

Results (MD, with 95% CI) of the network meta-analysis for pain scores.

Acupuncture	0.97 (-1.87, 3.72)	-1.70 (-3.98, 0.53)	-2.96 (-6.09, 0.16)	0.35 (-1.66, 2.34)	2.16 (-0.28, 4.74)	-0.62 (-3.38, 2.24)
-0.97 (-3.72, 1.87)	Education	-2.68 (-4.78, -0.65)	-3.94 (-6.97, -0.85)	-0.64 (-2.62, 1.50)	1.21 (-1.72, 4.23)	-1.60 (-4.40, 1.22)
1.70 (-0.53, 3.98)	2.68 (0.65, 4.78)	Electro-acupuncture	-1.26 (-3.50, 1.06)	2.04 (0.67, 3.55)	3.88 (1.64, 6.28)	1.09 (-0.78, 3.07)
2.96 (-0.16, 6.09)	3.94 (0.85, 6.97)	1.26 (-1.06, 3.50)	Fire needle	3.31 (0.68, 5.99)	5.14 (2.20, 8.24)	2.34 (0.35, 4.45)
-0.35 (-2.34, 1.66)	0.64 (-1.50, 2.62)	-2.04 (-3.55, -0.67)	-3.31 (-5.99, -0.68)	Sham needle	1.83 (-0.57, 4.30)	-0.95 (-3.31, 1.36)
-2.16 (-4.74, 0.28)	-1.21 (-4.23, 1.72)	-3.88 (-6.28, -1.64)	-5.14 (-8.24, -2.20)	-1.83 (-4.30, 0.57)	Waiting list	-2.78 (-5.38, -0.28)
0.62 (-2.24, 3.38)	1.60 (-1.22, 4.40)	-1.09 (-3.07, 0.78)	-2.34 (-4.45, -0.35)	0.95 (-1.36, 3.31)	2.78 (0.28, 5.38)	Warm needle

*Boldface and italic meant significance. (Note: if MD<0, it meant that the treatment in columns was more effective than that of the rows in NMA.)

Results (MD, with 95% CI) of the network meta-analysis for function scores.

Acupuncture	1.53 (-6.41, 8.71)	-5.65 (-12.29, 0.04)	-7.10 (-16.85, 1.57)	-0.41 (-5.92, 4.87)	7.01 (-0.23, 14.16)	-4.14 (-12.90, 3.28)
-1.53 (-8.71, 6.41)	Education	-7.20 (-12.78, -1.95)	-8.64 (-17.58, -0.16)	-1.98 (-7.38, 3.82)	5.48 (-2.72, 14.27)	-5.66 (-14.06, 1.78)
5.65 (-0.04, 12.29)	7.20 (1.95, 12.78)	Electro-acupuncture	-1.44 (-8.36, 5.23)	5.23 (1.67, 9.45)	12.74 (6.12, 19.78)	1.50 (-4.39, 7.02)
7.10 (-1.57, 16.85)	8.64 (0.16, 17.58)	1.44 (-5.23, 8.36)	Fire needle	6.67 (-0.71, 14.71)	14.14 (5.24, 23.91)	3.00 (-4.57, 10.05)
0.41 (-4.87, 5.92)	1.98 (-3.82, 7.38)	-5.23 (-9.45, -1.67)	-6.67 (-14.71, 0.71)	Sham needle	7.51 (0.36, 14.56)	-3.75 (-10.89, 2.55)
-7.01 (-14.16, 0.23)	-5.48 (-14.27, 2.72)	-12.74 (-19.78, -6.12)	-14.14 (-23.91, -5.24)	-7.51 (-14.56, -0.36)	Waiting list	-11.21 (-19.40, -3.92)
4.14 (-3.28, 12.90)	5.66 (-1.78, 14.06)	-1.50 (-7.02, 4.39)	-3.00 (-10.05, 4.57)	3.75 (-2.55, 10.89)	11.21 (3.92, 19.40)	Warm needle

