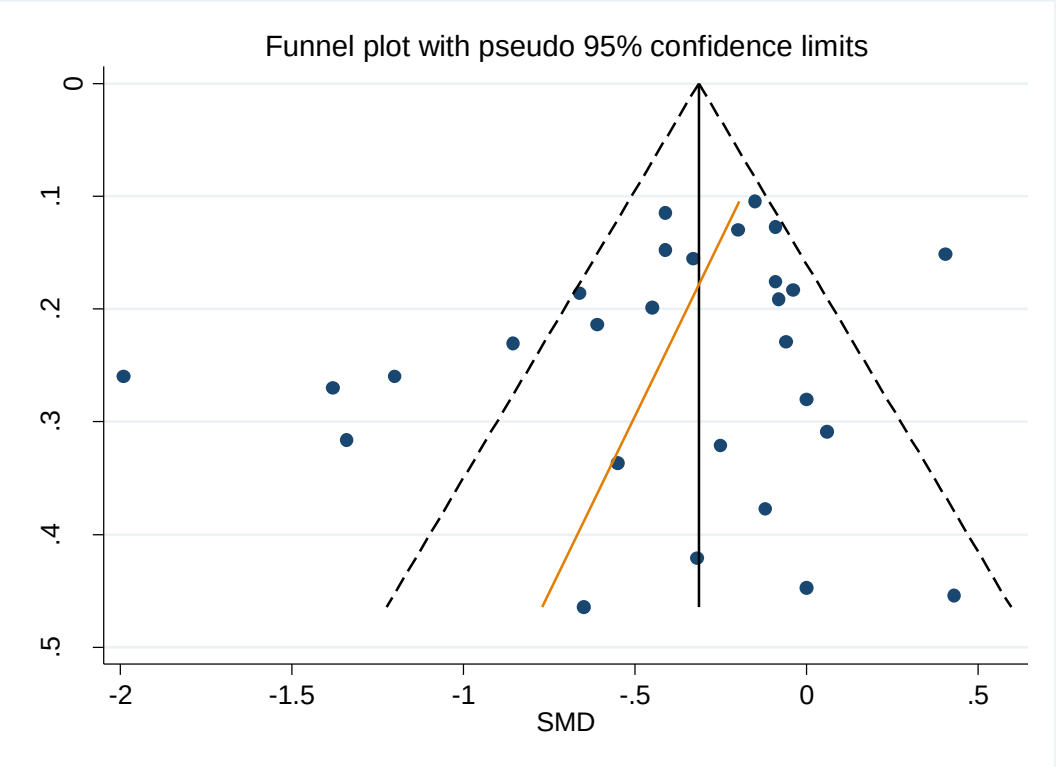

Figure S2. Funnel plot for the pain outcome. Egger's test for publication bias was not significant (p = 0.141).

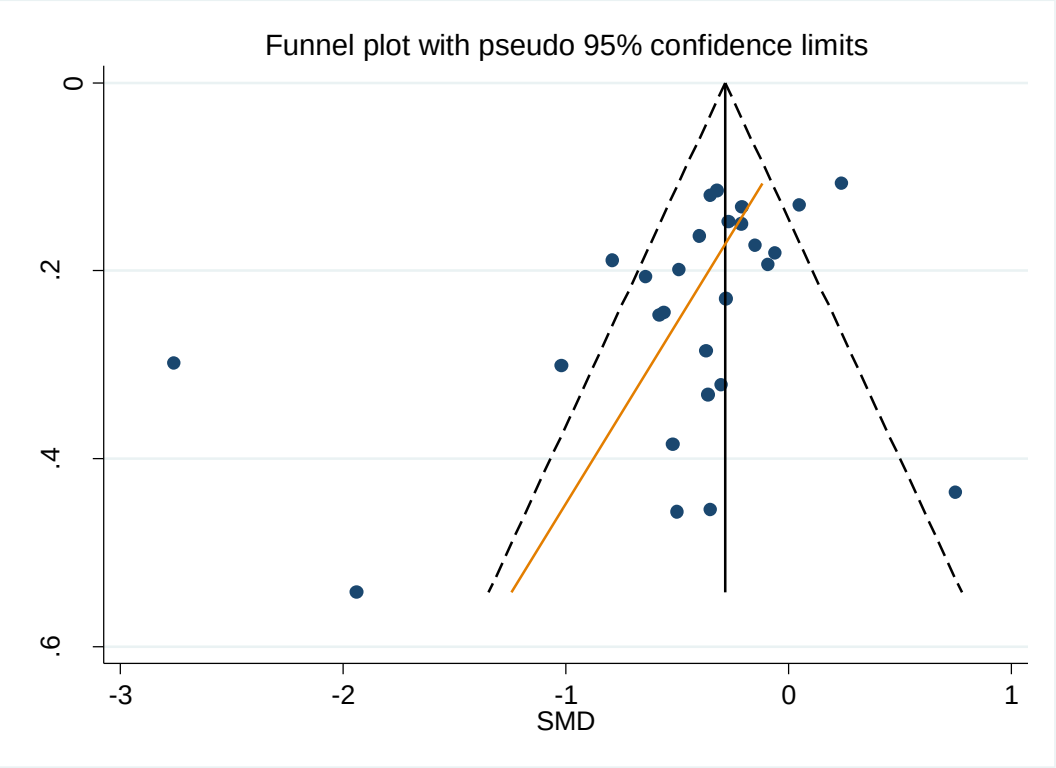

Figure S3. Funnel plot for the disability outcome. Egger's test for publication bias was significant (p = 0.018).

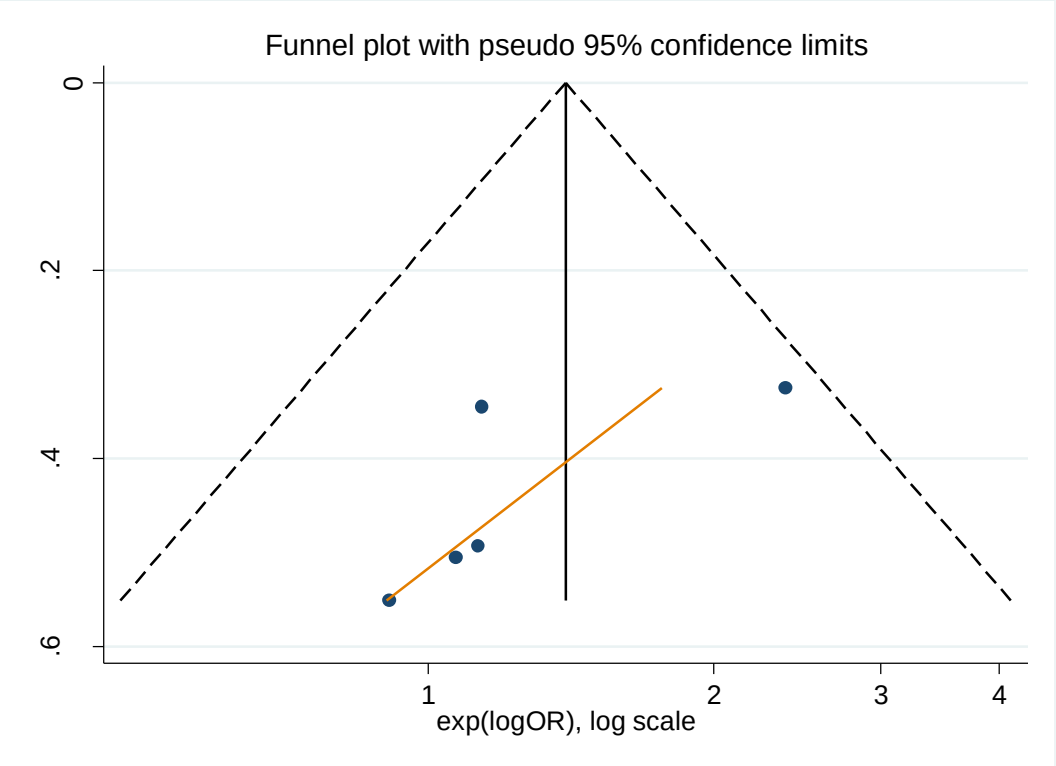

Figure S4. Funnel plot for the return to work outcome. Egger's test for publication bias was not significant (p = 0.141).

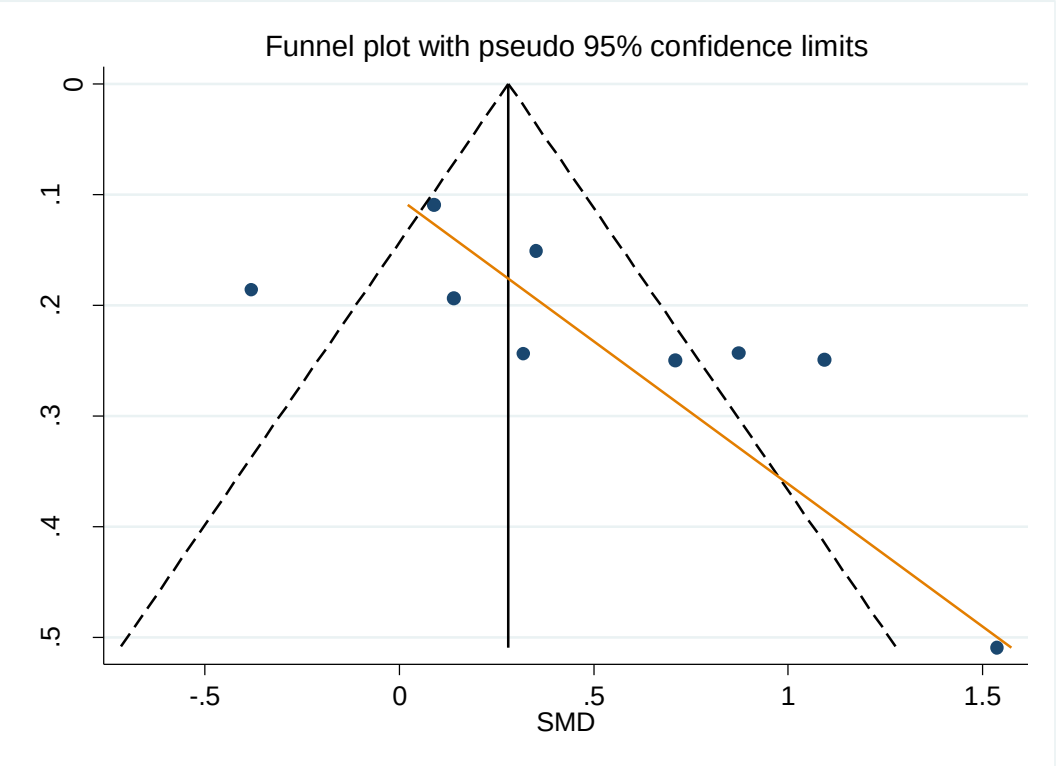

Figure S5. Funnel plot for the quality of life outcome. Egger's test for publication bias was significant (p = 0.060).

