2018 GLA:D™ Canada Implementation and Outcomes

Supplementary Report: Analysis of Provincial and Territorial Data

GLA:D™
CANADA

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Acknowledgements

GLA:D Canada: 2018 Supplementary Report

This supplementary report presents provincial-level patient registry data for the three highest-enrolling provinces to the end of 2018: Ontario, Alberta and British Columbia. Data for the remaining provinces and territories have been excluded because of limited patient numbers and/or lack of 12 month follow up data to the end of 2018.

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ONTARIO

Baseline characteristics of GLA:D participants

Results are presented as percentage (count) for categorical measures and mean ± standard deviation for continuous measures.

Measure	Category	Hip (N=272)	Knee (N=754)
Demographics			
Year of enrollment	2016	0.4% (1)	0.1% (1)
	2017	35.7% (97)	27.9% (210)
	2018	64.0% (174)	72.0% (543)
Gender	Female	68.0% (185)	78.1% (588)
	Male	32.0% (87)	21.9% (165)
	Not reported	— (0)	— (1)
Age (y)	—	65.1 ± 9.1 (N = 272)	65.1 ± 8.6 (N = 752)
Age group	< 55	10.3% (28)	11.3% (85)
	55-64	35.3% (96)	35.5% (267)
	65-74	39.7% (108)	40.3% (303)
	≥ 75	14.7% (40)	12.9% (97)
	Not reported	— (0)	— (2)
Marital status	Single	9.6% (26)	10.5% (79)
	Married	64.3% (175)	58.2% (438)
	Common-law	4.4% (12)	5.7% (43)
	Living with partner	0.7% (2)	2.1% (16)
	Separated	1.8% (5)	3.9% (29)
	Divorced	8.5% (23)	9.8% (74)
	Widowed	10.7% (29)	9.8% (74)
	Not reported	— (0)	— (1)
Highest education obtained	Some or completed elementary school	0.4% (1)	0.9% (7)
	Some or completed high school	12.5% (34)	13.9% (105)
	Some or completed trade or community college program	22.8% (62)	24.9% (188)
	Some or completed university	58.5% (159)	51.6% (389)
	Other	5.9% (16)	8.6% (65)
Employment status	Working full-time	22.3% (60)	24.0% (179)

	Working part-time	6.3% (17)	8.1% (60)
	Not working, on benefits	2.6% (7)	2.8% (21)
	Not working, seeking work	1.9% (5)	1.9% (14)
	Retired	62.5% (168)	56.9% (424)
	Homemaker	2.6% (7)	2.1% (16)
	Other	1.9% (5)	4.2% (31)
	Not reported	— (3)	— (9)
Health factors			
Smoking status	No	96.3% (262)	95.8% (721)
	Yes	3.7% (10)	4.2% (32)
	Not reported	— (0)	— (1)
Body-mass index (BMI, kg/m²)	—	28.0 ± 6.2 (N = 267)	30.4 ± 6.6 (N = 738)
BMI category	Underweight (< 18.5)	0.0% (0)	0.3% (2)
	Normal weight (18.5 - 24.9)	31.5% (84)	19.8% (146)
	Overweight (25 - 29.9)	40.4% (108)	33.5% (247)
	Obese (≥ 30)	28.1% (75)	46.5% (343)
	Not reported	— (5)	— (16)
Number of comorbid conditions (excluding osteoarthritis)	None	23.2% (63)	22.4% (169)
	1	32.7% (89)	28.1% (212)
	2	20.6% (56)	22.1% (167)
	3	13.2% (36)	15.4% (116)
	4 or more	10.3% (28)	11.9% (90)
Congestive heart failure	Yes	2.6% (7)	0.9% (7)
	Not reported	— (4)	— (6)
Heart attack (myocardial infarction)	Yes	4.8% (13)	3.1% (23)
	Not reported	— (0)	— (3)
High blood pressure	Yes	36.2% (98)	40.1% (302)
	Not reported	— (1)	— (0)
High cholesterol	Yes	25.8% (70)	31.4% (236)
	Not reported	— (1)	— (3)
Stroke or cerebrovascular accident	Yes	2.2% (6)	2.5% (19)
	Not reported	— (0)	— (3)
Asthma or chronic lung disease	Yes	7.7% (21)	9.3% (70)
Diabetes	Yes	9.6% (26)	9.7% (73)
Kidney disease	Yes	1.1% (3)	1.1% (8)

	Not reported	— (0)	— (4)
Liver disease	Yes	0.0% (0)	1.3% (10)
	Not reported	— (2)	— (1)
Anaemia or other blood disease	Yes	2.2% (6)	2.7% (20)
	Not reported	— (1)	— (1)
Stomach/intestinal ulcers	Yes	1.5% (4)	2.8% (21)
	Not reported	— (1)	— (4)
Depression	Yes	9.9% (27)	14.2% (107)
	Not reported	— (0)	— (2)
Cancer (excluding skin cancer)	Yes	2.2% (6)	4.0% (30)
	Not reported	— (0)	— (2)
Lower back pain	Yes	26.6% (72)	19.0% (143)
	Not reported	— (1)	— (2)
History of hip/knee symptoms			
Duration of symptoms in affected hip/knee (years)	—	4.9 ± 7.7 (N = 267)	6.2 ± 7.5 (N = 739)
Categorized duration of symptoms (years)	Less than 1	16.1% (43)	14.1% (104)
	1 to 1.9	16.9% (45)	13.3% (98)
	2 to 4.9	39.3% (105)	29.9% (221)
	5 to 9.9	13.1% (35)	18.0% (133)
	10 or more	14.6% (39)	24.8% (183)
	Not reported	— (5)	— (15)
Previous injury to affected hip/knee	No	89.0% (242)	56.6% (426)
	Yes	11.0% (30)	43.4% (326)
	Not reported	— (0)	— (2)
Are you so troubled by your hip/knee problems that you want surgery?	No	69.4% (188)	74.5% (555)
	Yes	30.6% (83)	25.5% (190)
	Not reported	— (1)	— (9)
Previous surgery on affected joint			
Have you had surgery on your hip/knee?	No	94.8% (257)	76.6% (573)
	Yes	5.2% (14)	23.4% (175)
	Not reported	— (1)	— (6)
Specify surgery type (all that apply):	Joint replacement	2.6% (7)	3.9% (29)
	Arthroscopic procedure	1.1% (3)	16.7% (125)
	Other surgery	1.5% (4)	6.3% (47)
	Not reported	— (1)	— (6)

Physical activity

Are you afraid that your joints will be damaged from physical activity and exercise?	No	75.6% (205)	69.5% (518)
	Yes	24.4% (66)	30.5% (227)
	Not reported	— (1)	— (9)
In a typical week, how many days have you been physically active at least 30 minutes per day?	None	4.0% (11)	8.6% (65)
	1 to 3	33.5% (91)	29.9% (225)
	4 to 6	38.6% (105)	36.0% (271)
	7	23.9% (65)	25.5% (192)
	Not reported	— (0)	— (1)

Medications

Have you taken any medications including herbal or dietary supplements for your hip/knee in the last 3 months?	No	26.7% (72)	32.3% (241)
	Yes	73.3% (198)	67.7% (505)
	Not reported	— (2)	— (8)
Specify medications (select all that apply):	Acetaminophen (e.g. Tylenol plain or extra strength)	48.0% (130)	41.5% (310)
	Non-steroidal anti-inflammatory drugs/NSAID (e.g. ibuprofen, Aleve, aspirin)	45.0% (122)	41.2% (308)
	Topical NSAID cream	26.2% (71)	30.9% (231)
	Glucosamine	23.6% (64)	19.4% (145)
	Hyaluronic acid injection into your joint	1.8% (5)	4.3% (32)
	Corticosteroid (cortisone) injection into your joint	7.7% (21)	13.5% (101)
	Morphine or other opioids (e.g. Tylenol No. 3)	5.2% (14)	5.1% (38)
	Tramadol	3.3% (9)	1.7% (13)
	Codeine	3.3% (9)	4.0% (30)
	Tricyclic antidepressants (for neuropathic pain)	1.1% (3)	1.7% (13)
	Anticonvulsants (e.g. Gabapentin)	2.6% (7)	2.0% (15)
	Methotrexate	0.4% (1)	0.8% (6)
	Herbal supplements	22.1% (60)	18.1% (135)

Patient-reported scales

Numeric pain rating: hip/knee pain in the past month (0-10)	—	5.1 ± 2.3 (N = 272)	5.3 ± 2.2 (N = 754)

EQ-5D utility score	—	0.7 ± 0.2 (N = 266)	0.7 ± 0.2 (N = 749)
Arthritis Self-Efficacy Scale (1=lowest self-efficacy, 10=highest)	—	6.0 ± 1.8 (N = 272)	6.3 ± 1.8 (N = 752)
HOOS/KOOS subscale (0=extreme symptoms, 100=no symptoms)	Activities of daily living (ADL)	62.4 ± 18.4 (N = 272)	64.0 ± 17.0 (N = 754)
	Pain	56.7 ± 16.2 (N = 272)	56.5 ± 15.6 (N = 754)
	Quality of life	41.6 ± 18.7 (N = 272)	37.5 ± 17.0 (N = 754)
	Sports/recreation	37.4 ± 23.2 (N = 272)	24.5 ± 20.6 (N = 754)

3-month survey: GLA:D Canada participation and satisfaction with program

Measure	Category	Hip (N=149)	Knee (N=390)
How many education sessions did you attend? (0-3)	0	1.3% (2)	1.0% (4)
	1	16.1% (24)	18.6% (72)
	2	73.8% (110)	70.8% (274)
	3	8.7% (13)	9.6% (37)
	Not reported	— (0)	— (3)
How many exercise sessions did you attend? (0-12, categorized)	0-5	2.7% (4)	1.8% (7)
	6-10	13.5% (20)	11.6% (45)
	11-12	83.8% (124)	86.6% (335)
	Not reported	— (1)	— (3)
How much have you benefited from the GLA:D program?	1 - Not at all beneficial	0.0% (0)	1.0% (4)
	2	3.4% (5)	1.0% (4)
	3 - Neutral	8.7% (13)	12.6% (49)
	4	32.2% (48)	26.7% (104)
	5 - Very beneficial	55.7% (83)	58.6% (228)
	Not reported	— (0)	— (1)
How often do you use what you have learned from the GLA:D program in your daily life?	Never	1.3% (2)	1.8% (7)
	Every month	1.3% (2)	2.1% (8)
	Every week	28.2% (42)	30.0% (117)
	Every day	56.4% (84)	51.5% (201)
	Several times a day	10.7% (16)	10.3% (40)
	Don't know	2.0% (3)	4.4% (17)
How satisfied are you with the outcome of the GLA:D program?	1 - Not at all satisfied	2.0% (3)	1.6% (6)
	2	1.4% (2)	2.3% (9)
	3 - Neutral	12.9% (19)	12.4% (48)
	4	32.0% (47)	24.1% (93)
	5 - Very satisfied	51.7% (76)	59.6% (230)
	Not reported	— (2)	— (4)
Based on your experience, how much would you be willing to pay to take part in the GLA:D program?	$100 or less	21.8% (31)	28.5% (106)
	$101 to $150	11.3% (16)	8.3% (31)
	$151 to $200	16.2% (23)	15.3% (57)
	$201 to $250	12.0% (17)	12.6% (47)
	$251 to $300	12.0% (17)	15.6% (58)