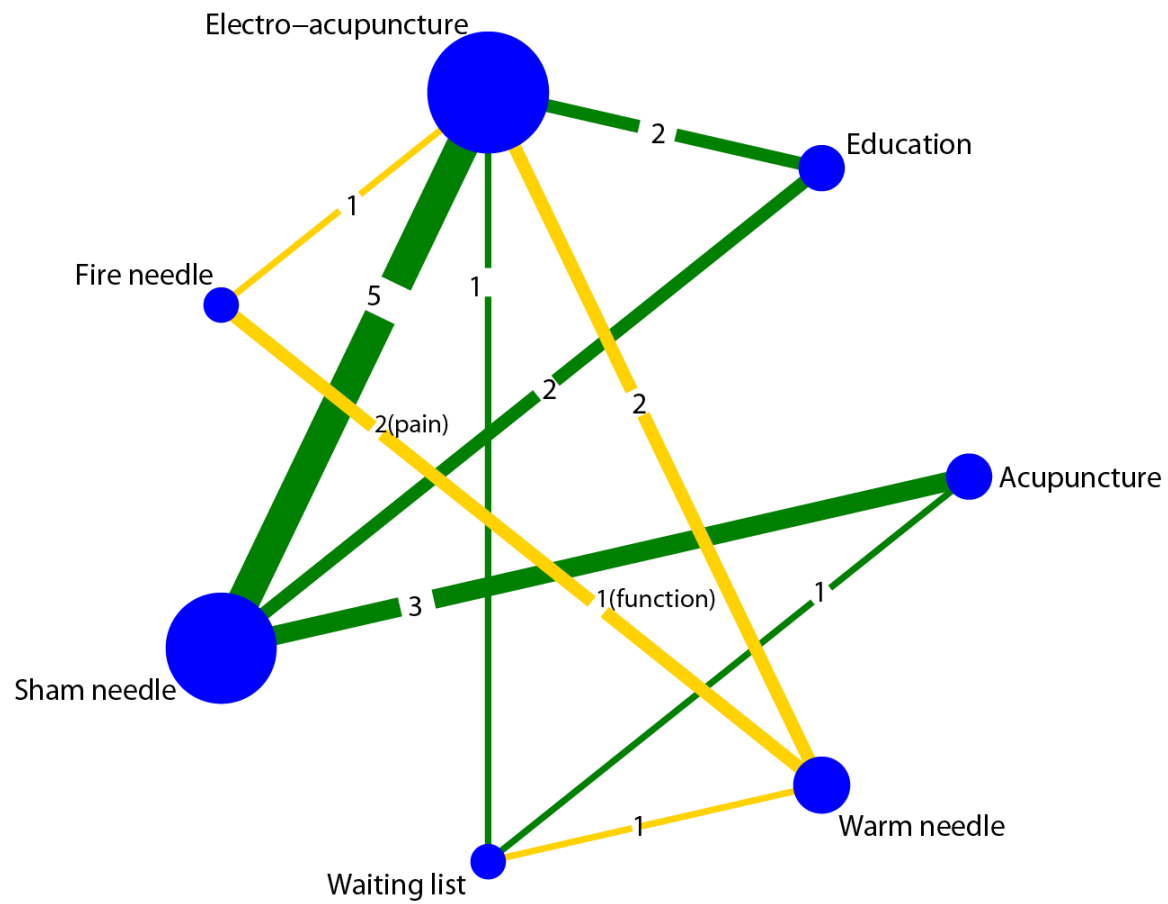
*Boldface and italic meant significance. (Note: if MD<0, it meant that the treatment in columns was more effective than that of the rows in NMA.)

Node-splitting plots for assessing consistency with respect to the decline in (WOMAC) pain scores.