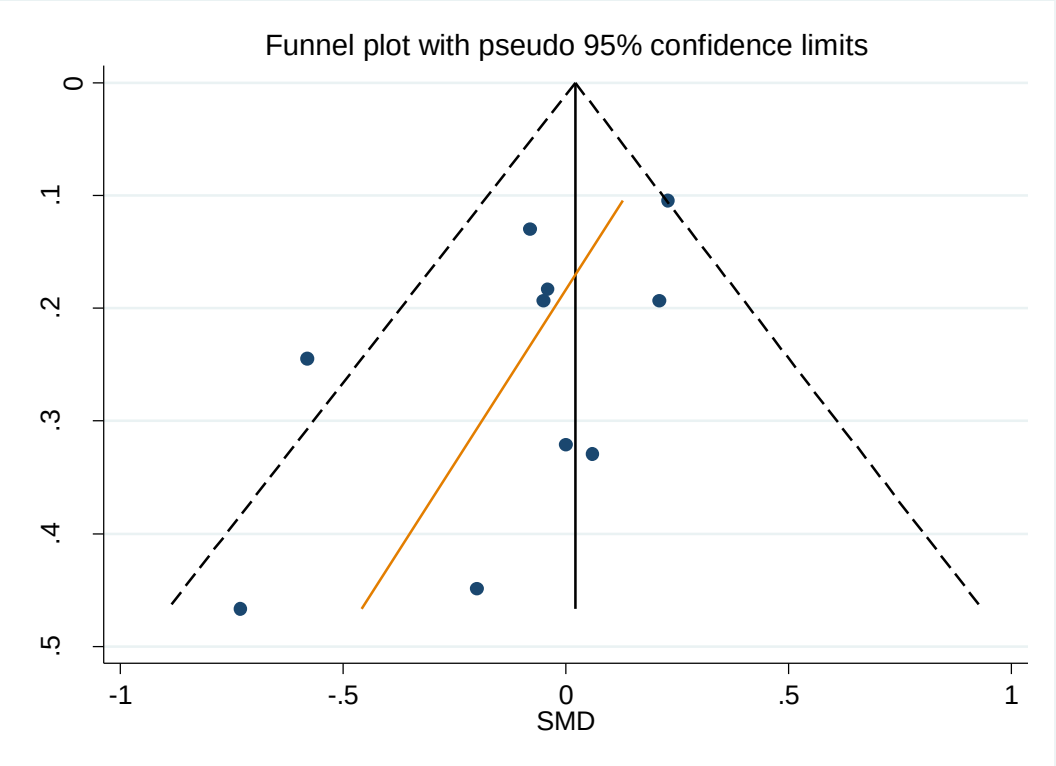

Figure S6. Funnel plot for the depression outcome. Egger's test for publication bias was significant (p = 0.081).

Table S2. Results of the meta-regression analyses of potential moderators of the six examined outcomes.

	Estimate	SE	t	p-value
Outcome 1: Pain				
Length of treatment (total duration in weeks)	−0.27	0.33	−0.81	0.430
Contact (daily contact)	−0.02	0.41	−0.05	0.963
Intensity (total hours per week)	−0.20	0.44	−0.45	0.655
Age	−0.04	0.03	−1.31	0.207
Gender (female)	0.33	0.29	1.13	0.273
Type of Control (active)	0.25	0.26	0.26	0.336
RoB assessment (low risk of bias)	−0.00	0.20	−0.01	0.996
Outcome 2: Disability				
Length of treatment (total duration in weeks)	−0.02	0.04	−0.37	0.719
Contact (daily contact)	−0.01	0.01	−1.28	0.218
Intensity (total hours per week)	0.01	0.01	1.44	0.168
Age	−0.02	0.03	−0.73	0.475
Gender (female)	0.92	0.55	1.65	0.118
Type of Control (active)	−0.13	0.31	−0.42	0.679
RoB assessment (low risk of bias)	−0.12	0.24	−0.51	0.613
Outcome 3: Return to work				
Length of treatment (total duration in weeks)	−0.04	0.17	−0.23	0.830
Contact (daily contact)	−0.01	0.01	−0.41	0.709
Intensity (total hours per week)	0.00	0.02	0.23	0.832
Age	−0.03	0.07	−0.50	0.653
Gender (female)	0.30	0.21	1.47	0.216
Type of Control (active)	0.09	0.46	0.20	0.862
RoB assessment (low risk of bias)	0.55	0.37	1.48	0.235
Outcome 4: Quality of life				
Length of treatment (total duration in weeks)	−0.06	0.06	−0.97	0.363
Contact (daily contact)	−0.01	0.00	−2.31	0.054
Intensity (total hours per week)	−0.01	0.00	−2.19	0.065
Age	0.01	0.03	0.25	0.816
Gender (female)	0.24	0.46	0.53	0.617
Type of Control (active)	−0.47	0.47	−1.00	0.356
RoB assessment (low risk of bias)	−0.33	0.40	−0.82	0.437
Outcome 5: Depression				

Length of treatment (total duration in weeks)	−0.10	.06	−1.61	0.249
Contact (daily contact)	0.00	0.00	2.25	0.154
Intensity (total hours per week)	−0.09	0.04	−2.41	0.138
Age	0.34	0.16	2.17	0.162
Gender (female)	5.83	2.60	2.24	0.154
Type of Control (active)	0.18	0.23	0.78	0.516
RoB assessment (low risk of bias)	0.08	0.19	0.47	0.654
Outcome 6: Anxiety				
Length of treatment (total duration in weeks)	NA	NA	NA	NA
Contact (daily contact)	NA	NA	NA	NA
Intensity (total hours per week)	NA	NA	NA	NA
Age	NA	NA	NA	NA
Gender (female)	NA	NA	NA	NA
Type of Control (active)	NA	NA	NA	NA
RoB assessment (low risk of bias)	NA	NA	NA	NA

RoB = risk of bias, SE = standard error, NA = not applicable.

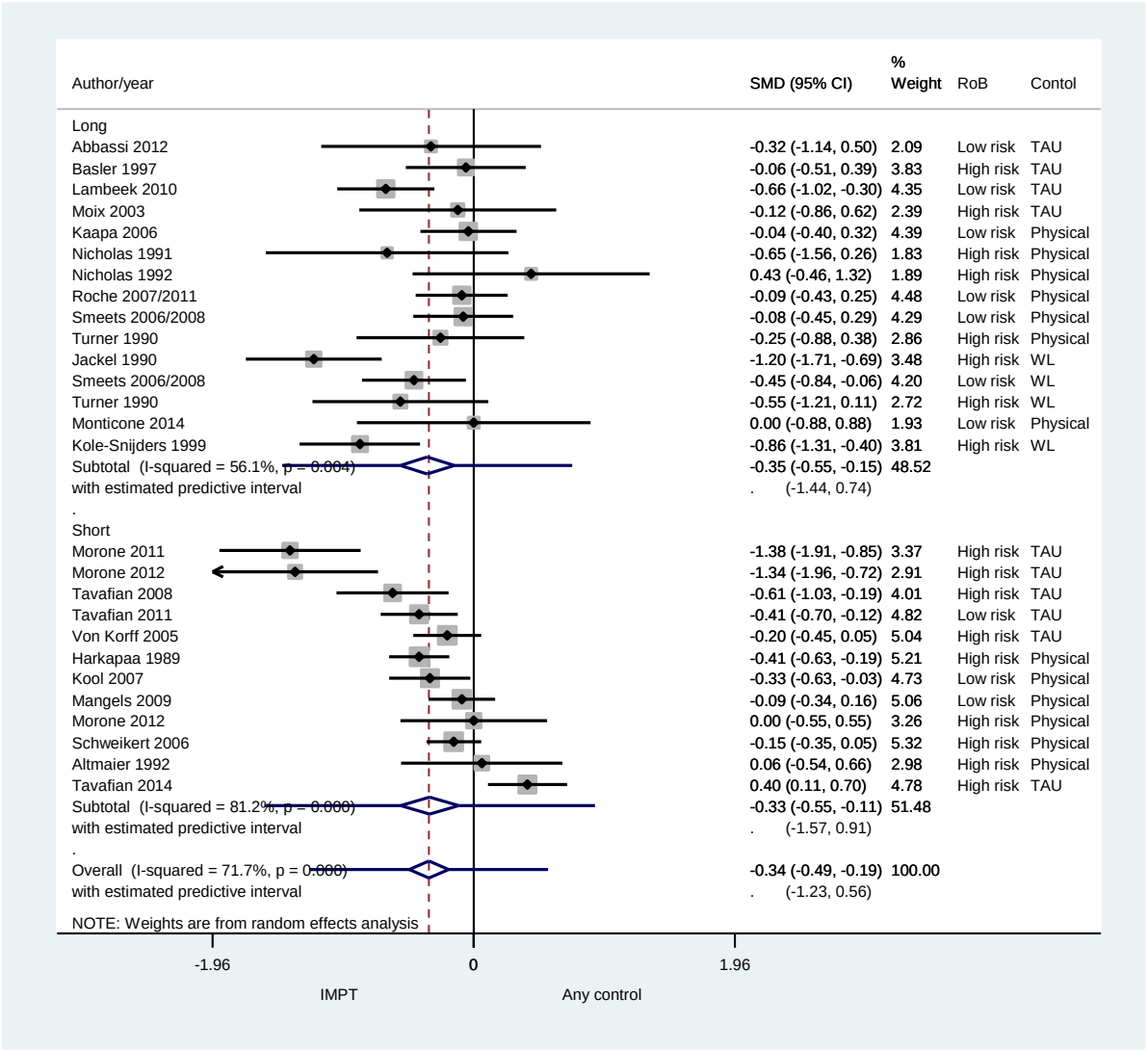

Figure S7. Sensitivity analysis by length for the pain outcome, after excluding the study of Moticone et al. (2013/2014).