Measure	Category	Hip (N=149)	Knee (N=390)
	$301 or more	26.8% (38)	19.6% (73)
	Not reported	— (7)	— (18)

Participant outcomes

Changes from initial status to follow-up

Measure	Time	Category	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
				Hip					**Knee**			
Pain intensity												
Numeric pain rating	3M	—	148	4.8 ± 2.2	3.5 ± 2.2	-1.6, -1.0	<0.001 (<0.001)	388	5.2 ± 2.2	3.5 ± 2.2	-1.9, -1.4	<0.001 (<0.001)
	12M	—	49	4.8 ± 2.1	3.3 ± 2.2	-2.2, -0.7	<0.001 (0.002)	117	5.2 ± 2.1	3.6 ± 2.4	-2.1, -1.1	<0.001 (<0.001)
HOOS/KOOS scores												
Pain	3M	—	148	58.8 ± 15.3	64.4 ± 16.9	3.6, 7.6	<0.001 (<0.001)	389	58.9 ± 14.5	65.9 ± 16.1	5.6, 8.3	<0.001 (<0.001)
	12M	—	49	57.9 ± 13.4	68.6 ± 19.3	4.8, 16.6	<0.001 (0.003)	116	59.3 ± 14.9	67.8 ± 18.0	5.6, 11.4	<0.001 (<0.001)
Activities of Daily Living	3M	—	149	65.5 ± 18.0	68.5 ± 19.4	1.1, 4.9	0.003 (0.011)	388	67.2 ± 16.4	73.1 ± 17.3	4.5, 7.2	<0.001 (<0.001)
	12M	—	49	65.6 ± 16.5	72.6 ± 19.6	1.1, 13.0	0.021 (0.072)	116	66.5 ± 17.0	73.4 ± 17.8	3.7, 10.0	<0.001 (<0.001)
Sports/recreation	3M	—	149	40.3 ± 21.7	43.9 ± 25.6	1.1, 6.1	0.005 (0.020)	389	27.3 ± 21.3	33.8 ± 24.5	4.7, 8.4	<0.001 (<0.001)
	12M	—	48	36.4 ± 20.1	46.5 ± 27.8	2.4, 17.8	0.011 (0.041)	116	25.6 ± 21.8	34.2 ± 27.8	4.4, 12.9	<0.001 (<0.001)
Quality of Life	3M	—	147	43.7 ± 17.4	49.7 ± 20.3	3.8, 8.3	<0.001 (<0.001)	388	39.6 ± 16.6	47.6 ± 18.4	6.4, 9.6	<0.001 (<0.001)
	12M	—	49	43.6 ± 15.8	54.5 ± 21.6	4.0, 17.8	0.003 (0.011)	116	37.8 ± 16.7	51.3 ± 20.4	9.7, 17.2	<0.001 (<0.001)

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
Function tests												
30-second chair stand: # of stands	3M (last session)	—	122	12.2 ± 4.5	15.4 ± 5.0	2.6, 3.9	<0.001 (<0.001)	307	12.1 ± 5.2	16.2 ± 6.4	3.6, 4.6	<0.001 (<0.001)
40-m walk test: speed (m/s)	3M (last session)	—	99	1.4 ± 0.3	1.5 ± 0.3	0.06, 0.16	<0.001 (<0.001)	216	1.3 ± 0.3	1.5 ± 0.3	0.14, 0.19	<0.001 (<0.001)
Other outcomes												
In a typical week, how many days have you been physically active at least 30 minutes per day?	3M	—	149	4.4 ± 2.0	4.3 ± 1.7	-0.39, 0.17	0.421 (0.702)	387	4.5 ± 2.2	4.6 ± 1.8	-0.05, 0.33	0.139 (0.332)
	12M	—	49	4.4 ± 2.0	4.4 ± 1.9	-0.66, 0.54	0.838 (1.000)	117	4.4 ± 2.2	4.6 ± 2.0	-0.14, 0.52	0.263 (0.518)
Body-mass index (kg/m²)	3M	—	145	27.4 ± 5.2	27.3 ± 5.2	-0.21, 0.08	0.357 (0.647)	377	29.4 ± 6.0	29.3 ± 5.8	-0.28, 0.15	0.543 (0.811)
	12M	—	48	27.7 ± 5.5	27.6 ± 5.4	-0.44, 0.24	0.556 (0.814)	115	29.4 ± 6.0	29.0 ± 5.7	-0.64, -0.18	<0.001 (0.003)
BMI category: overweight or obese (≥ 25 kg/m²)	3M	—	145	66.9% (97)	64.1% (93)	-2.76%	0.289 (0.551)	377	76.7% (289)	77.2% (291)	0.53%	0.724 (0.935)
	12M	—	48	62.5% (30)	66.7% (32)	4.17%	0.683 (0.911)	115	78.3% (90)	75.7% (87)	-2.61%	0.248 (0.512)
BMI category: obese (≥ 30 kg/m²)	3M	—	145	25.5% (37)	23.4% (34)	-2.07%	0.371 (0.648)	377	39.5% (149)	38.2% (144)	-1.33%	0.332 (0.624)
	12M	—	48	27.1% (13)	22.9% (11)	-4.17%	0.480 (0.743)	115	38.3% (44)	33.0% (38)	-5.22%	0.077 (0.208)
EQ-5D-5L health utility	3M	—	144	0.73 ± 0.15	0.75 ± 0.15	-0.00, 0.04	0.080 (0.210)	383	0.74 ± 0.14	0.78 ± 0.15	0.02, 0.05	<0.001 (<0.001)
	12M	—	47	0.75 ± 0.12	0.77 ± 0.14	-0.02, 0.07	0.226 (0.482)	115	0.74 ± 0.15	0.79 ± 0.14	0.03, 0.08	<0.001 (<0.001)
OA Patient Knowledge score	3M	—	94	21.4 ± 4.1	22.2 ± 4.2	0.05, 1.54	0.037 (0.111)	235	21.1 ± 4.1	22.1 ± 3.9	0.51, 1.43	<0.001 (<0.001)

Measure	Time	Category	Hip					Knee				
			N^a	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N^a	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
	12M	—	19	22.2 ± 4.2	22.7 ± 4.1	-1.8, 2.8	0.637 (0.868)	44	22.3 ± 4.0	22.8 ± 3.4	-0.68, 1.59	0.424 (0.702)
Arthritis Self-Efficacy Scale	3M	—	148	6.2 ± 1.7	6.5 ± 2.0	0.03, 0.64	0.030 (0.095)	389	6.5 ± 1.8	6.7 ± 1.9	0.09, 0.44	0.003 (0.012)
	12M	—	48	6.2 ± 1.7	6.5 ± 2.1	-0.26, 0.96	0.252 (0.512)	116	6.7 ± 1.8	7.0 ± 1.9	-0.04, 0.64	0.085 (0.220)
Are you so troubled by your hip/knee problems that you want surgery?	3M	—	147	27.9% (41)	29.3% (43)	1.36%	0.814 (1.000)	383	24.3% (93)	22.2% (85)	-2.09%	0.366 (0.648)
	12M	—	49	24.5% (12)	44.9% (22)	20.41%	0.024 (0.080)	114	22.8% (26)	27.2% (31)	4.39%	0.383 (0.659)
Are you afraid that your joints will be damaged from physical activity and exercise?	3M	—	148	20.9% (31)	8.1% (12)	-12.84%	<0.001 (<0.001)	381	29.4% (112)	16.3% (62)	-13.12%	<0.001 (<0.001)
	12M	—	49	18.4% (9)	18.4% (9)	0.00%	1.000 (1.000)	116	31.0% (36)	27.6% (32)	-3.45%	0.584 (0.842)
How much have you benefited from the GLA:D program?[d]	12M	1 - Not at all beneficial						106	0.0% (0)	1.9% (2)	1.89%	0.010 (0.036)
	12M	2	45	2.2% (1)	4.4% (2)	2.22%		106	0.0% (0)	0.9% (1)	0.94%	
	12M	3 - Neutral	45	11.1% (5)	20.0% (9)	8.89%		106	7.5% (8)	9.4% (10)	1.89%	
	12M	4	45	33.3% (15)	35.6% (16)	2.22%		106	30.2% (32)	34.9% (37)	4.72%	
	12M	5 - Very beneficial	45	53.3% (24)	40.0% (18)	-13.33%		106	62.3% (66)	52.8% (56)	-9.43%	
How often do you use what you have learned from the GLA:D program in your daily life?[d]	12M	Never	45	0.0% (0)	2.2% (1)	2.22%	0.020 (0.071)	106	0.0% (0)	3.8% (4)	3.77%	0.002 (0.010)
	12M	Every month	45	2.2% (1)	2.2% (1)	0.00%		106	2.8% (3)	8.5% (9)	5.66%	
	12M	Every week	45	15.6% (7)	28.9% (13)	13.33%		106	24.5% (26)	27.4% (29)	2.83%	
	12M	Every day	45	66.7% (30)	46.7% (21)	-20.00%		106	56.6% (60)	39.6% (42)	-16.98%	