Name	Direct Effect	Indirect Effect	Overall	P-Value
Acupuncture, Sham needle	0.48 (-1.83, 2.96)	-0.31 (-5.09, 4.50)	0.35 (-1.66, 2.34)	0.75
Acupuncture, Waiting list	1.80 (-1.88, 5.44)	2.56 (-1.36, 6.71)	2.16 (-0.28, 4.74)	0.75
Electro-acupuncture, Fire needle	-2.66 (-5.81, 0.47)	0.19 (-3.00, 3.18)	-1.26 (-3.50, 1.06)	0.18
Electro-acupuncture, Sham needle	2.01 (0.49, 3.68)	2.74 (-2.38, 7.97)	2.04 (0.67, 3.55)	0.76
Electro-acupuncture, Waiting list	3.00 (-0.68, 6.67)	4.45 (1.27, 7.76)	3.88 (1.64, 6.28)	0.53
Electro-acupuncture, Warm needle	2.65 (0.51, 4.62)	-1.15 (-3.53, 1.40)	1.09 (-0.78, 3.07)	0.03
Fire needle, Warm needle	1.53 (-0.58, 3.85)	4.47 (0.70, 7.98)	2.34 (0.35, 4.45)	0.18
Waiting list, Warm needle	-4.23 (-8.10, -0.47)	-1.64 (-5.04, 1.84)	-2.78 (-5.38, -0.28)	0.29

Node-splitting plots for assessing consistency with respect to the decline in (WOMAC) physical function scores.

Name	Direct Effect	Indirect Effect	Overall	P-Value
Acupuncture, Sham needle	-0.02 (-6.35, 6.01)	-2.73 (-16.16, 10.89)	-0.41 (-5.92, 4.87)	0.68
Acupuncture, Waiting list	5.72 (-4.19, 15.67)	8.64 (-3.29, 20.03)	7.01 (-0.23, 14.16)	0.66
Electro-acupuncture, Fire needle	-1.83 (-11.24, 7.48)	-0.32 (-13.64, 11.99)	-1.44 (-8.36, 5.23)	0.83
Electro-acupuncture, Sham needle	5.09 (1.08, 9.65)	8.14 (-6.51, 22.86)	5.23 (1.67, 9.45)	0.66
Electro-acupuncture, Waiting list	12.04 (1.18, 22.55)	13.18 (4.18, 23.19)	12.74 (6.12, 19.78)	0.87
Electro-acupuncture, Warm needle	3.13 (-4.57, 10.28)	-0.93 (-10.73, 8.77)	1.50 (-4.39, 7.02)	0.47
Fire needle, Warm needle	2.51 (-8.08, 13.24)	3.47 (-8.47, 14.82)	3.00 (-4.57, 10.05)	0.87
Waiting list, Warm needle	-14.36 (-26.78, -2.09)	-9.04 (-19.32, 0.61)	-11.21 (-19.40, -3.92)	0.48



The Network comparison of acupuncture methods for KOA in pain and function.