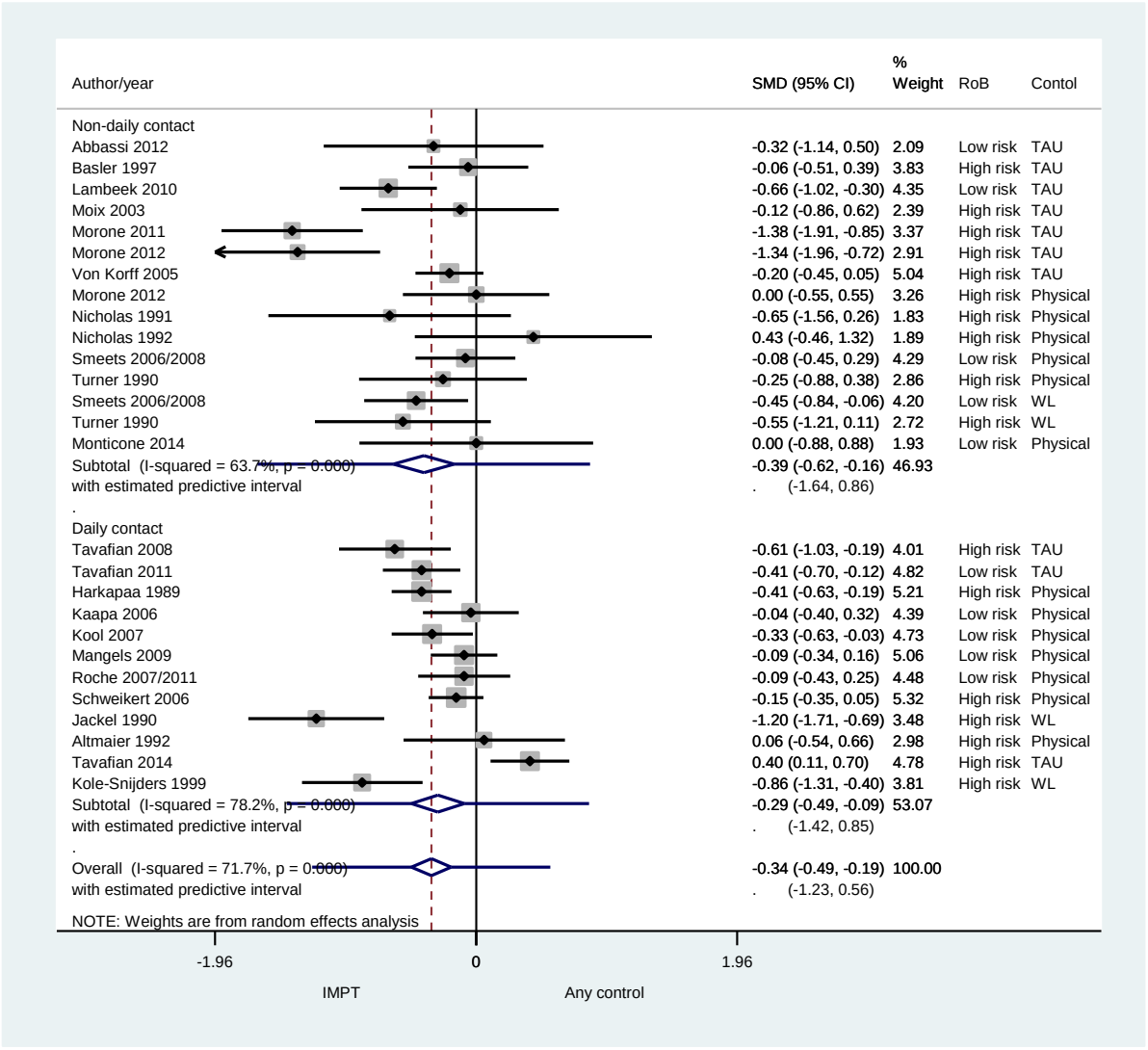

Figure S8. Sensitivity analysis by contact for the pain outcome, after excluding the study of Moticone et al. (2013/2014).

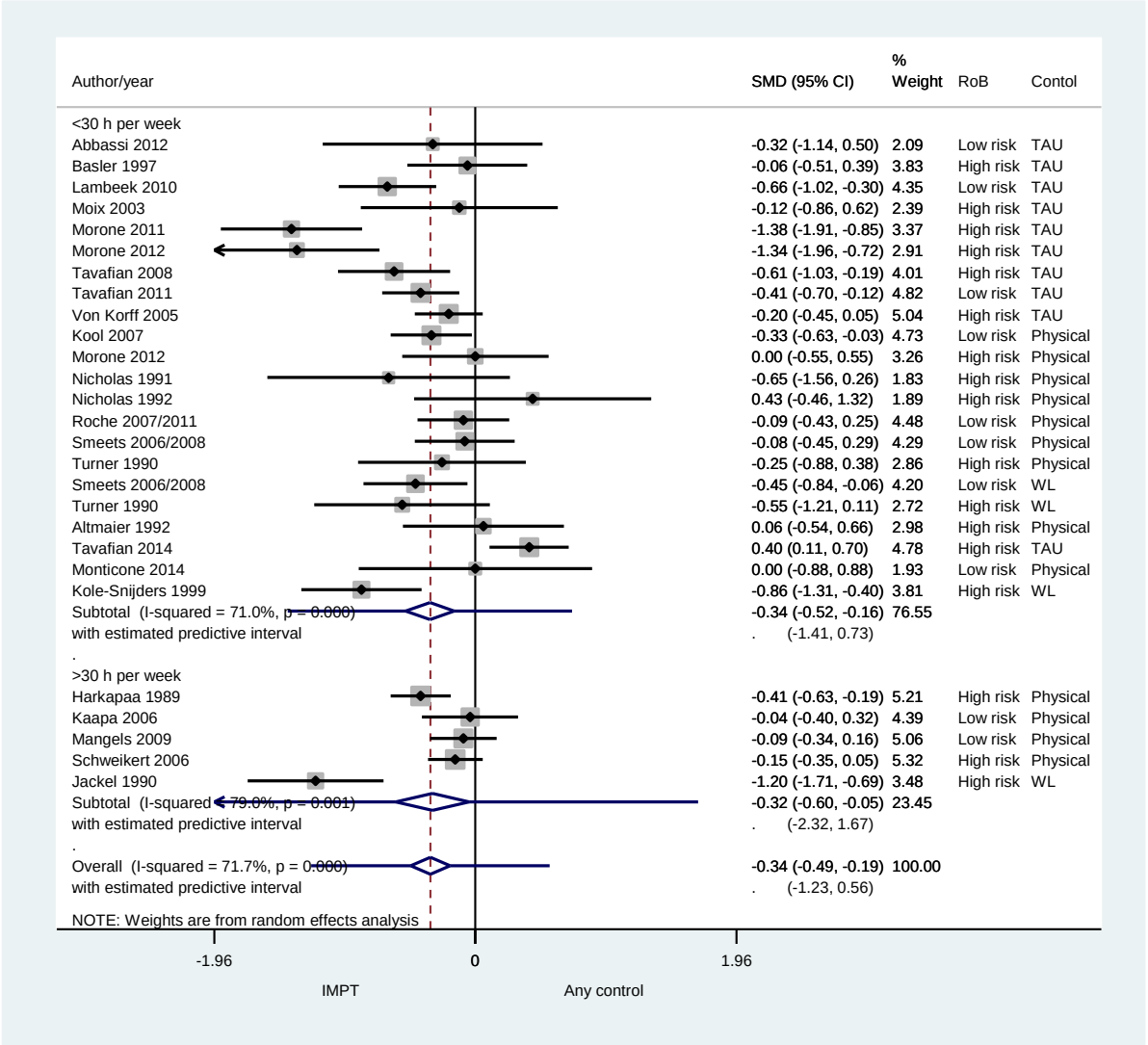

Figure S9. Sensitivity analysis by intensity for the pain outcome, after excluding the study of Moticone et al. (2013/2014).

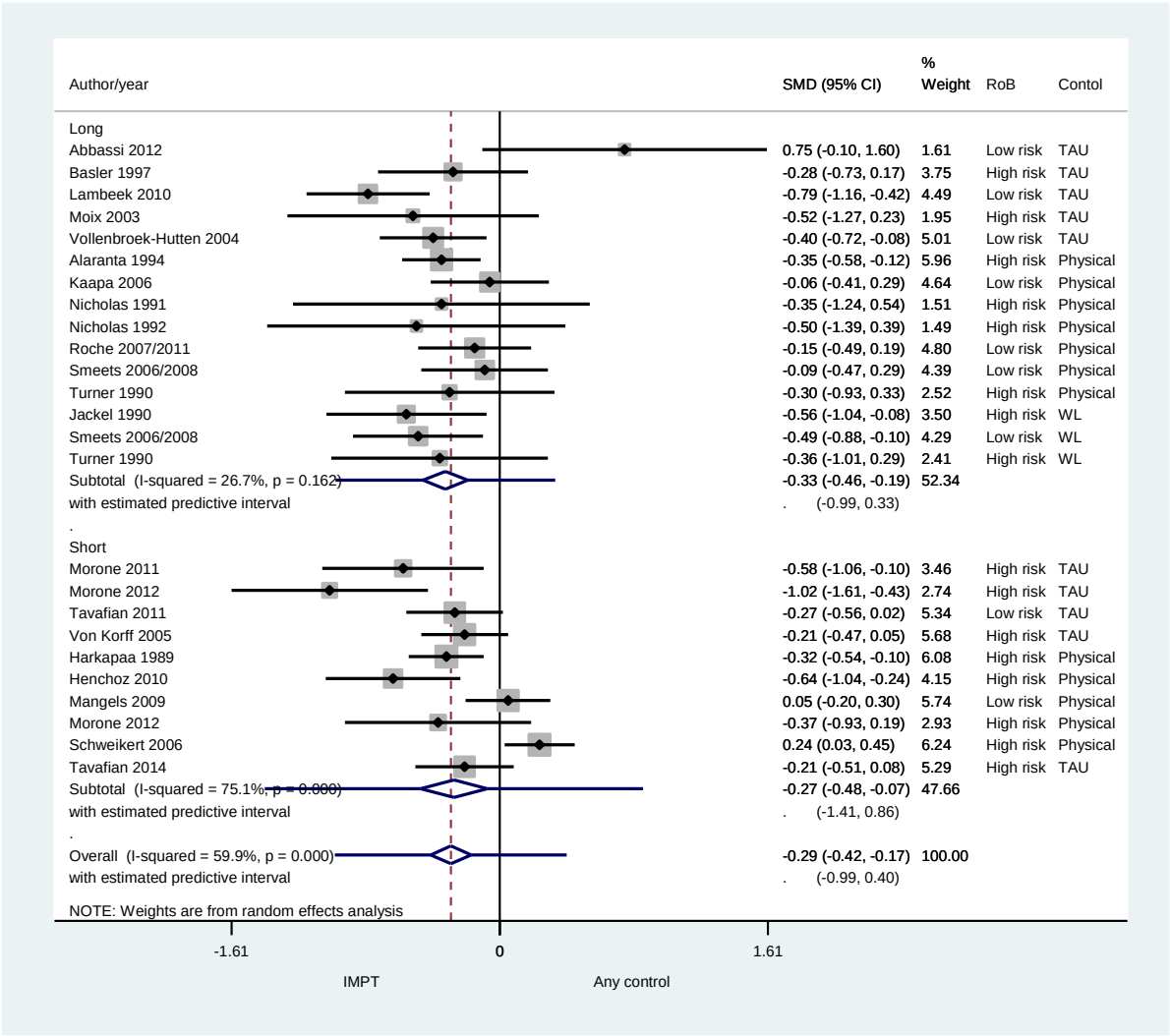

Figure S10. Sensitivity analysis by length for the disability outcome, after excluding the study of Moticone et al. (2013/2014).