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
	12M	Several times a day	45	15.6% (7)	8.9% (4)	-6.67%		106	13.2% (14)	11.3% (12)	-1.89%	
	12M	Don't know[e]	45	0.0% (0)	11.1% (5)	11.11%		106	2.8% (3)	9.4% (10)	6.60%	
Employment status: currently working (full- or part-time)	3M	—	148	23.0% (34)	23.0% (34)	0.00%	1.000 (1.000)	382	27.5% (105)	27.7% (106)	0.26%	1.000 (1.000)
	12M	—	48	18.8% (9)	18.8% (9)	0.00%	1.000 (1.000)	115	31.3% (36)	31.3% (36)	0.00%	1.000 (1.000)
Employment status: Not working and on benefits	3M	—	148	1.4% (2)	2.7% (4)	1.35%	0.617 (0.850)	382	3.1% (12)	1.8% (7)	-1.31%	0.074 (0.203)
	12M	—	48	2.1% (1)	4.2% (2)	2.08%	1.000 (1.000)	115	2.6% (3)	2.6% (3)	0.00%	1.000 (1.000)
Medications												
Have you taken any medications for your hip/knee in the last 3 months?	3M	—	148	68.9% (102)	70.3% (104)	1.35%	0.868 (1.000)	380	66.3% (252)	62.6% (238)	-3.68%	0.215 (0.476)
	12M	—	48	79.2% (38)	70.8% (34)	-8.33%	0.453 (0.721)	115	70.4% (81)	58.3% (67)	-12.17%	0.035 (0.108)
Any injection(s) reported (hyaluronic acid, corticosteroid)	3M	—	149	3.4% (5)	6.7% (10)	3.36%	0.267 (0.518)	382	15.2% (58)	7.3% (28)	-7.85%	<0.001 (<0.001)
	12M	—	48	2.1% (1)	10.4% (5)	8.33%	0.221 (0.480)	114	15.8% (18)	9.6% (11)	-6.14%	0.190 (0.446)
Any opioid use reported (morphine, tramadol, codeine)	3M	—	149	8.1% (12)	8.7% (13)	0.67%	1.000 (1.000)	382	5.2% (20)	7.6% (29)	2.36%	0.124 (0.313)
	12M	—	48	10.4% (5)	14.6% (7)	4.17%	0.617 (0.850)	114	7.0% (8)	7.0% (8)	0.00%	1.000 (1.000)
Acetaminophen	3M	—	149	49.7% (74)	45.0% (67)	-4.70%	0.360 (0.647)	382	40.6% (155)	38.7% (148)	-1.83%	0.558 (0.814)
	12M	—	48	54.2% (26)	54.2% (26)	0.00%	1.000 (1.000)	114	42.1% (48)	28.9% (33)	-13.16%	0.021 (0.072)

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
NSAID	3M	—	149	46.3% (69)	43.0% (64)	-3.36%	0.424 (0.702)	382	40.8% (156)	38.7% (148)	-2.09%	0.488 (0.747)
	12M	—	48	45.8% (22)	37.5% (18)	-8.33%	0.453 (0.721)	114	45.6% (52)	34.2% (39)	-11.40%	0.043 (0.126)
Topical NSAID cream	3M	—	149	24.8% (37)	20.1% (30)	-4.70%	0.248 (0.512)	382	29.8% (114)	26.4% (101)	-3.40%	0.213 (0.476)
	12M	—	48	27.1% (13)	14.6% (7)	-12.50%	0.211 (0.476)	114	31.6% (36)	21.1% (24)	-10.53%	0.059 (0.167)
Glucosamine	3M	—	149	24.2% (36)	22.1% (33)	-2.01%	0.646 (0.871)	382	19.1% (73)	16.2% (62)	-2.88%	0.136 (0.331)
	12M	—	48	29.2% (14)	22.9% (11)	-6.25%	0.505 (0.764)	114	17.5% (20)	14.0% (16)	-3.51%	0.453 (0.721)
Hyaluronic acid injection	3M	—	149	0.0% (0)	2.7% (4)	2.68%	NC[f]	382	4.7% (18)	2.4% (9)	-2.36%	0.052 (0.151)
	12M	—	48	0.0% (0)	4.2% (2)	4.17%	NC[f]	114	5.3% (6)	4.4% (5)	-0.88%	1.000 (1.000)
Corticosteroid injection	3M	—	149	3.4% (5)	4.7% (7)	1.34%	0.752 (0.961)	382	13.6% (52)	6.3% (24)	-7.33%	<0.001 (0.001)
	12M	—	48	2.1% (1)	6.2% (3)	4.17%	0.617 (0.850)	114	13.2% (15)	8.8% (10)	-4.39%	0.359 (0.647)
Morphine or other opioids	3M	—	149	4.0% (6)	4.0% (6)	0.00%	1.000 (1.000)	382	3.4% (13)	5.0% (19)	1.57%	0.264 (0.518)
	12M	—	48	2.1% (1)	10.4% (5)	8.33%	0.134 (0.331)	114	4.4% (5)	2.6% (3)	-1.75%	0.724 (0.935)
Tramadol	3M	—	149	4.0% (6)	3.4% (5)	-0.67%	1.000 (1.000)	382	1.3% (5)	1.6% (6)	0.26%	1.000 (1.000)
	12M	—	48	6.2% (3)	6.2% (3)	0.00%	NC[f]	114	3.5% (4)	3.5% (4)	0.00%	1.000 (1.000)

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
Codeine	3M	—	149	2.0% (3)	2.7% (4)	0.67%	1.000 (1.000)	382	3.1% (12)	2.4% (9)	-0.79%	0.606 (0.850)
	12M	—	48	6.2% (3)	0.0% (0)	-6.25%	NC[f]	114	1.8% (2)	1.8% (2)	0.00%	1.000 (1.000)
Tricyclic antidepressants (for neuropathic pain)	3M	—	149	0.0% (0)	0.0% (0)	0.00%	NC[f]	382	1.3% (5)	1.6% (6)	0.26%	1.000 (1.000)
	12M	—	48	0.0% (0)	0.0% (0)	0.00%	NC[f]	114	2.6% (3)	0.0% (0)	-2.63%	NC[f]
Anticonvulsants	3M	—	149	2.7% (4)	1.3% (2)	-1.34%	0.480 (0.743)	382	2.4% (9)	1.8% (7)	-0.52%	0.724 (0.935)
	12M	—	48	4.2% (2)	4.2% (2)	0.00%	1.000 (1.000)	114	2.6% (3)	3.5% (4)	0.88%	1.000 (1.000)
Methotrexate	3M	—	149	0.7% (1)	0.0% (0)	-0.67%	NC[f]	382	0.8% (3)	0.0% (0)	-0.79%	NC[f]
	12M	—	48	0.0% (0)	0.0% (0)	0.00%	NC[f]	114	0.9% (1)	0.0% (0)	-0.88%	NC[f]
Herbal supplements	3M	—	149	19.5% (29)	20.8% (31)	1.34%	0.850 (1.000)	382	16.8% (64)	16.8% (64)	0.00%	1.000 (1.000)
	12M	—	48	22.9% (11)	20.8% (10)	-2.08%	1.000 (1.000)	114	15.8% (18)	14.9% (17)	-0.88%	1.000 (1.000)

[a]Number of participants with valid initial (i.e. baseline, except for function tests) data and follow-up data for given measure

[b]Continuous measures: 95% confidence interval for paired difference between outcome and initial status; categorical measures: percentage difference between outcome and initial status.

[c]Continuous measures: paired t-test; binary measures: McNemar's test of paired proportions; ordinal measures (perceived benefit from GLA:D Canada, and frequency of knowledge use): paired Wilcoxon signed-rank test. Null hypothesis = no within-subject change in the given outcome. FDR = False discovery rate (p-value correction for multiple comparisons).

[d]Comparison: 12-month versus 3-month response

[e]"Don't know" responses were omitted from hypothesis tests.

[f]Not calculable

Categorized outcome measures

Measure	Outcome category	Hip		Knee	
		3M	12M	3M	12M
Pain intensity					
Numeric pain rating (0-10)	No change or worsened	35.1% (52)	38.8% (19)	30.9% (120)	34.2% (40)
	Negligible improvement (0.1 - 14.9%)	2.0% (3)	0.0% (0)	4.9% (19)	5.1% (6)
	Possible improvement (15 - 29.9%)	15.5% (23)	16.3% (8)	9.5% (37)	9.4% (11)
	Clinically important improvement (≥ 30% and/or zero pain)	47.3% (70)	44.9% (22)	54.6% (212)	51.3% (60)
HOOS/KOOS scores (0-100)					
Pain	No change or worsened	37.8% (56)	28.6% (14)	35.0% (136)	37.1% (43)
	Negligible improvement (0.1 - 4.9 pt)	9.5% (14)	10.2% (5)	7.7% (30)	5.2% (6)
	Possible improvement (5 - 9.9 pt)	15.5% (23)	6.1% (3)	18.5% (72)	13.8% (16)
	Clinically important improvement (≥ 10 pt and/or perfect score)	37.2% (55)	55.1% (27)	38.8% (151)	44.0% (51)
Activities of Daily Living	No change or worsened	40.9% (61)	34.7% (17)	34.0% (132)	34.5% (40)
	Negligible improvement (0.1 - 4.9 pt)	20.1% (30)	12.2% (6)	15.2% (59)	9.5% (11)
	Possible improvement (5 - 9.9 pt)	12.8% (19)	14.3% (7)	16.8% (65)	12.9% (15)
	Clinically important improvement (≥ 10 pt and/or perfect score)	26.2% (39)	38.8% (19)	34.0% (132)	43.1% (50)
Quality of Life	No change or worsened	45.6% (67)	36.7% (18)	38.7% (150)	31.9% (37)

		Hip		Knee	
Measure	**Outcome category**	**3M**	**12M**	**3M**	**12M**
	Negligible improvement (0.1 - 4.9 pt)	0.0% (0)	0.0% (0)	1.0% (4)	0.0% (0)
	Possible improvement (5 - 9.9 pt)	19.7% (29)	14.3% (7)	16.5% (64)	15.5% (18)
	Clinically important improvement (≥ 10 pt and/or perfect score)	34.7% (51)	49.0% (24)	43.8% (170)	52.6% (61)
Sports/recreation	No change or worsened	48.3% (72)	41.7% (20)	46.5% (181)	47.4% (55)
	Negligible improvement (0.1 - 4.9 pt)	0.7% (1)	0.0% (0)	0.0% (0)	0.0% (0)
	Possible improvement (5 - 9.9 pt)	17.4% (26)	6.2% (3)	12.3% (48)	4.3% (5)
	Clinically important improvement (≥ 10 pt and/or perfect score)	33.6% (50)	52.1% (25)	41.1% (160)	48.3% (56)
Function tests					
30-second chair stand: # of stands	No change or worsened	23.0% (28)	—	16.6% (51)	—
	Negligible improvement (0.1 to 1.9 stands)	10.7% (13)	—	10.4% (32)	—
	Clinically important improvement (≥ 2 stands)	66.4% (81)	—	73.0% (224)	—
40m walking test: walking speed	No change or worsened	27.3% (27)	—	16.7% (36)	—
	Negligible improvement (0.1 to 0.19 m/s)	43.4% (43)	—	44.9% (97)	—
	Clinically important improvement (≥ 0.2 m/s)	29.3% (29)	—	38.4% (83)	—