Direct comparisons in the network

	EAvsEDU	EAvsFN	EAvsSN	EAvsWL	EAvsWN	EDUvsSN	FNvsWN	MAvsSN	MAvsWL	WLvsWN
Mixed estimates										
EAvsEDU	30.2	2.9	3.4	10.1	1.1	17.4	2.9	14.1	14.1	4.0
EAvsFN	3.3	48.6	0.7	5.5	6.1	3.3	15.5	3.9	3.9	9.4
EAvsSN	19.6	3.3	3.9	11.7	1.3	19.6	3.3	16.3	16.3	4.6
EAvsWL	12.4	5.9	2.5	20.7	2.3	12.4	5.9	14.9	14.9	8.2
EAvsWN	4.8	23.4	1.0	8.1	9.0	23.4	1.5	5.8	5.8	13.8
EDUvsSN	9.9	1.6	1.9	5.7	0.6	60.3	1.6	8.0	8.0	2.3
FNvsWN	3.4	15.9	0.7	5.6	6.3	3.4	47.2	4.0	4.0	9.6
MAvsSN	2.4	0.6	0.5	2.1	0.2	2.4	0.6	87.5	7.9	0.8
MAvsWL	10.6	2.6	2.1	9.1	1.0	10.6	2.6	12.7	45.3	3.6
WLvsWN	7.2	14.9	1.4	12.0	5.7	7.2	14.9	8.6	8.6	19.4
Indirect estimates										
EAvsMA	17.4	3.4	3.5	11.8	1.3	17.4	3.4	20.9	16.4	4.6
EDUvsFN	18.2	21.8	1.9	4.0	2.2	13.0	9.4	11.1	11.1	7.2
EDUvsMA	7.5	1.3	1.0	4.7	0.5	37.2	1.3	38.2	6.5	1.8
EDUvsWL	12.4	2.6	0.5	9.2	1.0	23.0	2.6	22.5	22.5	3.6
EDUvsWN	15.7	13.2	1.5	1.1	5.1	13.9	13.2	12.5	12.5	11.3
FNvsMA	11.9	19.2	2.4	6.6	1.7	11.9	9.5	14.3	14.4	7.8
FNvsSN	12.8	19.6	2.6	6.0	1.8	12.8	9.4	13.6	13.6	7.6
FNvsWL	8.2	22.0	1.6	13.7	1.5	8.2	13.3	9.8	9.9	11.7
MAvsWN	10.8	12.4	2.2	4.2	4.8	10.8	12.4	12.9	16.9	12.6
SNvsWL	9.0	2.2	1.8	7.7	0.8	9.0	2.2	32.2	32.2	3.0
SNvsWN	11.2	12.2	2.2	3.4	4.7	11.2	12.2	15.4	15.4	12.0
Entire network	12.1	12.3	2.0	7.7	2.9	14.3	9.7	16.5	14.4	8.1
Included studies	2	1	5	1	2	2	2	3	1	1