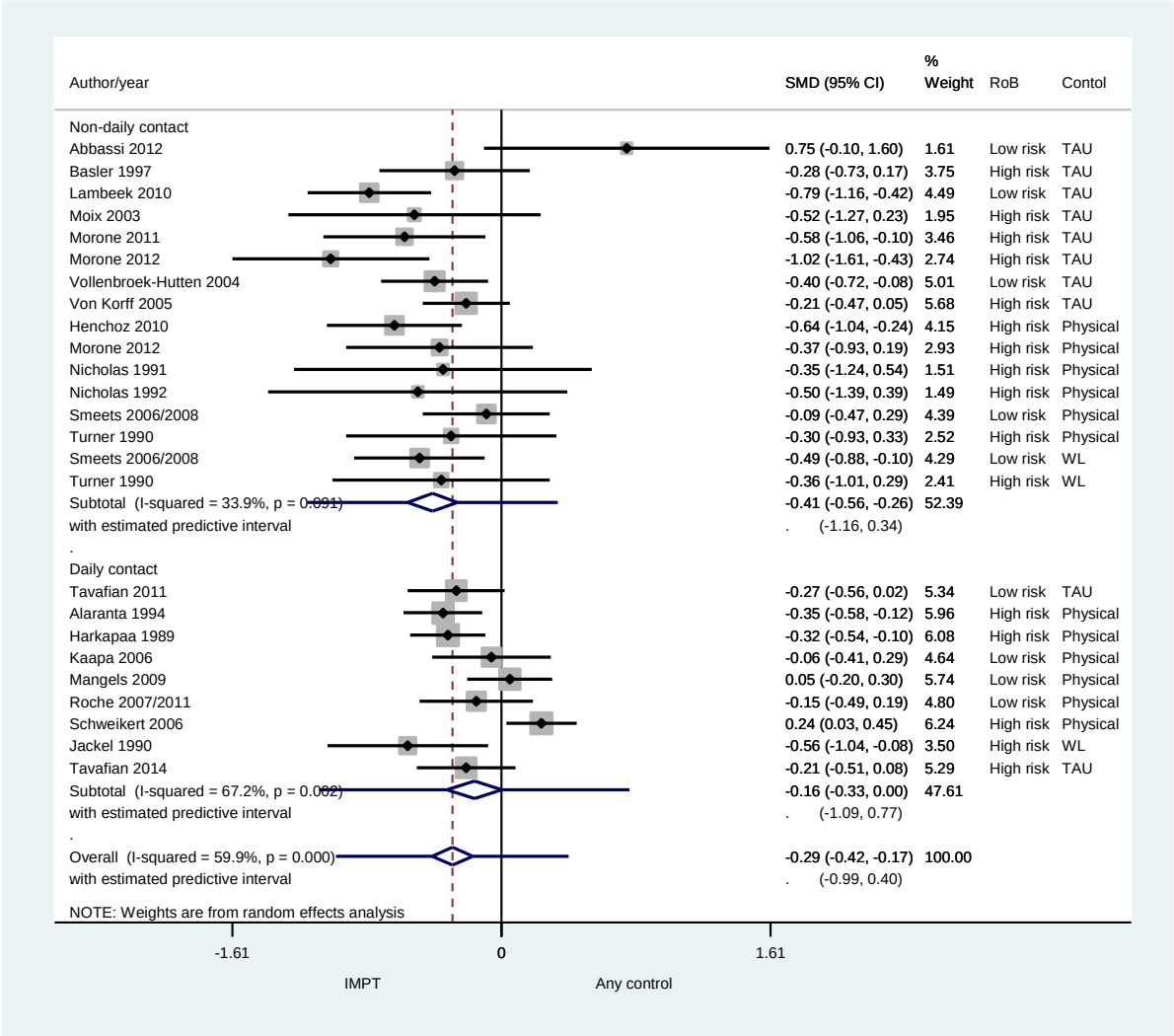

Figure S11. Sensitivity analysis by contact for the disability outcome, after excluding the study of Moticone et al. (2013/2014).

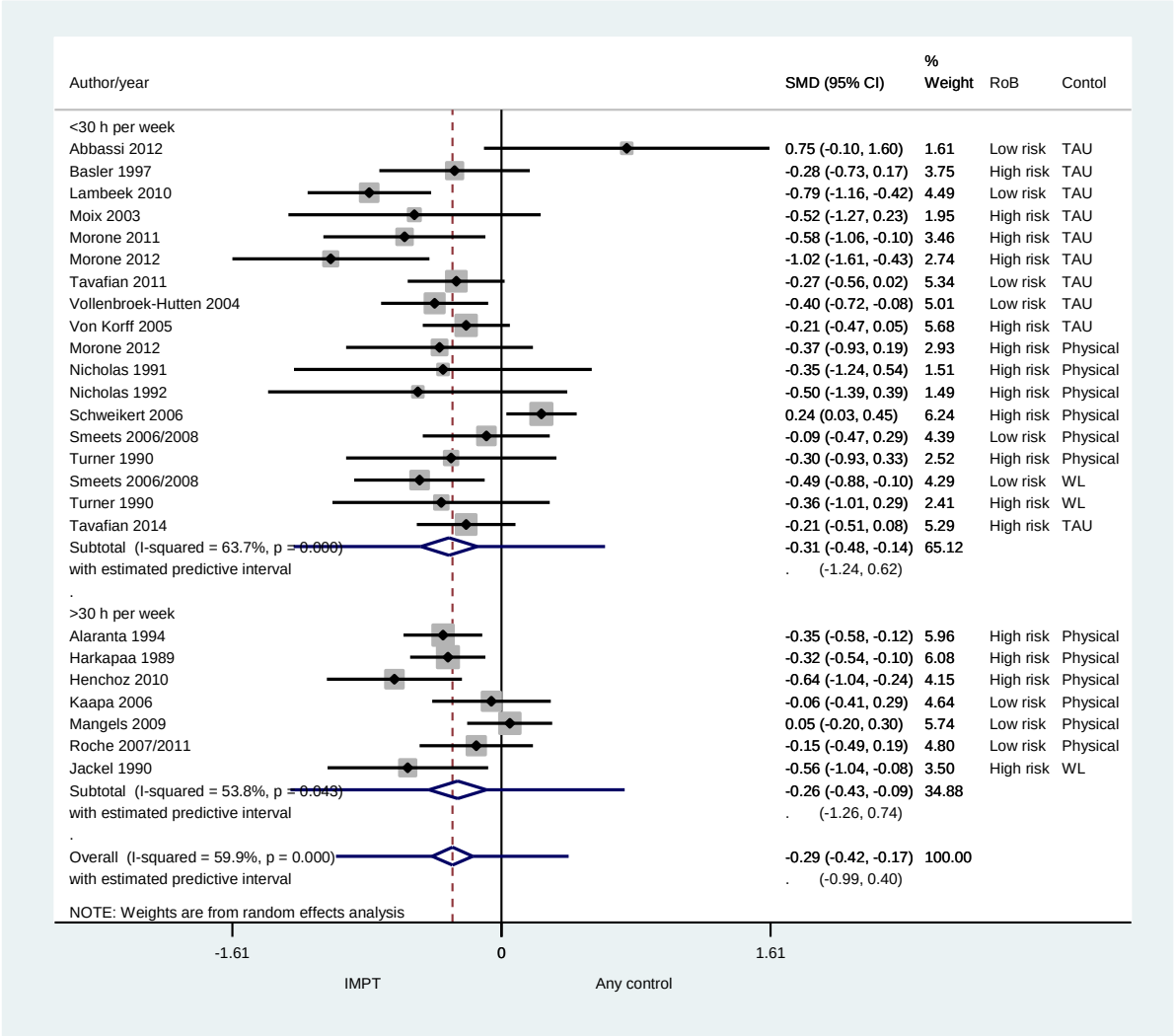

Figure S12. Sensitivity analysis by intensity for the disability outcome, after excluding the study of Moticone et al. (2013/2014).

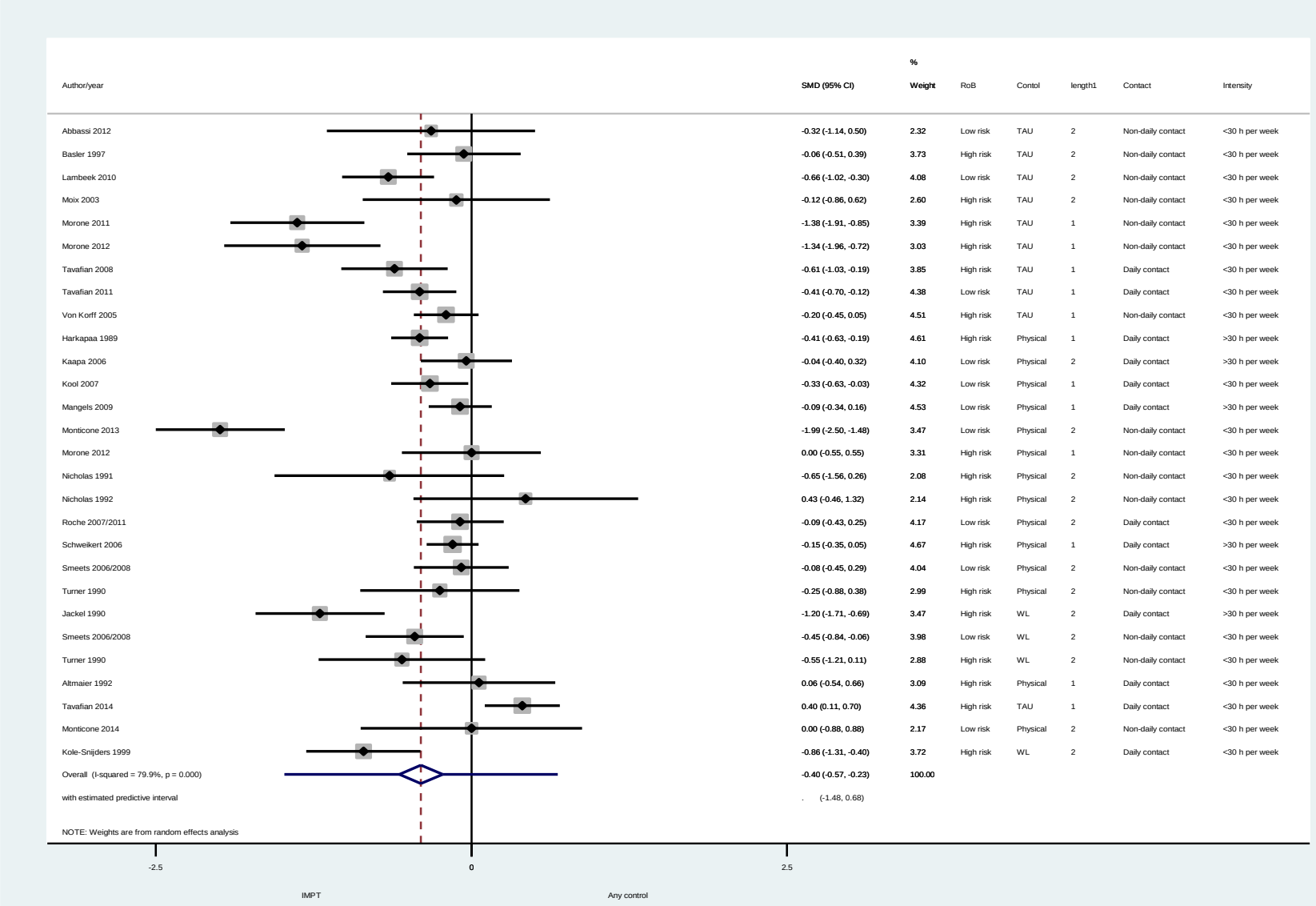

Figure S13. Forest plot for the pain outcome all studies included.