Measure	Outcome category	Hip		Knee	
		3M	12M	3M	12M
Knowledge/self-efficacy					
OA Patient Knowledge Questionnaire (0-30)	No change or worsened	44.7% (42)	47.4% (9)	42.6% (100)	56.8% (25)
	Negligible improvement (0.1 - 9.9%)	22.3% (21)	21.1% (4)	20.4% (48)	13.6% (6)
	Possible improvement (10 - 19.9%)	12.8% (12)	10.5% (2)	20.9% (49)	13.6% (6)
	Substantial improvement (≥ 20% and/or perfect score)	20.2% (19)	21.1% (4)	16.2% (38)	15.9% (7)
Arthritis Self-Efficacy Scale (1-10)	No change or worsened	43.2% (64)	41.7% (20)	41.4% (161)	44.0% (51)
	Negligible improvement (0.1 - 9.9%)	6.8% (10)	10.4% (5)	13.6% (53)	12.1% (14)
	Possible improvement (10 - 19.9%)	14.9% (22)	6.2% (3)	11.3% (44)	11.2% (13)
	Substantial improvement (≥ 20% and/or perfect score)	35.1% (52)	41.7% (20)	33.7% (131)	32.8% (38)

Joint surgery after enrollment

Measure	Time point	Response	Hip 3M: N=149 12M: N=50	Knee 3M: N=390 12M: N=120
Have you had surgery on your hip/knee since you first started the GLA:D Canada education and exercise program?	3M	No	99.3% (145)	98.2% (376)
		Yes	0.7% (1)	1.8% (7)
		Not reported	— (3)	— (7)
	12M	No	76.0% (38)	85.7% (102)
		Yes	24.0% (12)	14.3% (17)
		Not reported	— (0)	— (1)
Any joint replacement	3M	No	99.3% (145)	98.4% (377)
		Yes	0.7% (1)	1.6% (6)
		Not reported	— (3)	— (7)
	12M	No	76.0% (38)	86.6% (103)
		Yes	24.0% (12)	13.4% (16)
		Not reported	— (0)	— (1)
Any arthroscopic procedure	3M	No	100.0% (146)	99.7% (382)
		Yes	0.0% (0)	0.3% (1)
		Not reported	— (3)	— (7)
	12M	No	100.0% (49)	98.3% (114)
		Yes	0.0% (0)	1.7% (2)
		Not reported	— (1)	— (4)
Any other procedure	3M	No	100.0% (146)	99.7% (382)
		Yes	0.0% (0)	0.3% (1)
		Not reported	— (3)	— (7)
	12M	No	100.0% (49)	99.1% (116)
		Yes	0.0% (0)	0.9% (1)
		Not reported	— (1)	— (3)

ALBERTA

Baseline characteristics of GLA:D participants

Results are presented as percentage (count) for categorical measures and mean ± standard deviation for continuous measures.

Measure	Category	Hip (N=116)	Knee (N=235)
Demographics			
Year of enrollment	2017	19.8% (23)	15.7% (37)
	2018	80.2% (93)	84.3% (198)
Gender	Female	75.9% (88)	80.4% (189)
	Male	24.1% (28)	19.6% (46)
Age (y)	—	64.1 ± 8.4 (N = 116)	63.4 ± 8.0 (N = 235)
Age group	< 55	12.1% (14)	12.8% (30)
	55-64	44.0% (51)	43.0% (101)
	65-74	31.9% (37)	36.6% (86)
	≥ 75	12.1% (14)	7.7% (18)
Marital status	Single	4.3% (5)	9.4% (22)
	Married	76.5% (88)	70.6% (166)
	Common-law	0.9% (1)	3.8% (9)
	Living with partner	1.7% (2)	0.9% (2)
	Separated	0.9% (1)	1.7% (4)
	Divorced	7.8% (9)	6.8% (16)
	Widowed	7.8% (9)	6.8% (16)
	Not reported	— (1)	— (0)
Highest education obtained	Some or completed elementary school	0.0% (0)	1.3% (3)
	Some or completed high school	13.9% (16)	18.7% (44)
	Some or completed trade or community college program	33.9% (39)	31.9% (75)
	Some or completed university	47.8% (55)	41.3% (97)
	Other	4.3% (5)	6.8% (16)
	Not reported	— (1)	— (0)
Employment status	Working full-time	22.1% (25)	20.9% (49)
	Working part-time	15.0% (17)	14.1% (33)
	Not working, on benefits	4.4% (5)	4.7% (11)

Measure	Category	Hip (N=116)	Knee (N=235)
	Not working, seeking work	0.0% (0)	1.3% (3)
	Retired	46.9% (53)	52.6% (123)
	Homemaker	6.2% (7)	3.8% (9)
	Other	5.3% (6)	2.6% (6)
	Not reported	— (3)	— (1)
Health factors			
Smoking status	No	95.7% (111)	94.9% (223)
	Yes	4.3% (5)	5.1% (12)
Body-mass index (BMI, kg/m²)	—	29.4 ± 6.0 (N = 114)	32.0 ± 6.9 (N = 234)
BMI category	Underweight (< 18.5)	0.9% (1)	0.0% (0)
	Normal weight (18.5 - 24.9)	20.2% (23)	15.4% (36)
	Overweight (25 - 29.9)	43.0% (49)	28.2% (66)
	Obese (≥ 30)	36.0% (41)	56.4% (132)
	Not reported	— (2)	— (1)
Number of comorbid conditions (excluding osteoarthritis)	None	20.7% (24)	18.3% (43)
	1	32.8% (38)	29.8% (70)
	2	21.6% (25)	25.5% (60)
	3	14.7% (17)	12.8% (30)
	4 or more	10.3% (12)	13.6% (32)
Congestive heart failure	Yes	0.9% (1)	0.0% (0)
	Not reported	— (0)	— (1)
Heart attack (myocardial infarction)	Yes	0.0% (0)	1.3% (3)
	Not reported	— (0)	— (1)
High blood pressure	Yes	40.5% (47)	45.3% (106)
	Not reported	— (0)	— (1)
High cholesterol	Yes	20.7% (24)	25.6% (60)
	Not reported	— (0)	— (1)
Stroke or cerebrovascular accident	Yes	0.9% (1)	1.7% (4)
	Not reported	— (0)	— (1)
Asthma or chronic lung disease	Yes	7.8% (9)	11.5% (27)
Diabetes	Yes	8.6% (10)	11.1% (26)
Kidney disease	Yes	0.9% (1)	1.3% (3)
Liver disease	Yes	0.9% (1)	0.0% (0)

Measure	Category	Hip (N=116)	Knee (N=235)
	Not reported	— (0)	— (1)
Anaemia or other blood disease	Yes	0.9% (1)	3.8% (9)
Stomach/intestinal ulcers	Yes	1.7% (2)	2.6% (6)
	Not reported	— (0)	— (1)
Depression	Yes	15.5% (18)	15.1% (35)
	Not reported	— (0)	— (3)
Cancer (excluding skin cancer)	Yes	5.2% (6)	1.7% (4)
Lower back pain	Yes	28.4% (33)	21.5% (50)
	Not reported	— (0)	— (2)
History of hip/knee symptoms			
Duration of symptoms in affected hip/knee (years)	—	5.4 ± 6.6 (N = 115)	6.3 ± 7.1 (N = 234)
Categorized duration of symptoms (years)	Less than 1	7.8% (9)	11.5% (27)
	1 to 1.9	19.1% (22)	9.8% (23)
	2 to 4.9	33.9% (39)	29.5% (69)
	5 to 9.9	25.2% (29)	23.9% (56)
	10 or more	13.9% (16)	25.2% (59)
	Not reported	— (1)	— (1)
Previous injury to affected hip/knee	No	80.9% (93)	52.1% (122)
	Yes	19.1% (22)	47.9% (112)
	Not reported	— (1)	— (1)
Are you so troubled by your hip/knee problems that you want surgery?	No	59.6% (68)	66.5% (155)
	Yes	40.4% (46)	33.5% (78)
	Not reported	— (2)	— (2)
Previous surgery on affected joint			
Have you had surgery on your hip/knee?	No	92.2% (107)	76.0% (177)
	Yes	7.8% (9)	24.0% (56)
	Not reported	— (0)	— (2)
Specify surgery type (all that apply):	Joint replacement	6.0% (7)	3.4% (8)
	Arthroscopic procedure	0.9% (1)	16.3% (38)
	Other surgery	2.6% (3)	9.0% (21)
	Not reported	— (0)	— (2)
Physical activity			

Measure	Category	Hip (N=116)	Knee (N=235)
Are you afraid that your joints will be damaged from physical activity and exercise?	No	74.1% (86)	67.9% (159)
	Yes	25.9% (30)	32.1% (75)
	Not reported	— (0)	— (1)
In a typical week, how many days have you been physically active at least 30 minutes per day?	None	7.8% (9)	9.0% (21)
	1 to 3	36.2% (42)	35.0% (82)
	4 to 6	44.8% (52)	38.0% (89)
	7	11.2% (13)	17.9% (42)
	Not reported	— (0)	— (1)
Medications			
Have you taken any medications including herbal or dietary supplements for your hip/knee in the last 3 months?	No	24.3% (28)	26.1% (61)
	Yes	75.7% (87)	73.9% (173)
	Not reported	— (1)	— (1)
Specify medications (select all that apply):	Acetaminophen (e.g. Tylenol plain or extra strength)	50.0% (57)	51.7% (121)
	Non-steroidal anti-inflammatory drugs/NSAID (e.g. ibuprofen, Aleve, aspirin)	55.3% (63)	46.6% (109)
	Topical NSAID cream	39.5% (45)	44.0% (103)
	Glucosamine	23.7% (27)	26.9% (63)
	Hyaluronic acid injection into your joint	2.6% (3)	6.4% (15)
	Corticosteroid (cortisone) injection into your joint	24.6% (28)	22.6% (53)
	Morphine or other opioids (e.g. Tylenol No. 3)	7.9% (9)	6.0% (14)
	Tramadol	5.3% (6)	9.8% (23)
	Codeine	3.5% (4)	4.3% (10)
	Tricyclic antidepressants (for neuropathic pain)	0.9% (1)	3.4% (8)
	Anticonvulsants (e.g. Gabapentin)	3.5% (4)	3.4% (8)
	Methotrexate	0.0% (0)	0.4% (1)
	Herbal supplements	26.3% (30)	26.5% (62)