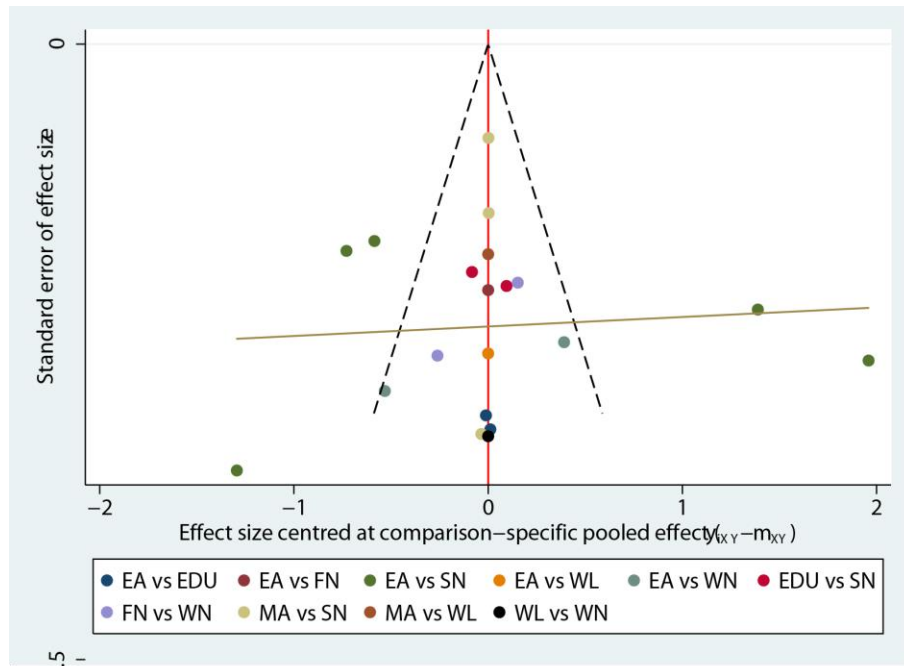
PAIN

Direct comparisons in the network

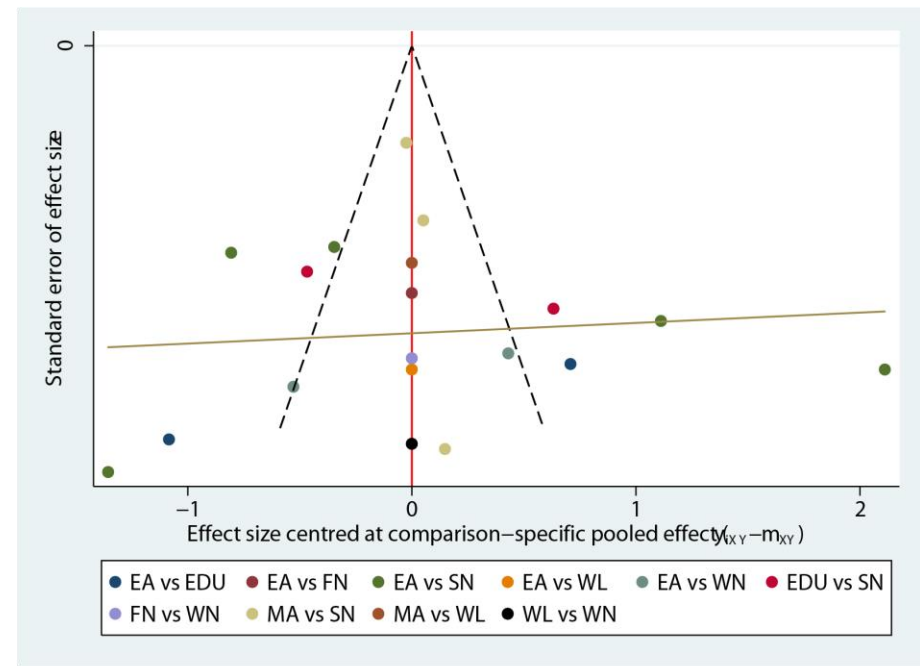
	EAvsEDU	EAvsFN	EAvsSN	EAvsWL	EAvsWN	EDUvsSN	FNvsWN	MAvsSN	MAvsWL	WLvsWN
Mixed estimates										
EAvsEDU	10.3	4.7	12.9	1.5	22.6	3.5	18.0	18.0	5.0	
EAvsFN	0.4	58.3	1.3	7.1	5.7	0.4	14.6	1.7	1.7	8.8
EAvsSN	1.9	5.1	6.7	18.6	2.1	1.9	5.1	25.8	25.8	7.2
EAvsWL	1.8	9.7	6.6	35.6	4.1	1.8	9.7	8.4	8.4	13.8
EAvsWN	0.7	25.0	2.4	13.2	10.6	0.7	25.0	3.1	3.1	16.3
EDUvsSN	14.6	2.3	3.0	8.4	1.0	42.0	2.3	11.6	11.6	3.3
FNvsWN	0.5	20.0	1.8	9.8	7.9	0.5	42.7	2.3	2.3	12.1
MAvsSN	0.3	0.3	1.0	0.9	0.1	0.3	0.3	95.3	0.4	
MAvsWL	1.6	1.4	5.7	5.2	0.6	1.6	1.4	7.3	73.1	2.0
WLvsWN	1.0	16.1	3.4	18.5	6.8	1.0	16.1	4.4	4.4	28.4
Indirect estimates										
EAvsMA	2.1	6.2	7.7	22.8	2.6	2.1	6.2	9.8	31.6	8.8
EDUvsFN	8.0	17.9	3.2	7.6	0.9	17.9	7.9	14.7	14.7	7.1
EDUvsMA	11.1	1.8	1.8	6.7	0.8	31.2	1.8	33.0	9.2	2.6
EDUvsWL	9.8	2.1	1.0	7.8	0.9	25.1	2.1	24.1	24.1	3.0
EDUvsWN	7.8	9.8	2.5	3.6	4.2	18.3	9.8	15.9	15.9	12.2
FNvsMA	1.5	21.2	5.4	14.8	0.5	1.5	11.4	7.0	25.7	10.9
FNvsSN	1.4	18.1	4.9	12.3	0.4	1.4	9.6	21.4	21.4	9.2
FNvsWL	1.2	27.8	4.2	22.7	0.3	1.2	16.1	5.4	5.4	15.8
MAvsWN	1.3	11.7	4.8	10.4	4.9	1.3	11.7	6.9	29.0	18.6
SNvsWL	1.1	1.0	3.9	3.6	0.4	1.1	1.0	43.2	43.2	1.4
SNvsWN	1.2	9.6	4.3	8.2	4.1	1.2	9.6	23.3	23.3	15.1
Entire network	4.2	12.4	4.0	11.9	2.7	9.2	9.5	17.2	19.2	9.9
Included studies	2	1	5	1	2	2	1	3	1	1