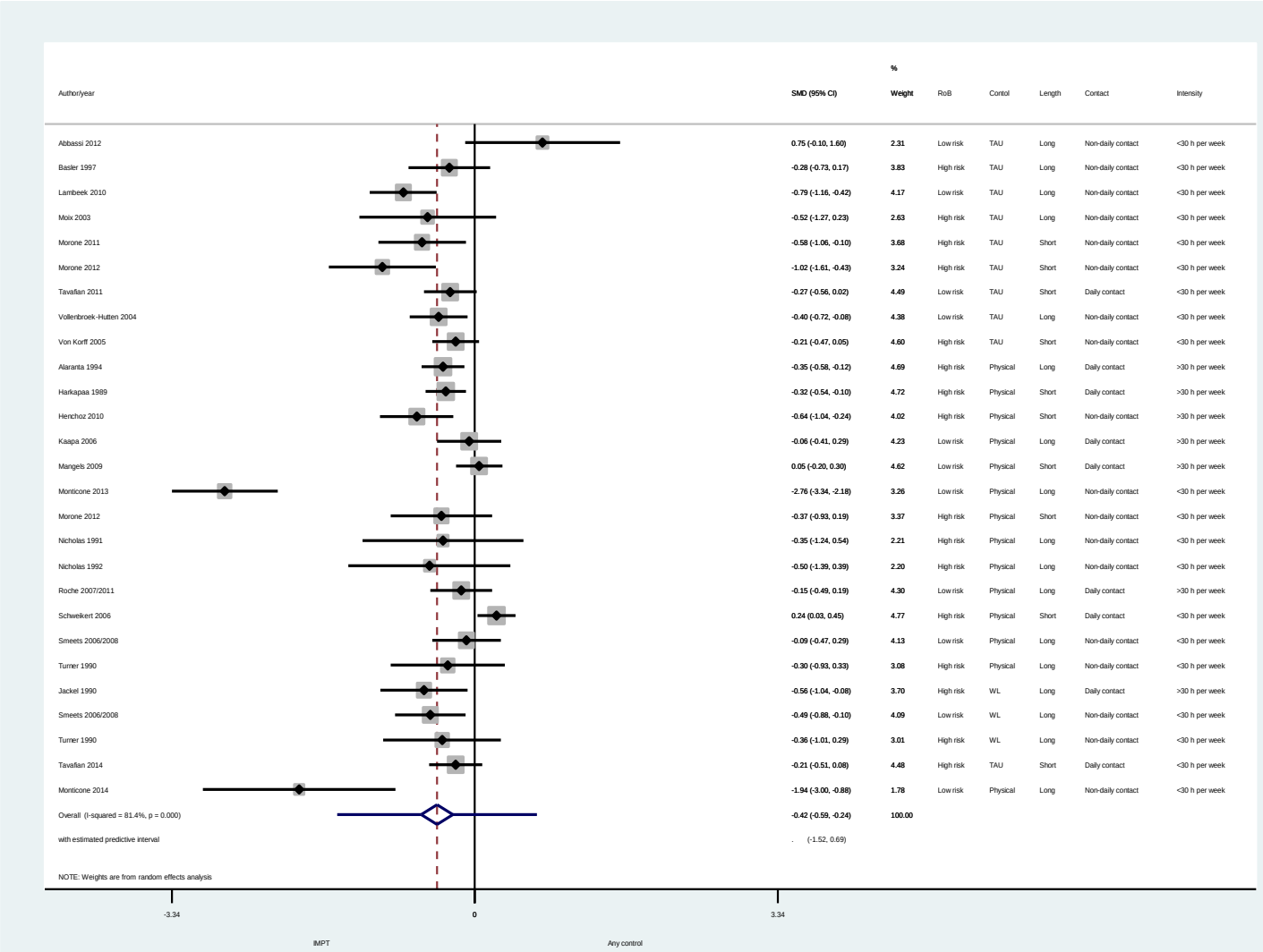

Figure S14. Forest plot for the disability outcome all studies included.

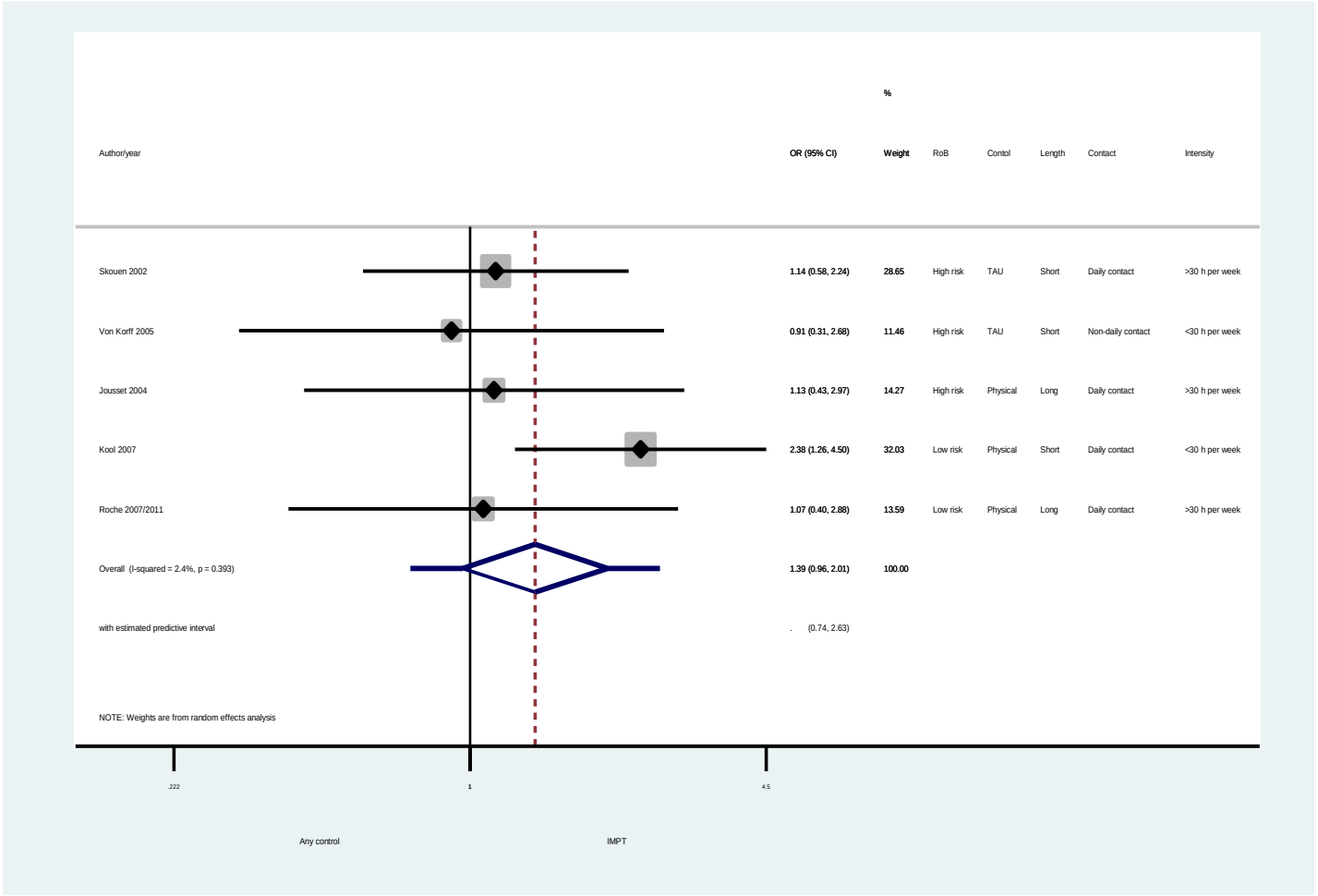

Figure S15. Forest plot for the return to work outcome all studies included.

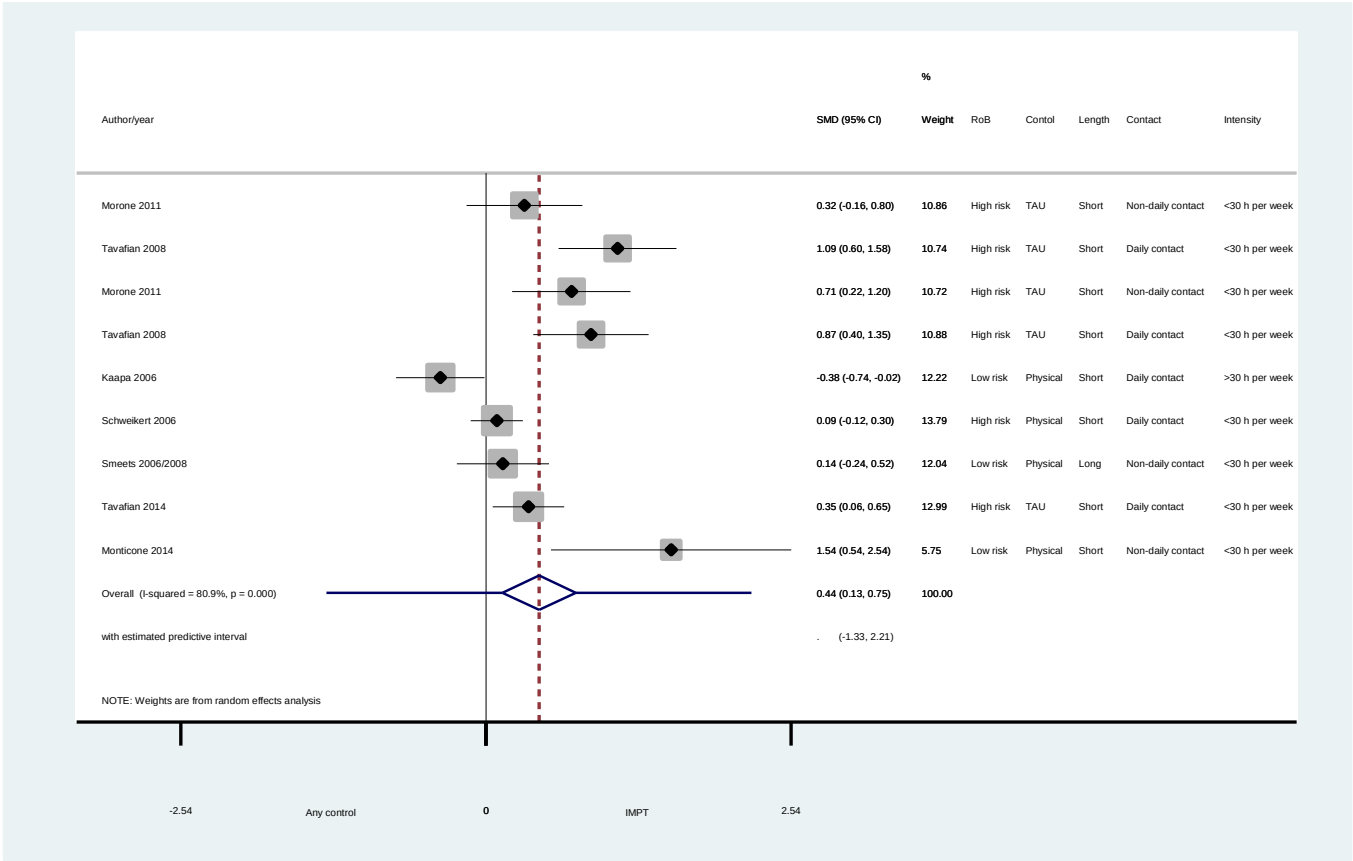

Figure S16. Forest plot for the quality of life outcome all studies included.