Patient-reported scales

Measure	Category	Hip (N=116)	Knee (N=235)
Numeric pain rating: hip/knee pain in the past month (0-10)	—	5.6 ± 2.1 (N = 116)	5.2 ± 2.1 (N = 235)
EQ-5D utility score	—	0.7 ± 0.2 (N = 115)	0.7 ± 0.2 (N = 235)
Arthritis Self-Efficacy Scale (1=lowest self-efficacy, 10=highest)	—	5.8 ± 1.8 (N = 116)	6.0 ± 2.0 (N = 234)
HOOS/KOOS subscale (0=extreme symptoms, 100=no symptoms)	Activities of daily living (ADL)	56.9 ± 17.1 (N = 116)	62.5 ± 18.4 (N = 235)
	Pain	52.0 ± 15.3 (N = 116)	54.0 ± 16.0 (N = 235)
	Quality of life	36.5 ± 18.6 (N = 116)	34.1 ± 18.3 (N = 235)
	Sports/recreation	31.5 ± 20.6 (N = 116)	20.7 ± 20.2 (N = 235)

3-month survey: GLA:D Canada participation and satisfaction with program

Measure	Category	Hip (N=79)	Knee (N=143)
How many education sessions did you attend? (0-3)	0	1.3% (1)	0.7% (1)
	1	25.6% (20)	23.1% (33)
	2	62.8% (49)	65.7% (94)
	3	10.3% (8)	10.5% (15)
	Not reported	— (1)	
How many exercise sessions did you attend? (0-12, categorized)	0-5	1.3% (1)	
	6-10	24.1% (19)	25.9% (37)
	11-12	74.7% (59)	74.1% (106)
How much have you benefited from the GLA:D program?	1 - Not at all beneficial	1.3% (1)	0.7% (1)
	2	1.3% (1)	2.8% (4)
	3 - Neutral	20.3% (16)	8.4% (12)
	4	31.6% (25)	36.4% (52)
	5 - Very beneficial	45.6% (36)	51.7% (74)
How often do you use what you have learned from the GLA:D program in your daily life?	Never	2.5% (2)	2.1% (3)
	Every month	3.8% (3)	3.5% (5)
	Every week	32.9% (26)	35.7% (51)
	Every day	45.6% (36)	44.8% (64)
	Several times a day	10.1% (8)	12.6% (18)
	Don't know	5.1% (4)	1.4% (2)
How satisfied are you with the outcome of the GLA:D program?	1 - Not at all satisfied	1.3% (1)	0.7% (1)
	2	3.8% (3)	2.8% (4)
	3 - Neutral	20.3% (16)	12.7% (18)
	4	34.2% (27)	30.3% (43)
	5 - Very satisfied	40.5% (32)	53.5% (76)
	Not reported	— (0)	— (1)
Based on your experience, how much would you be willing to pay to take part in the GLA:D program?	$100 or less	31.6% (24)	22.5% (31)
	$101 to $150	15.8% (12)	8.7% (12)
	$151 to $200	14.5% (11)	12.3% (17)
	$201 to $250	7.9% (6)	13.8% (19)
	$251 to $300	14.5% (11)	18.1% (25)
	$301 or more	15.8% (12)	24.6% (34)
	Not reported	— (3)	— (5)

Participant outcomes

Changes from initial status to follow-up

Measure	Time	Category	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
			Hip					Knee				
Pain intensity												
Numeric pain rating	3M	—	79	5.4 ± 2.0	4.5 ± 2.1	-1.4, -0.4	<0.001 (0.006)	143	5.1 ± 2.0	3.7 ± 2.3	-1.8, -1.0	<0.001 (<0.001)
	12M	—	20	4.8 ± 2.6	3.7 ± 2.7	-2.8, 0.7	0.235 (0.609)	26	5.4 ± 2.6	4.4 ± 2.3	-2.0, 0.1	0.066 (0.271)
HOOS/KOOS scores												
Pain	3M	—	78	52.6 ± 15.3	57.2 ± 16.4	1.4, 7.9	0.006 (0.033)	143	55.0 ± 16.7	60.3 ± 19.0	3.2, 7.5	<0.001 (<0.001)
	12M	—	20	57.2 ± 15.7	65.0 ± 20.7	-5.3, 20.8	0.231 (0.609)	26	50.6 ± 18.7	55.1 ± 23.4	-1.2, 10.2	0.118 (0.388)
Activities of Daily Living	3M	—	78	57.7 ± 17.4	62.7 ± 19.1	1.7, 8.3	0.003 (0.023)	143	64.2 ± 18.8	69.2 ± 20.8	2.8, 7.1	<0.001 (<0.001)
	12M	—	20	59.0 ± 20.1	66.7 ± 19.1	-4.9, 20.3	0.218 (0.597)	26	59.2 ± 19.3	66.0 ± 23.3	0.35, 13.08	0.039 (0.196)
Sports/recreation	3M	—	77	33.1 ± 20.9	34.9 ± 23.0	-2.1, 5.7	0.364 (0.789)	143	22.8 ± 20.8	27.6 ± 22.6	2.2, 7.3	<0.001 (0.004)
	12M	—	19	36.5 ± 23.6	42.1 ± 25.8	-8.0, 19.2	0.398 (0.802)	26	15.1 ± 18.4	22.9 ± 24.0	1.6, 14.0	0.016 (0.084)
Quality of Life	3M	—	78	37.4 ± 17.6	41.2 ± 20.2	0.41, 7.12	0.028 (0.147)	143	34.7 ± 17.9	42.3 ± 20.1	5.2, 10.1	<0.001 (<0.001)
	12M	—	19	40.1 ± 23.3	46.1 ± 25.0	-10.3, 22.1	0.452 (0.804)	26	30.3 ± 19.6	40.1 ± 23.9	3.4, 16.3	0.004 (0.027)

Measure	Time	Category	Hip					Knee				
			N^a	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N^a	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
Function tests												
30-second chair stand: # of stands	3M (last session)	—	53	13.2 ± 6.0	16.3 ± 8.9	1.2, 5.0	0.002 (0.014)	111	13.1 ± 6.5	16.9 ± 8.1	3.1, 4.6	<0.001 (<0.001)
40-m walk test: speed (m/s)	3M (last session)	—	26	1.2 ± 0.4	1.3 ± 0.4	0.05, 0.18	0.001 (0.010)	76	1.2 ± 0.4	1.3 ± 0.5	0.06, 0.16	<0.001 (<0.001)
Other outcomes												
In a typical week, how many days have you been physically active at least 30 minutes per day?	3M	—	79	3.6 ± 2.1	4.1 ± 1.9	-0.02, 0.93	0.059 (0.269)	142	4.1 ± 2.1	4.4 ± 1.9	-0.02, 0.56	0.069 (0.271)
	12M	—	20	3.8 ± 2.3	3.4 ± 2.2	-1.4, 0.6	0.402 (0.802)	25	3.7 ± 2.0	4.4 ± 2.3	-0.06, 1.42	0.071 (0.271)
Body-mass index (kg/m²)	3M	—	76	29.4 ± 5.6	29.0 ± 5.3	-0.58, -0.17	<0.001 (0.006)	140	32.1 ± 7.2	32.4 ± 8.3	-0.48, 1.08	0.450 (0.804)
	12M	—	20	31.3 ± 6.5	30.3 ± 6.1	-1.6, -0.5	<0.001 (0.006)	26	32.1 ± 6.9	31.6 ± 6.9	-1.1, 0.1	0.114 (0.387)
BMI category: overweight or obese (≥ 25 kg/m²)	3M	—	76	82.9% (63)	82.9% (63)	0.00%	1.000 (1.000)	140	85.0% (119)	86.4% (121)	1.43%	0.480 (0.804)
	12M	—	20	85.0% (17)	85.0% (17)	0.00%	NC[f]	26	80.8% (21)	80.8% (21)	0.00%	1.000 (1.000)
BMI category: obese (≥ 30 kg/m²)	3M	—	76	38.2% (29)	34.2% (26)	-3.95%	0.371 (0.789)	140	54.3% (76)	56.4% (79)	2.14%	0.248 (0.615)
	12M	—	20	50.0% (10)	40.0% (8)	-10.00%	0.480 (0.804)	26	61.5% (16)	57.7% (15)	-3.85%	1.000 (1.000)
EQ-5D-5L health utility	3M	—	78	0.68 ± 0.17	0.69 ± 0.17	-0.03, 0.05	0.568 (0.930)	142	0.71 ± 0.17	0.74 ± 0.20	0.01, 0.06	0.003 (0.020)
	12M	—	19	0.71 ± 0.19	0.71 ± 0.20	-0.15, 0.13	0.893 (1.000)	26	0.64 ± 0.19	0.67 ± 0.23	-0.03, 0.09	0.289 (0.662)

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
OA Patient Knowledge score	3M	—	41	22.4 ± 4.9	23.4 ± 3.3	-0.07, 2.17	0.066 (0.271)	86	22.1 ± 3.7	22.4 ± 3.8	-0.25, 0.90	0.266 (0.647)
Arthritis Self-Efficacy Scale	3M	—	79	5.8 ± 1.7	5.7 ± 1.9	-0.44, 0.30	0.710 (0.979)	143	6.0 ± 1.9	6.3 ± 2.0	-0.02, 0.62	0.066 (0.271)
	12M	—	19	6.0 ± 1.8	5.9 ± 2.2	-1.3, 1.1	0.817 (1.000)	26	5.9 ± 2.1	6.1 ± 2.2	-0.64, 1.01	0.652 (0.956)
Are you so troubled by your hip/knee problems that you want surgery?	3M	—	75	40.0% (30)	46.7% (35)	6.67%	0.131 (0.388)	141	33.3% (47)	31.2% (44)	-2.13%	0.663 (0.956)
	12M	—	20	55.0% (11)	55.0% (11)	0.00%	1.000 (1.000)	25	44.0% (11)	32.0% (8)	-12.00%	0.450 (0.804)
Are you afraid that your joints will be damaged from physical activity and exercise?	3M	—	78	23.1% (18)	15.4% (12)	-7.69%	0.114 (0.387)	142	32.4% (46)	13.4% (19)	-19.01%	<0.001 (<0.001)
	12M	—	19	42.1% (8)	21.1% (4)	-21.05%	0.134 (0.388)	25	36.0% (9)	20.0% (5)	-16.00%	0.221 (0.597)
How much have you benefited from the GLA:D program?[d]	12M	1 - Not at all beneficial	19	5.3% (1)	0.0% (0)	-5.26%	0.340 (0.764)	23	0.0% (0)	4.3% (1)	4.35%	0.429 (0.804)
	12M	2						23	4.3% (1)	4.3% (1)	0.00%	
	12M	3 - Neutral	19	10.5% (2)	31.6% (6)	21.05%		23	8.7% (2)	8.7% (2)	0.00%	
	12M	4	19	36.8% (7)	36.8% (7)	0.00%		23	34.8% (8)	30.4% (7)	-4.35%	
	12M	5 - Very beneficial	19	47.4% (9)	31.6% (6)	-15.79%		23	52.2% (12)	52.2% (12)	0.00%	
	12M	Never	19	5.3% (1)	15.8% (3)	10.53%	0.001 (0.010)	23	0.0% (0)	8.7% (2)	8.70%	0.057 (0.269)
	12M	Every month	19	5.3% (1)	10.5% (2)	5.26%		23	4.3% (1)	0.0% (0)	-4.35%	