FUNCTION

Cumulative contribution plots for the KOA network by all interventions in pain and function.



PAIN



FUNCTION

Funnel plots of all included studies referring to (WOMAC) pain and physical function scores.

Results (MD, with 95% CI) of the pairwise meta-analysis for pain and function scores.

	Sham needle VS Education	Acupuncture VS Sham needle	Electro-acu puncture VS Sham needle	Electro-acupu uncture VS Warm needle	Acupunctur e VS Waiting list	Electro-acu puncture VS Education	Electro-acupu uncture VS Waiting list	Fire needle vs Electro-acupu uncture	Fire needle VS Warm needle	Warm needle VS Waiting list
Pain	<i>-1.14</i> <i>[-1.20,</i> <i>-1.08]</i>	<i>-0.35 [-0.66,</i> <i>-0.03]</i>	<i>-1.53 [-1.94,</i> <i>-1.12]</i>	<i>-2.35 [-3.92,</i> <i>-0.78]</i>	<i>-1.80 [-3.11,</i> <i>-0.49]</i>	<i>-2.09 [-2.15,</i> <i>-2.03]</i>	<i>-3.01 [-4.71,</i> <i>-1.31]</i>	<i>-2.57 [-3.67,</i> <i>-1.47]</i>	-1.70 [-4.25, 0.85]	<i>-4.26</i> <i>[-6.50,</i> <i>-2.02]</i>
Function	<i>-3.78</i> <i>[-3.95,</i> <i>-3.61]</i>	-0.20 [-0.56, 0.17]	<i>-4.27 [-5.57,</i> <i>-2.97]</i>	3.15 [-4.31, 10.61]	<i>-5.70</i> <i>[-10.28,</i> <i>-1.12]</i>	<i>-6.56 [-6.74,</i> <i>-6.38]</i>	<i>-11.98</i> <i>[-18.01,</i> <i>-5.95]</i>	<i>-1.80 [-3.11,</i> <i>-0.49]</i>	-1.74[-10.26 , 6.77]	<i>-14.70</i> <i>[-23.86,</i> <i>-5.54]</i>

Rank probabilities of all treatments with SUCRA values.

Treatment	Pain	Rank	Function	Rank
Acupuncture	0.54	4	0.62	5
Education	0.78	6	0.75	6
Electro-acupuncture	0.18	2	0.17	2
Fire needle	0.03	1	0.10	1
Sham needle	0.63	5	0.59	4
Waiting list	0.95	7	0.98	7
Warm needle	0.42	3	0.30	3

Sensitivity Analysis of the included studies for pain.