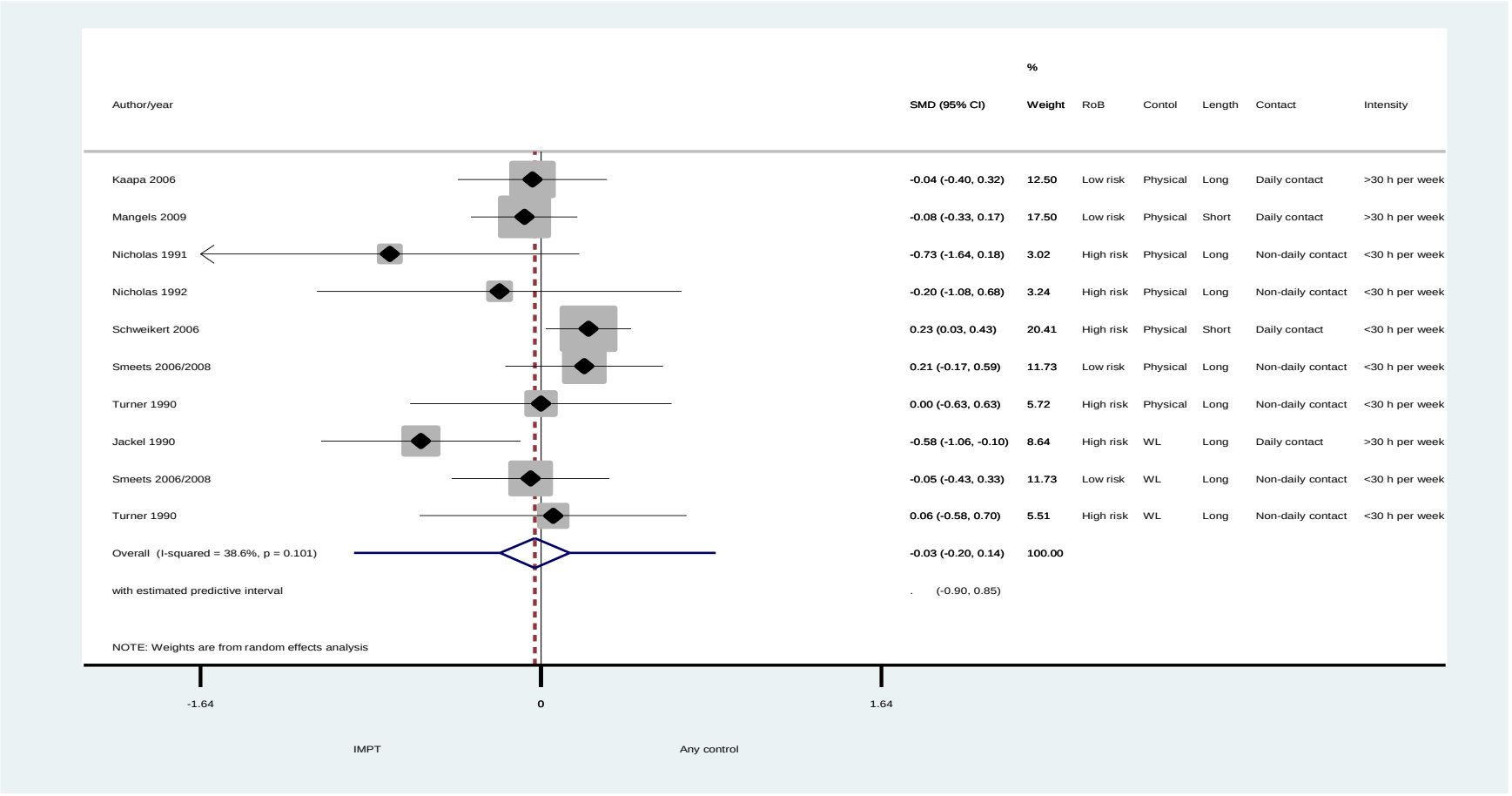

Figure S17. Forest plot for the depression outcome all studies included.

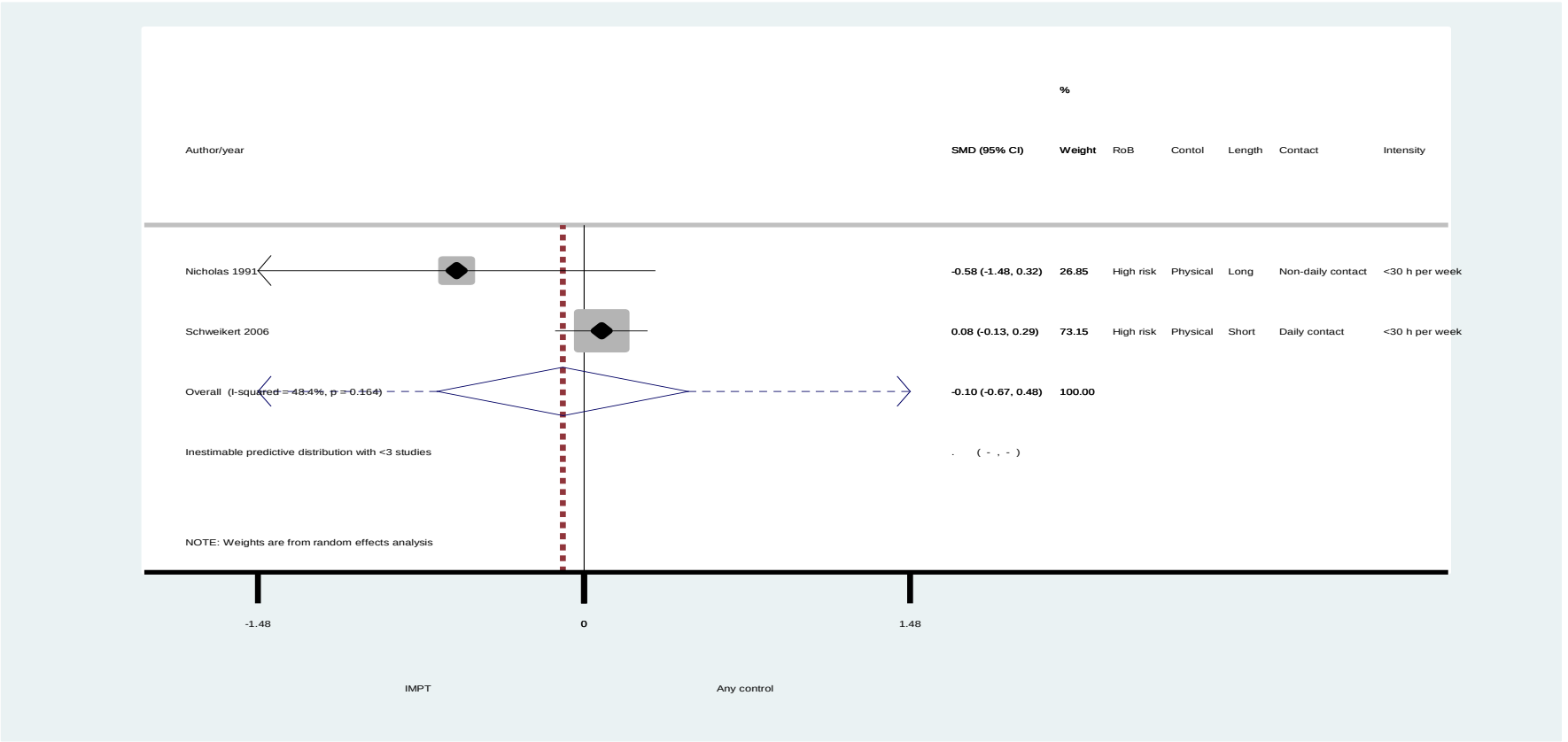

Figure S18. Forest plot for the anxiety outcome all studies included.

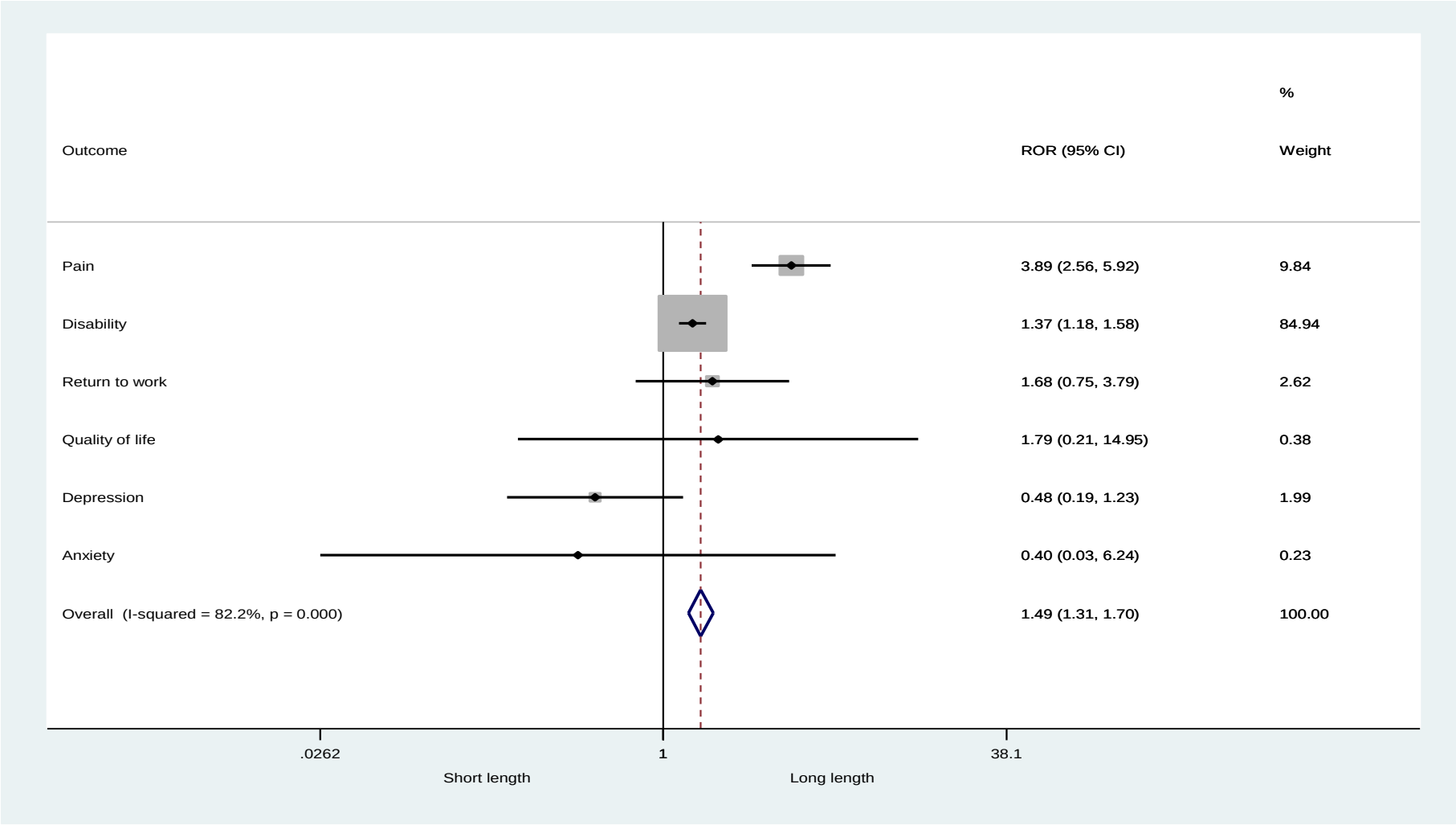

Figure S19. The relative odds ratios (RORs) and 95% confidence intervals (CIs) for each outcome at short term of a short-length treatment vs. long-length treatment. The RORs were calculated with a fixed-effect model. A ROR >1 favours long length; a ROR <1 favours short length.