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
How often do you use what you have learned from the GLA:D program in your daily life?[d]	12M	Every week	19	26.3% (5)	31.6% (6)	5.26%		23	26.1% (6)	43.5% (10)	17.39%	
	12M	Every day	19	47.4% (9)	26.3% (5)	-21.05%		23	56.5% (13)	47.8% (11)	-8.70%	
	12M	Several times a day	19	15.8% (3)	0.0% (0)	-15.79%		23	8.7% (2)	0.0% (0)	-8.70%	
	12M	Don't know[e]	19	0.0% (0)	15.8% (3)	15.79%		23	4.3% (1)	0.0% (0)	-4.35%	
Employment status: currently working (full- or part-time)	3M	—	78	33.3% (26)	34.6% (27)	1.28%	1.000 (1.000)	142	30.3% (43)	26.1% (37)	-4.23%	0.077 (0.287)
	12M	—	20	40.0% (8)	45.0% (9)	5.00%	1.000 (1.000)	26	23.1% (6)	19.2% (5)	-3.85%	1.000 (1.000)
Employment status: Not working and on benefits	3M	—	78	5.1% (4)	3.8% (3)	-1.28%	1.000 (1.000)	142	4.2% (6)	3.5% (5)	-0.70%	1.000 (1.000)
	12M	—	20	5.0% (1)	0.0% (0)	-5.00%	NC[f]	26	3.8% (1)	0.0% (0)	-3.85%	NC[f]
Medications												
Have you taken any medications for your hip/knee in the last 3 months?	3M	—	78	73.1% (57)	71.8% (56)	-1.28%	1.000 (1.000)	143	73.4% (105)	70.6% (101)	-2.80%	0.571 (0.930)
	12M	—	20	75.0% (15)	55.0% (11)	-20.00%	0.289 (0.662)	26	76.9% (20)	69.2% (18)	-7.69%	0.617 (0.945)
Any injection(s) reported (hyaluronic acid, corticosteroid)	3M	—	78	26.9% (21)	16.7% (13)	-10.26%	0.080 (0.289)	143	28.7% (41)	12.6% (18)	-16.08%	<0.001 (0.002)
	12M	—	20	15.0% (3)	15.0% (3)	0.00%	1.000 (1.000)	26	23.1% (6)	3.8% (1)	-19.23%	0.131 (0.388)
	3M	—	78	12.8% (10)	12.8% (10)	0.00%	1.000 (1.000)	143	14.7% (21)	10.5% (15)	-4.20%	0.181 (0.514)

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
Any opioid use reported (morphine, tramadol, codeine)	12M	—	20	5.0% (1)	10.0% (2)	5.00%	1.000 (1.000)	26	19.2% (5)	23.1% (6)	3.85%	1.000 (1.000)
Acetaminophen	3M	—	78	51.3% (40)	47.4% (37)	-3.85%	0.628 (0.945)	143	53.8% (77)	49.7% (71)	-4.20%	0.417 (0.804)
	12M	—	20	60.0% (12)	40.0% (8)	-20.00%	0.289 (0.662)	26	61.5% (16)	53.8% (14)	-7.69%	0.724 (0.979)
NSAID	3M	—	78	48.7% (38)	44.9% (35)	-3.85%	0.677 (0.956)	143	47.6% (68)	43.4% (62)	-4.20%	0.391 (0.802)
	12M	—	20	45.0% (9)	35.0% (7)	-10.00%	0.683 (0.956)	26	53.8% (14)	34.6% (9)	-19.23%	0.131 (0.388)
Topical NSAID cream	3M	—	78	38.5% (30)	35.9% (28)	-2.56%	0.773 (1.000)	143	45.5% (65)	42.0% (60)	-3.50%	0.458 (0.804)
	12M	—	20	50.0% (10)	40.0% (8)	-10.00%	0.617 (0.945)	26	50.0% (13)	42.3% (11)	-7.69%	0.724 (0.979)
Glucosamine	3M	—	78	21.8% (17)	21.8% (17)	0.00%	1.000 (1.000)	143	31.5% (45)	28.0% (40)	-3.50%	0.404 (0.802)
	12M	—	20	20.0% (4)	10.0% (2)	-10.00%	0.480 (0.804)	26	30.8% (8)	34.6% (9)	3.85%	1.000 (1.000)
Hyaluronic acid injection	3M	—	78	3.8% (3)	2.6% (2)	-1.28%	1.000 (1.000)	143	8.4% (12)	6.3% (9)	-2.10%	0.628 (0.945)
	12M	—	20	0.0% (0)	5.0% (1)	5.00%	NC[f]	26	0.0% (0)	3.8% (1)	3.85%	NC[f]
Corticosteroid injection	3M	—	78	24.4% (19)	15.4% (12)	-8.97%	0.121 (0.388)	143	22.4% (32)	9.8% (14)	-12.59%	<0.001 (0.008)
	12M	—	20	15.0% (3)	10.0% (2)	-5.00%	1.000 (1.000)	26	23.1% (6)	0.0% (0)	-23.08%	NC[f]

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
Morphine or other opioids	3M	—	78	7.7% (6)	5.1% (4)	-2.56%	0.683 (0.956)	143	4.9% (7)	4.2% (6)	-0.70%	1.000 (1.000)
	12M	—	20	0.0% (0)	0.0% (0)	0.00%	**NC[f]**	26	11.5% (3)	19.2% (5)	7.69%	0.480 (0.804)
Tramadol	3M	—	78	6.4% (5)	9.0% (7)	2.56%	0.617 (0.945)	143	9.1% (13)	3.5% (5)	-5.59%	0.013 (0.076)
	12M	—	20	5.0% (1)	10.0% (2)	5.00%	1.000 (1.000)	26	15.4% (4)	3.8% (1)	-11.54%	0.248 (0.615)
Codeine	3M	—	78	2.6% (2)	1.3% (1)	-1.28%	1.000 (1.000)	143	4.2% (6)	2.8% (4)	-1.40%	0.683 (0.956)
	12M	—	20	0.0% (0)	0.0% (0)	0.00%	**NC[f]**	26	0.0% (0)	0.0% (0)	0.00%	**NC[f]**
Tricyclic antidepressants (for neuropathic pain)	3M	—	78	1.3% (1)	1.3% (1)	0.00%	1.000 (1.000)	143	2.8% (4)	4.2% (6)	1.40%	0.480 (0.804)
	12M	—	20	0.0% (0)	0.0% (0)	0.00%	**NC[f]**	26	11.5% (3)	7.7% (2)	-3.85%	1.000 (1.000)
Anticonvulsants	3M	—	78	3.8% (3)	1.3% (1)	-2.56%	0.617 (0.945)	143	2.8% (4)	2.1% (3)	-0.70%	1.000 (1.000)
	12M	—	20	0.0% (0)	0.0% (0)	0.00%	**NC[f]**	26	3.8% (1)	7.7% (2)	3.85%	1.000 (1.000)
Methotrexate	3M	—	78	0.0% (0)	0.0% (0)	0.00%	**NC[f]**	143	0.7% (1)	0.0% (0)	-0.70%	**NC[f]**
	12M	—	20	0.0% (0)	0.0% (0)	0.00%	**NC[f]**	26	3.8% (1)	3.8% (1)	0.00%	**NC[f]**
Herbal supplements	3M	—	78	23.1% (18)	20.5% (16)	-2.56%	0.752 (1.000)	143	23.8% (34)	22.4% (32)	-1.40%	0.838 (1.000)

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
	12M	—	20	25.0% (5)	10.0% (2)	-15.00%	0.371 (0.789)	26	34.6% (9)	30.8% (8)	-3.85%	1.000 (1.000)

[a]Number of participants with valid initial (i.e. baseline, except for function tests) data and follow-up data for given measure

[b]Continuous measures: 95% confidence interval for paired difference between outcome and initial status; categorical measures: percentage difference between outcome and initial status.

[c]Continuous measures: paired t-test; binary measures: McNemar's test of paired proportions; ordinal measures (perceived benefit from GLA:D Canada, and frequency of knowledge use): paired Wilcoxon signed-rank test. Null hypothesis = no within-subject change in the given outcome. FDR = False discovery rate (p-value correction for multiple comparisons).

[d]Comparison: 12-month versus 3-month response

[e]"Don't know" responses were omitted from hypothesis tests.