	MD	95%CI	P-value	tau²	I²
Sham needle VS Education					
Omitting Berman 2004	-1.14	[-1.22, -1.06]	< 0.001	0.00	-
Omitting Manheimer 2006	-1.14	[-1.22, -1.06]	< 0.001	0.00	-
Pooled estimate	-1.14	[-1.20, -1.08]	< 0.001	0.00	0.00
Acupuncture VS Sham needle					
Omitting Chen 2013	-0.10	[-0.47, 0.26]	0.58	0.00	0.00
Omitting Scharf 2006	-0.48	[-0.55, -0.41]	< 0.001	0.00	0.00
Omitting Takeda 1994	-0.33	[-0.70, 0.03]	0.07	0.05	0.75
Pooled estimate	-0.35	[-0.66, -0.03]	0.03	0.04	0.52
Electro-acupuncture VS Sham needle					
Omitting Berman 2004	-2.25	[-3.42, -1.08]	0.0002	1.05	0.97
Omitting Jubb 2008	-1.52	[-1.94, -1.10]	< 0.001	0.13	0.98
Omitting Sangdee 2002	-0.99	[-1.18, -0.80]	< 0.001	0.02	0.82
Omitting Vas 2004	-1.39	[-1.78, -1.00]	< 0.001	0.12	0.97
Omitting Manheimer 2006	-2.25	[-3.42, -1.08]	0.0002	1.05	0.97
Pooled estimate	-1.53	[-1.94, -1.12]	< 0.001	0.13	0.97
Electro-acupuncture VS Warm needle					
Omitting Gao 2012	-1.32	[-3.45, 0.81]	0.02	0.00	-
Omitting Lu 2014	-2.97	[-4.36, -1.58]	< 0.001	0.00	-
Pooled estimate	-2.35	[-3.92, -0.78]	0.03	0.52	0.65
Fire needle VS Warm needle					
Omitting Fan 2016	-3.20	[-5.26, -1.14]	0.002	0.00	-
Omitting Zhang 2013	-0.57	[-1.22, 0.08]	0.08	0.00	-
Pooled estimate	-1.70	[-4.25, 0.85]	0.19	2.85	0.82
Electro-acupuncture VS Education					
Omitting Berman 2004	-2.09	[-2.17, -2.01]	< 0.001	0.00	-
Omitting Manheimer 2006	-2.09	[-2.17, -2.01]	< 0.001	0.00	-
Pooled estimate	-2.09	[-2.15, -2.03]	< 0.001	0.00	0.00

MD: mean difference, CI: confidence interval.

Sensitivity Analysis of the included studies for physical function.

	MD 95%CI	P-value	tau²	I²
Sham needle VS Education				
Omitting Berman 2004	-3.78 [-4.02, -3.54]	< 0.001	0.00	-
Omitting Manheimer 2006	-3.78 [-4.02, -3.54]	< 0.001	0.00	-
Pooled estimate	-3.78 [-3.95, -3.61]	< 0.001	0.00	0.00
Acupuncture VS Sham needle				
Omitting Chen 2013	-0.20 [-0.57, 0.17]	0.29	0.00	0.00
Omitting Scharf 2006	-0.04 [-3.28, 3.21]	0.98	0.00	0.00
Omitting Takeda 1994	-0.20 [-0.56, 0.17]	0.29	0.00	0.00
Pooled estimate	-0.20 [-0.56, 0.17]	0.29	0.00	0.00
Electro-acupuncture VS Sham needle				
Omitting Berman 2004	-5.89 [-9.55, -2.22]	0.002	10.28	0.97
Omitting Jubb 2008	-4.42 [-5.74, -3.10]	< 0.001	1.36	0.97
Omitting Sangdee 2002	-2.78 [-3.45, -2.11]	< 0.001	0.23	0.85
Omitting Vas 2004	-3.82 [-5.05, -2.59]	< 0.001	1.16	0.97
Omitting Manheimer 2006	-5.92 [-9.43, -2.41]	0.0009	9.26	0.97
Pooled estimate	-4.27 [-5.57, -2.97]	< 0.001	1.35	0.97
Electro-acupuncture VS warm needle				
Omitting Gao 2012	-5.60[-10.18,-1.02]	< 0.001	0.00	-
Omitting Lu 2014	3.15 [-4.31, 10.61]	0.41	0.00	-
Pooled estimate	-1.74[-10.26, 6.77]	0.40	28.32	0.74
Electro-acupuncture VS Education				
Omitting Berman 2004	-6.56 [-6.83, -6.29]	< 0.001	0.00	-
Omitting Manheimer 2006	-6.56 [-6.80, -6.32]	< 0.001	0.00	-
Pooled estimate	-6.56 [-6.74, -6.38]	< 0.001	0.00	0.00

MD: mean difference, CI: confidence interval.