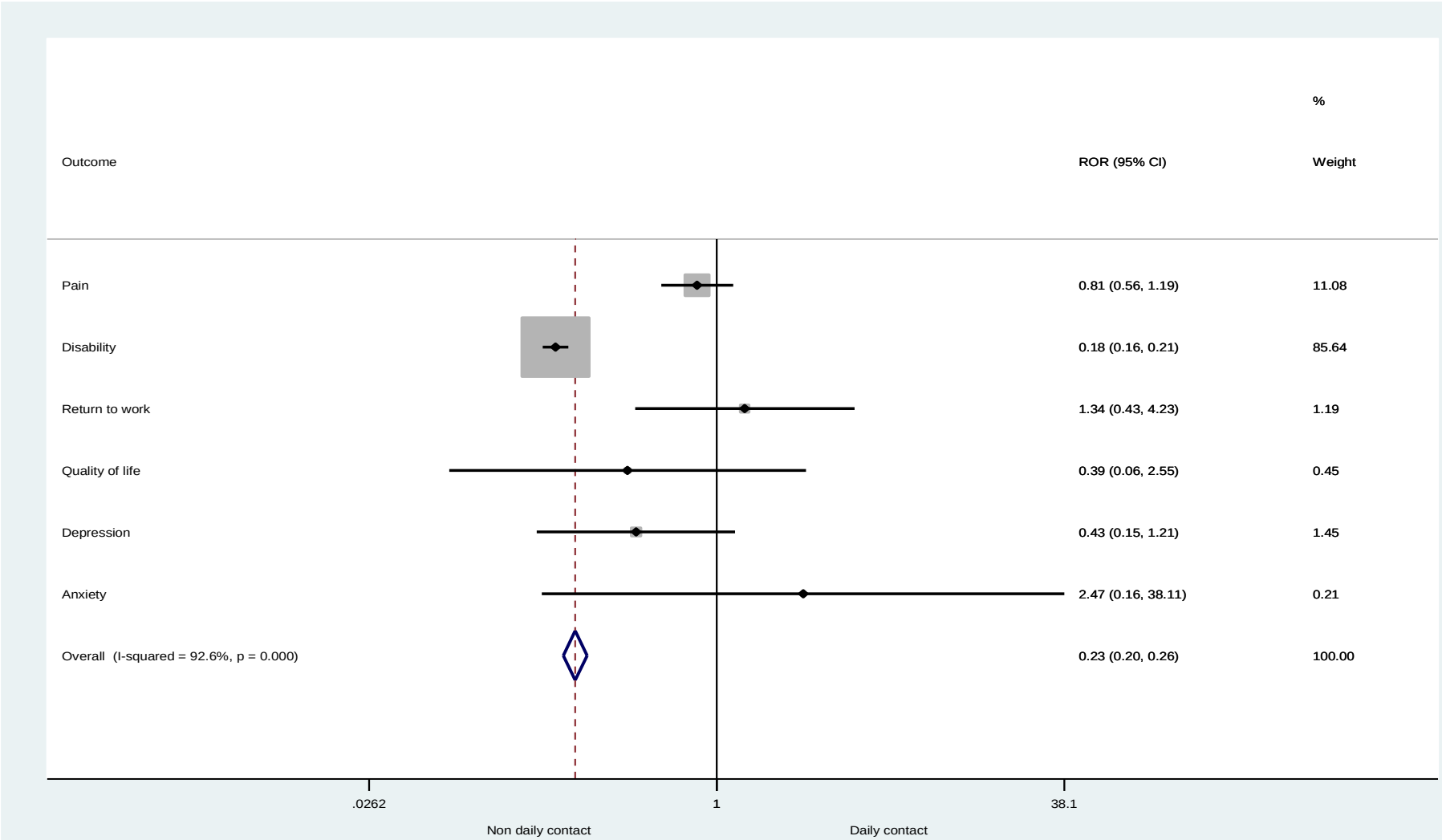

Figure S20. The relative odds ratios (RORs) and 95% confidence intervals (CIs) for each outcome at short term of a non-daily contact vs. daily contact. The RORs were calculated with a fixed-effect model. A ROR >1 favours daily contact; a ROR <1 favours non-daily contact.

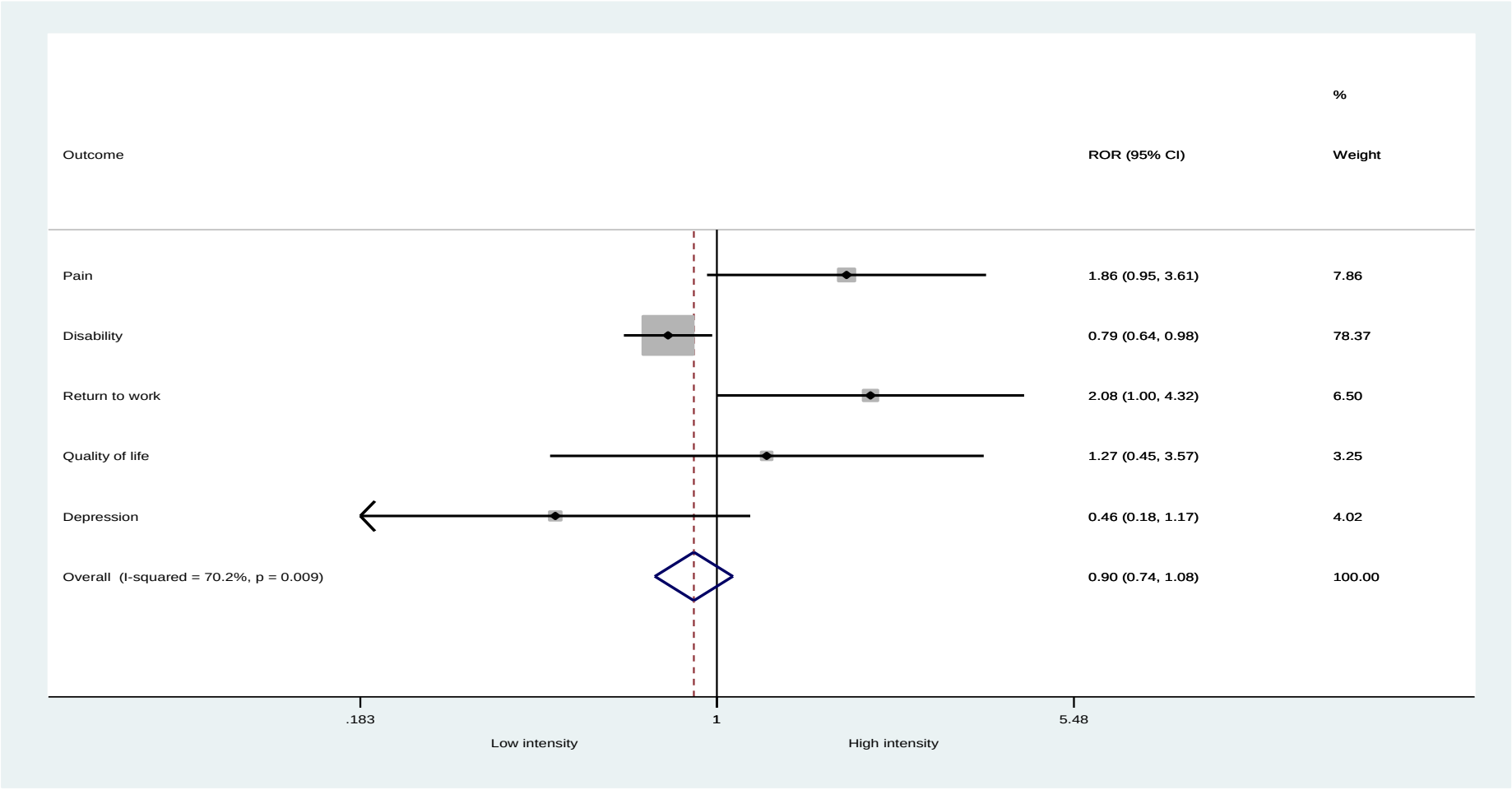

Figure S21. The relative odds ratios (RORs) and 95% confidence intervals (CIs) for each outcome at short term of a low intensity vs. high intensity. The RORs were calculated with a fixed-effect model. A ROR >1 favours high intensity (i.e., >30 h per week); a ROR <1 favours low intensity (i.e., <30 h per week).

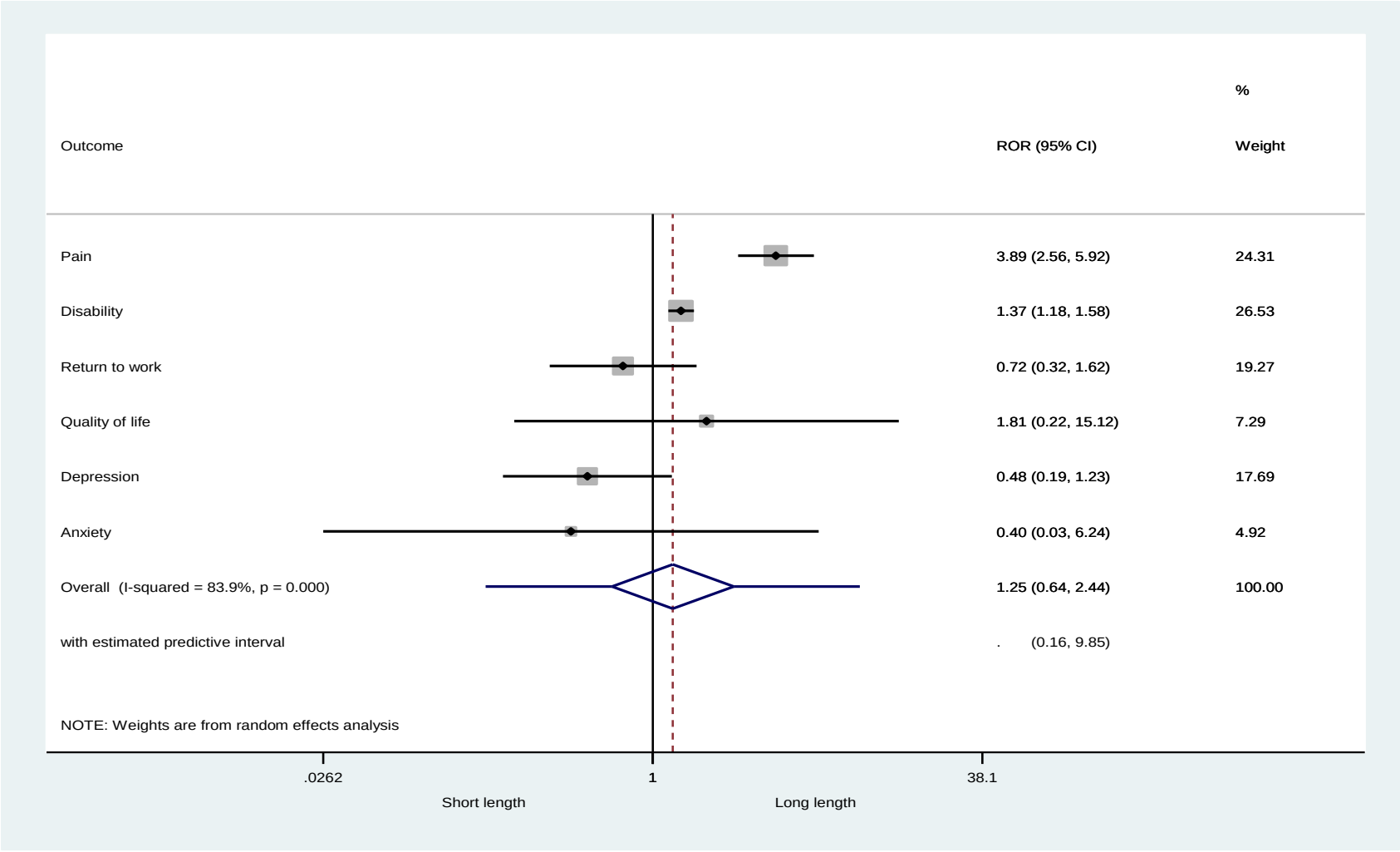

Figure S22. The relative odds ratios (RORs) and 95% confidence intervals (CIs) for each outcome at short term of a short-length treatment vs. long-length treatment, after excluding the study of Moticone et al. (2013/2014). The RORs were calculated with a random-effects model. A ROR >1 favours long length; a ROR <1 favours short length.