[f]Not calculable

Categorized outcome measures

		Hip		Knee	
Measure	**Outcome category**	**3M**	**12M**	**3M**	**12M**
Pain intensity					
Numeric pain rating (0-10)	No change or worsened	43.0% (34)	60.0% (12)	37.1% (53)	46.2% (12)
	Negligible improvement (0.1 - 14.9%)	11.4% (9)	5.0% (1)	2.1% (3)	3.8% (1)
	Possible improvement (15 - 29.9%)	17.7% (14)	5.0% (1)	13.3% (19)	15.4% (4)
	Clinically important improvement (≥ 30% and/or zero pain)	27.8% (22)	30.0% (6)	47.6% (68)	34.6% (9)
HOOS/KOOS scores (0-100)					
Pain	No change or worsened	43.6% (34)	55.0% (11)	41.3% (59)	46.2% (12)
	Negligible improvement (0.1 - 4.9 pt)	7.7% (6)	5.0% (1)	7.7% (11)	7.7% (2)
	Possible improvement (5 - 9.9 pt)	14.1% (11)	5.0% (1)	21.0% (30)	11.5% (3)
	Clinically important improvement (≥ 10 pt and/or perfect score)	34.6% (27)	35.0% (7)	30.1% (43)	34.6% (9)
Activities of Daily Living	No change or worsened	37.2% (29)	40.0% (8)	35.0% (50)	38.5% (10)
	Negligible improvement (0.1 - 4.9 pt)	16.7% (13)	15.0% (3)	17.5% (25)	15.4% (4)
	Possible improvement (5 - 9.9 pt)	11.5% (9)	15.0% (3)	15.4% (22)	7.7% (2)
	Clinically important improvement (≥ 10 pt and/or perfect score)	34.6% (27)	30.0% (6)	32.2% (46)	38.5% (10)
Quality of Life	No change or worsened	47.4% (37)	57.9% (11)	40.6% (58)	46.2% (12)

Measure	Outcome category	Hip		Knee	
		3M	12M	3M	12M
	Negligible improvement (0.1 - 4.9 pt)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
	Possible improvement (5 - 9.9 pt)	16.7% (13)	5.3% (1)	18.9% (27)	7.7% (2)
	Clinically important improvement (≥ 10 pt and/or perfect score)	35.9% (28)	36.8% (7)	40.6% (58)	46.2% (12)
Sports/recreation	No change or worsened	59.7% (46)	63.2% (12)	49.7% (71)	53.8% (14)
	Negligible improvement (0.1 - 4.9 pt)	0.0% (0)	0.0% (0)	0.7% (1)	0.0% (0)
	Possible improvement (5 - 9.9 pt)	11.7% (9)	0.0% (0)	13.3% (19)	7.7% (2)
	Clinically important improvement (≥ 10 pt and/or perfect score)	28.6% (22)	36.8% (7)	36.4% (52)	38.5% (10)
Function tests					
30-second chair stand: # of stands	No change or worsened	28.3% (15)	—	21.6% (24)	—
	Negligible improvement (0.1 to 1.9 stands)	7.5% (4)	—	4.5% (5)	—
	Clinically important improvement (≥ 2 stands)	64.2% (34)	—	73.9% (82)	—
40m walking test: walking speed	No change or worsened	23.1% (6)	—	36.8% (28)	—
	Negligible improvement (0.1 to 0.19 m/s)	34.6% (9)	—	39.5% (30)	—
	Clinically important improvement (≥ 0.2 m/s)	42.3% (11)	—	23.7% (18)	—
Knowledge/self-efficacy					

Measure	Outcome category	Hip		Knee	
		3M	12M	3M	12M
OA Patient Knowledge Questionnaire (0-30)	No change or worsened	48.8% (20)	0.0% (0)	59.3% (51)	0.0% (0)
	Negligible improvement (0.1 - 9.9%)	26.8% (11)	0.0% (0)	14.0% (12)	0.0% (0)
	Possible improvement (10 - 19.9%)	14.6% (6)	0.0% (0)	15.1% (13)	0.0% (0)
	Substantial improvement (≥ 20% and/or perfect score)	9.8% (4)	0.0% (0)	11.6% (10)	0.0% (0)
Arthritis Self-Efficacy Scale (1-10)	No change or worsened	51.9% (41)	52.6% (10)	42.7% (61)	46.2% (12)
	Negligible improvement (0.1 - 9.9%)	10.1% (8)	5.3% (1)	7.7% (11)	0.0% (0)
	Possible improvement (10 - 19.9%)	10.1% (8)	5.3% (1)	8.4% (12)	7.7% (2)
	Substantial improvement (≥ 20% and/or perfect score)	27.8% (22)	36.8% (7)	41.3% (59)	46.2% (12)

Joint surgery after enrollment

Measure	Time point	Response	Hip 3M: N=79 12M: N=21	Knee 3M: N=143 12M: N=27
Have you had surgery on your hip/knee since you first started the GLA:D Canada education and exercise program?	3M	No	96.2% (76)	97.9% (140)
		Yes	3.8% (3)	2.1% (3)
	12M	No	61.9% (13)	81.5% (22)
		Yes	38.1% (8)	18.5% (5)
Any joint replacement	3M	No	96.2% (76)	97.9% (140)
		Yes	3.8% (3)	2.1% (3)
	12M	No	61.9% (13)	85.2% (23)
		Yes	38.1% (8)	14.8% (4)
Any arthroscopic procedure	3M	No	100.0% (79)	100.0% (143)
	12M	No	100.0% (20)	96.2% (25)
		Yes	0.0% (0)	3.8% (1)
		Not reported	— (1)	— (1)
Any other procedure	3M	No	100.0% (79)	100.0% (143)
	12M	No	95.0% (19)	100.0% (26)
		Yes	5.0% (1)	0.0% (0)
		Not reported	— (1)	— (1)

BRITISH COLUMBIA

Baseline characteristics of GLA:D participants

Results are presented as percentage (count) for categorical measures and mean ± standard deviation for continuous measures.

Measure	Category	Hip (N=58)	Knee (N=103)
Demographics			
Year of enrollment	2017	19.0% (11)	33.0% (34)
	2018	81.0% (47)	67.0% (69)
Gender	Female	81.0% (47)	78.4% (80)
	Male	19.0% (11)	21.6% (22)
	Not reported	— (0)	— (1)
Age (y)	—	66.6 ± 6.6 (N = 58)	66.0 ± 8.6 (N = 103)
Age group	< 55	1.7% (1)	9.7% (10)
	55-64	34.5% (20)	32.0% (33)
	65-74	53.4% (31)	40.8% (42)
	≥ 75	10.3% (6)	17.5% (18)
Marital status	Single	3.4% (2)	10.7% (11)
	Married	65.5% (38)	62.1% (64)
	Common-law	6.9% (4)	4.9% (5)
	Separated	1.7% (1)	1.9% (2)
	Divorced	13.8% (8)	6.8% (7)
	Widowed	8.6% (5)	13.6% (14)
Highest education obtained	Some or completed elementary school	0.0% (0)	1.0% (1)
	Some or completed high school	13.8% (8)	8.7% (9)
	Some or completed trade or community college program	20.7% (12)	20.4% (21)
	Some or completed university	51.7% (30)	61.2% (63)
	Other	13.8% (8)	8.7% (9)
Employment status	Working full-time	13.8% (8)	14.6% (15)
	Working part-time	10.3% (6)	7.8% (8)
	Not working, on benefits	0.0% (0)	2.9% (3)
	Retired	74.1% (43)	67.0% (69)
	Homemaker	0.0% (0)	5.8% (6)

Measure	Category	Hip (N=58)	Knee (N=103)
	Other	1.7% (1)	1.9% (2)
Health factors			
Smoking status	No	98.3% (57)	100.0% (103)
	Yes	1.7% (1)	0.0% (0)
Body-mass index (BMI, kg/m²)	—	27.0 ± 6.1 (N = 57)	29.3 ± 6.2 (N = 101)
BMI category	Normal weight (18.5 - 24.9)	36.8% (21)	25.7% (26)
	Overweight (25 - 29.9)	43.9% (25)	36.6% (37)
	Obese (≥ 30)	19.3% (11)	37.6% (38)
	Not reported	— (1)	— (2)
Number of comorbid conditions (excluding osteoarthritis)	None	32.8% (19)	23.3% (24)
	1	37.9% (22)	33.0% (34)
	2	10.3% (6)	15.5% (16)
	3	8.6% (5)	15.5% (16)
	4 or more	10.3% (6)	12.6% (13)
Congestive heart failure	Yes	1.7% (1)	2.9% (3)
Heart attack (myocardial infarction)	Yes	0.0% (0)	5.8% (6)
High blood pressure	Yes	27.6% (16)	34.3% (35)
	Not reported	— (0)	— (1)
High cholesterol	Yes	19.0% (11)	21.4% (22)
Stroke or cerebrovascular accident	Yes	3.4% (2)	2.9% (3)
	Not reported	— (0)	— (1)
Asthma or chronic lung disease	Yes	14.0% (8)	7.8% (8)
	Not reported	— (1)	— (0)
Diabetes	Yes	3.4% (2)	5.8% (6)
Kidney disease	Yes	1.7% (1)	1.9% (2)
Liver disease	Yes	0.0% (0)	1.0% (1)
Anaemia or other blood disease	Yes	5.2% (3)	4.9% (5)
Stomach/intestinal ulcers	Yes	0.0% (0)	1.9% (2)
Depression	Yes	8.6% (5)	15.5% (16)
Cancer (excluding skin cancer)	Yes	5.2% (3)	5.8% (6)
Lower back pain	Yes	25.9% (15)	25.2% (26)

Measure	Category	Hip (N=58)	Knee (N=103)
History of hip/knee symptoms			
Duration of symptoms in affected hip/knee (years)	—	4.0 ± 4.6 (N = 58)	7.0 ± 6.8 (N = 102)
Categorized duration of symptoms (years)	Less than 1	8.6% (5)	11.8% (12)
	1 to 1.9	27.6% (16)	8.8% (9)
	2 to 4.9	39.7% (23)	24.5% (25)
	5 to 9.9	8.6% (5)	23.5% (24)
	10 or more	15.5% (9)	31.4% (32)
	Not reported	— (0)	— (1)
Previous injury to affected hip/knee	No	86.2% (50)	52.4% (54)
	Yes	13.8% (8)	47.6% (49)
Are you so troubled by your hip/knee problems that you want surgery?	No	59.6% (34)	67.6% (69)
	Yes	40.4% (23)	32.4% (33)
	Not reported	— (1)	— (1)
Previous surgery on affected joint			
Have you had surgery on your hip/knee?	No	86.0% (49)	73.5% (75)
	Yes	14.0% (8)	26.5% (27)
	Not reported	— (1)	— (1)
Specify surgery type (all that apply):	Joint replacement	14.0% (8)	2.9% (3)
	Arthroscopic procedure	1.8% (1)	23.5% (24)
	Other surgery	1.8% (1)	5.9% (6)
	Not reported	— (1)	— (1)
Physical activity			
Are you afraid that your joints will be damaged from physical activity and exercise?	No	79.3% (46)	69.9% (72)
	Yes	20.7% (12)	30.1% (31)
In a typical week, how many days have you been physically active at least 30 minutes per day?	None	5.2% (3)	4.9% (5)
	1 to 3	29.3% (17)	27.5% (28)
	4 to 6	31.0% (18)	43.1% (44)
	7	34.5% (20)	24.5% (25)
	Not reported	— (0)	— (1)
Medications			
	No	32.8% (19)	18.4% (19)