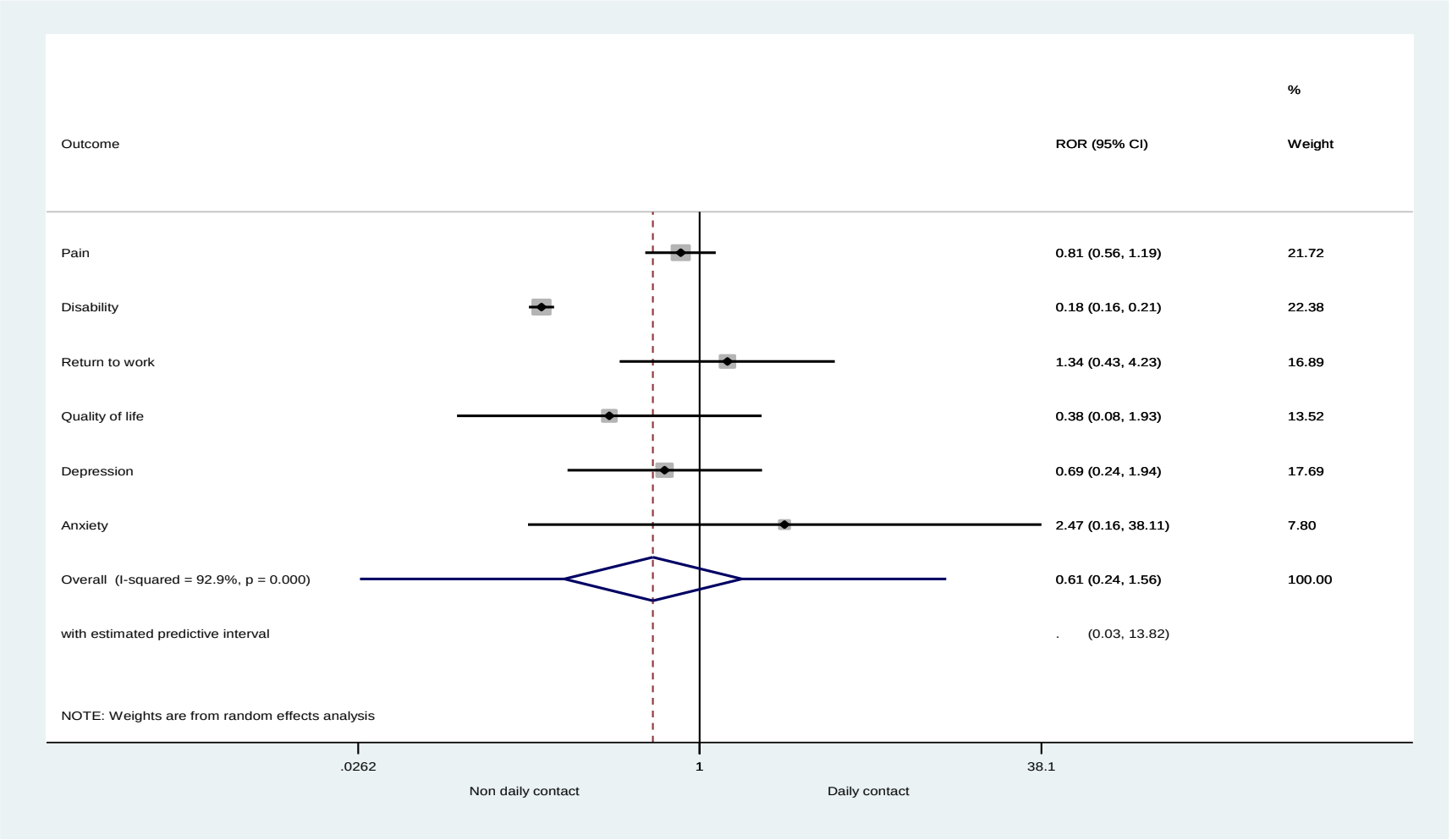

Figure S23. The relative odds ratios (RORs) and 95% confidence intervals (CIs) for each outcome at short term of a non-daily contact vs. daily contact, after excluding the study of Moticone et al. (2013/2014). The RORs were calculated with a random-effects model. A ROR >1 favours daily contact; a ROR <1 favours non-daily contact.

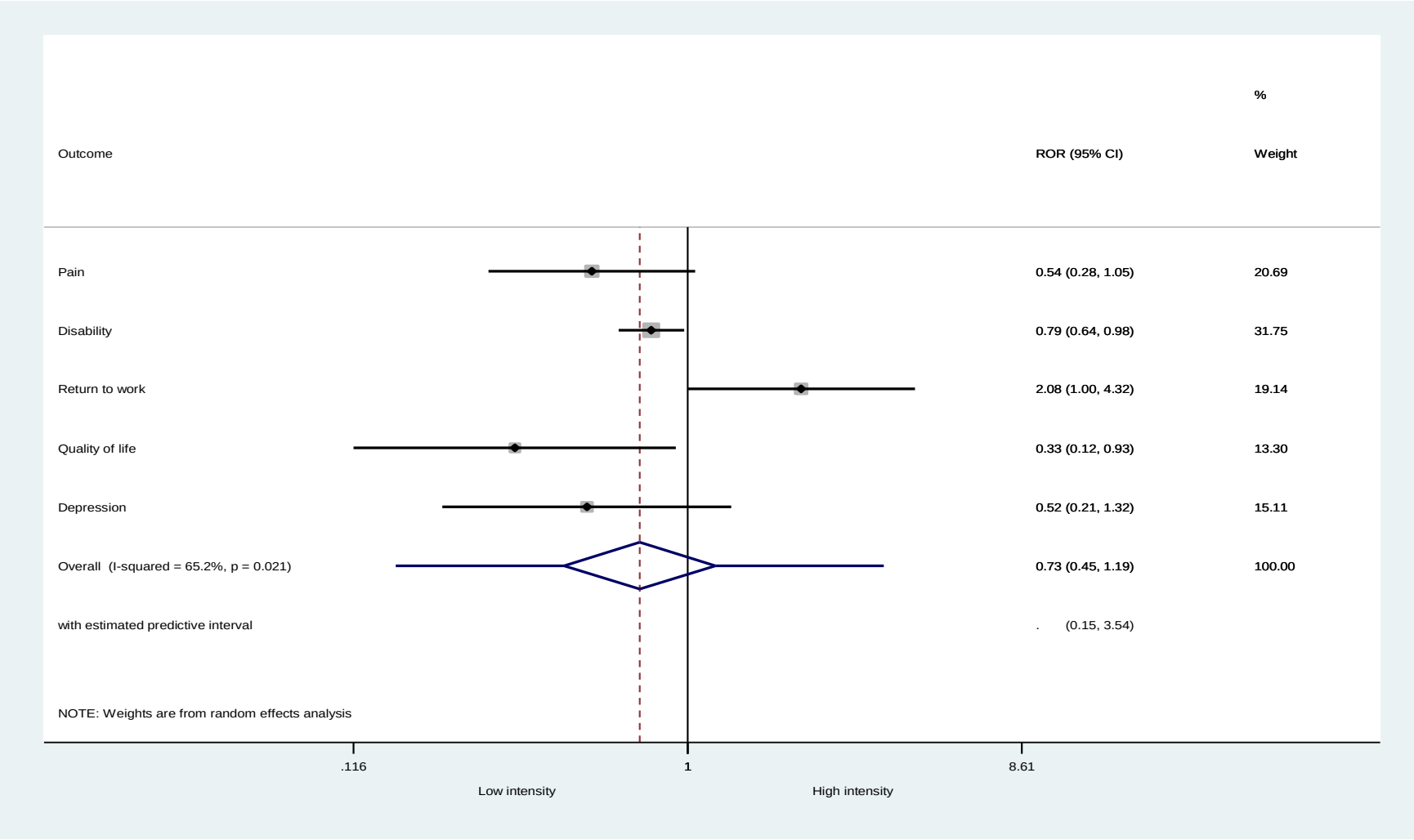

Figure S24. The relative odds ratios (RORs) and 95% confidence intervals (CIs) for each outcome at short term of a low intensity vs. high intensity, after excluding the study of Moticone et al. (2013/2014). The RORs were calculated with a random-effects model. A ROR >1 favours high intensity (i.e., >30 h per week); a ROR <1 favours low intensity (i.e., <30 h per week).

Box S2 e-References of included RCTs

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Table S3. Checklist summarising compliance with PRISMA guidelines.

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including the following: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; and systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	3-4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	4
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	NA
Eligibility criteria	6	Specify study characteristics (e.g., PICOS and length of follow-up) and report characteristics (e.g., years considered, language, and publication status) used as criteria for eligibility and giving rationale.	4
Information sources	7	Describe all information sources (e.g., databases with dates of coverage and contact with study authors to identify additional studies) in the search and date last searched.	4
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Box S1
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	4-5
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	5

Data items	11	List and define all variables for which data were sought (e.g., PICOS and funding sources) and any assumptions and simplifications made.	5
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level) and how this information is to be used in any data synthesis.	5
Summary measures	13	State the principal summary measures (e.g., risk ratio and difference in means).	6
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	6-7
Section/topic	**#**	**Checklist item**	**Reported on page #**
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias and selective reporting within studies).	6
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	7
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	7
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, and follow-up period) and provide the citations.	7
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	8, Table S1, Figure 1
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group and (b) effect estimates and confidence intervals, ideally with a forest plot.	8, Table 2
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	Table 2, Figures 2-4
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	Table S2
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses and meta-regression [see Item 16]).	8-9, Table S2
DISCUSSION			

Summary of evidence	24	Summarise the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	9-10
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias) and at review-level (e.g., incomplete retrieval of identified research, and reporting bias).	11-12
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	9-12
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data) and role of funders in the systematic review.	14