Measure	Category	Hip (N=58)	Knee (N=103)
Have you taken any medications including herbal or dietary supplements for your hip/knee in the last 3 months?	Yes	67.2% (39)	81.6% (84)
Specify medications (select all that apply):	Acetaminophen (e.g. Tylenol plain or extra strength)	46.6% (27)	55.3% (57)
	Non-steroidal anti-inflammatory drugs/NSAID (e.g. ibuprofen, Aleve, aspirin)	37.9% (22)	45.6% (47)
	Topical NSAID cream	22.4% (13)	49.5% (51)
	Glucosamine	19.0% (11)	26.2% (27)
	Hyaluronic acid injection into your joint	3.4% (2)	9.7% (10)
	Corticosteroid (cortisone) injection into your joint	6.9% (4)	5.8% (6)
	Morphine or other opioids (e.g. Tylenol No. 3)	1.7% (1)	6.8% (7)
	Tramadol	1.7% (1)	4.9% (5)
	Codeine	1.7% (1)	2.9% (3)
	Tricyclic antidepressants (for neuropathic pain)	3.4% (2)	0.0% (0)
	Anticonvulsants (e.g. Gabapentin)	0.0% (0)	1.0% (1)
	Methotrexate	0.0% (0)	1.0% (1)
	Herbal supplements	25.9% (15)	25.2% (26)
Patient-reported scales			
Numeric pain rating: hip/knee pain in the past month (0-10)	—	4.6 ± 2.2 (N = 58)	4.9 ± 1.9 (N = 103)
EQ-5D utility score	—	0.7 ± 0.2 (N = 58)	0.7 ± 0.2 (N = 100)
Arthritis Self-Efficacy Scale (1=lowest self-efficacy, 10=highest)	—	6.1 ± 2.0 (N = 58)	6.2 ± 1.7 (N = 103)
HOOS/KOOS subscale (0=extreme symptoms, 100=no symptoms)	Activities of daily living (ADL)	67.2 ± 19.4 (N = 58)	67.4 ± 17.0 (N = 103)
	Pain	60.6 ± 17.1 (N = 58)	58.3 ± 13.8 (N = 103)
	Quality of life	43.8 ± 20.3 (N = 58)	38.8 ± 17.0 (N = 103)
	Sports/recreation	41.6 ± 24.5 (N = 58)	28.5 ± 21.6 (N = 103)

3-month survey: GLA:D Canada participation and satisfaction with program

Measure	Category	Hip (N=29)	Knee (N=63)
How many education sessions did you attend? (0-3)	0	3.4% (1)	1.6% (1)
	1	20.7% (6)	21.3% (13)
	2	72.4% (21)	65.6% (40)
	3	3.4% (1)	11.5% (7)
	Not reported	— (0)	— (2)
How many exercise sessions did you attend? (0-12, categorized)	0-5	0.0% (0)	4.8% (3)
	6-10	25.0% (7)	25.8% (16)
	11-12	75.0% (21)	69.4% (43)
	Not reported	— (1)	— (1)
How much have you benefited from the GLA:D program?	1 - Not at all beneficial	0.0% (0)	1.6% (1)
	2	3.4% (1)	1.6% (1)
	3 - Neutral	10.3% (3)	9.5% (6)
	4	34.5% (10)	36.5% (23)
	5 - Very beneficial	51.7% (15)	50.8% (32)
How often do you use what you have learned from the GLA:D program in your daily life?	Never	3.4% (1)	3.2% (2)
	Every month	3.4% (1)	
	Every week	17.2% (5)	38.1% (24)
	Every day	55.2% (16)	39.7% (25)
	Several times a day	17.2% (5)	15.9% (10)
	Don't know	3.4% (1)	3.2% (2)
How satisfied are you with the outcome of the GLA:D program?	1 - Not at all satisfied	0.0% (0)	3.2% (2)
	2	3.6% (1)	
	3 - Neutral	25.0% (7)	6.3% (4)
	4	25.0% (7)	39.7% (25)
	5 - Very satisfied	46.4% (13)	50.8% (32)
	Not reported	— (1)	
Based on your experience, how much would you be willing to pay to take part in the GLA:D program?	$100 or less	24.1% (7)	12.9% (8)
	$101 to $150	6.9% (2)	9.7% (6)
	$151 to $200	3.4% (1)	25.8% (16)
	$201 to $250	27.6% (8)	8.1% (5)
	$251 to $300	13.8% (4)	17.7% (11)

Measure	Category	Hip (N=29)	Knee (N=63)
	$301 or more	24.1% (7)	25.8% (16)
	Not reported	— (0)	— (1)

Participant outcomes

Changes from initial status to follow-up

Measure	Time	Category	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
				Hip					Knee			
Pain intensity												
Numeric pain rating	3M	—	29	5.0 ± 2.1	4.0 ± 2.3	-1.9, -0.1	0.027 (0.167)	63	4.7 ± 1.8	3.5 ± 2.1	-1.7, -0.6	<0.001 (0.001)
	12M	—	15	4.5 ± 2.2	3.4 ± 2.2	-2.4, 0.2	0.084 (0.345)	22	4.7 ± 1.8	3.2 ± 1.9	-2.6, -0.4	0.010 (0.085)
HOOS/KOOS scores												
Pain	3M	—	29	57.3 ± 14.9	64.0 ± 20.5	1.6, 11.6	0.011 (0.085)	63	59.2 ± 14.2	65.3 ± 14.9	3.3, 8.8	<0.001 (0.001)
	12M	—	15	60.2 ± 14.5	72.0 ± 19.9	1.6, 22.0	0.027 (0.167)	22	58.0 ± 13.4	69.3 ± 13.5	4.9, 17.8	0.002 (0.021)
Activities of Daily Living	3M	—	29	64.7 ± 19.7	67.8 ± 22.7	-1.8, 8.0	0.205 (0.615)	63	68.2 ± 16.0	73.7 ± 15.8	3.0, 8.0	<0.001 (0.001)
	12M	—	15	69.9 ± 18.9	74.2 ± 22.9	-7.5, 16.2	0.448 (0.877)	22	67.9 ± 14.3	78.4 ± 15.1	3.4, 17.7	0.006 (0.055)
Sports/recreation	3M	—	29	36.1 ± 21.4	36.4 ± 26.2	-6.3, 6.9	0.930 (1.000)	63	27.3 ± 20.5	30.7 ± 22.9	-0.64, 7.46	0.097 (0.370)
	12M	—	15	45.3 ± 24.1	50.4 ± 29.6	-5.0, 15.2	0.294 (0.709)	22	26.6 ± 16.0	35.5 ± 22.2	-3.3, 21.0	0.145 (0.476)
Quality of Life	3M	—	29	38.8 ± 20.1	49.6 ± 24.6	5.1, 16.5	<0.001 (0.011)	63	38.5 ± 17.0	44.9 ± 17.9	2.7, 10.1	<0.001 (0.015)
	12M	—	15	45.4 ± 21.1	56.8 ± 23.8	-1.4, 24.1	0.076 (0.327)	22	37.2 ± 15.0	46.0 ± 16.3	1.7, 15.9	0.017 (0.122)
Function tests												

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
30-second chair stand: # of stands	3M (last session)	—	24	12.5 ± 3.2	15.6 ± 5.8	1.5, 4.6	<0.001 (0.011)	50	12.7 ± 7.2	15.3 ± 7.6	0.77, 4.39	0.006 (0.055)
40-m walk test: speed (m/s)	3M (last session)	—	15	1.4 ± 0.3	1.5 ± 0.4	0.04, 0.21	0.005 (0.054)	36	1.4 ± 0.4	1.5 ± 0.4	-0.00, 0.18	0.063 (0.284)
Other outcomes												
In a typical week, how many days have you been physically active at least 30 minutes per day?	3M	—	29	4.7 ± 2.2	4.6 ± 1.7	-1.0, 0.8	0.817 (1.000)	62	4.5 ± 1.9	4.5 ± 2.0	-0.43, 0.36	0.871 (1.000)
	12M	—	15	4.2 ± 2.5	3.5 ± 1.9	-1.5, 0.1	0.096 (0.370)	22	5.1 ± 1.8	5.0 ± 1.8	-0.85, 0.67	0.806 (1.000)
Body-mass index (kg/m²)	3M	—	28	26.5 ± 5.9	26.4 ± 5.9	-0.23, 0.10	0.413 (0.852)	62	29.3 ± 6.0	29.9 ± 8.0	-0.67, 1.80	0.364 (0.799)
	12M	—	15	28.4 ± 6.2	28.1 ± 5.3	-1.5, 0.8	0.534 (0.902)	21	27.9 ± 5.9	27.7 ± 6.0	-0.66, 0.27	0.393 (0.828)
BMI category: overweight or obese (≥ 25 kg/m²)	3M	—	28	60.7% (17)	60.7% (17)	0.00%	**NC[f]**	62	74.2% (46)	74.2% (46)	0.00%	**NC[f]**
	12M	—	15	66.7% (10)	66.7% (10)	0.00%	1.000 (1.000)	21	66.7% (14)	66.7% (14)	0.00%	**NC[f]**
BMI category: obese (≥ 30 kg/m²)	3M	—	28	17.9% (5)	17.9% (5)	0.00%	**NC[f]**	62	38.7% (24)	37.1% (23)	-1.61%	1.000 (1.000)
	12M	—	15	26.7% (4)	33.3% (5)	6.67%	1.000 (1.000)	21	33.3% (7)	23.8% (5)	-9.52%	0.480 (0.877)
EQ-5D-5L health utility	3M	—	29	0.70 ± 0.21	0.71 ± 0.21	-0.03, 0.05	0.735 (1.000)	59	0.74 ± 0.15	0.78 ± 0.13	0.01, 0.07	0.004 (0.054)
	12M	—	15	0.72 ± 0.20	0.75 ± 0.20	-0.07, 0.11	0.644 (0.996)	21	0.74 ± 0.12	0.79 ± 0.13	-0.01, 0.11	0.102 (0.374)
OA Patient Knowledge score	3M	—	19	22.3 ± 5.2	23.7 ± 2.4	-0.69, 3.54	0.175 (0.542)	41	23.1 ± 4.0	23.0 ± 4.3	-0.97, 0.87	0.915 (1.000)

Measure	Time	Category	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
			Hip					**Knee**				
Arthritis Self-Efficacy Scale	3M	—	29	5.6 ± 2.2	6.4 ± 2.5	-0.01, 1.47	0.052 (0.264)	63	6.2 ± 1.7	6.6 ± 1.6	-0.02, 0.98	0.062 (0.284)
	12M	—	15	6.3 ± 2.1	6.8 ± 2.6	-0.38, 1.52	0.218 (0.624)	22	6.7 ± 1.6	7.3 ± 1.8	-0.46, 1.64	0.254 (0.630)
Are you so troubled by your hip/knee problems that you want surgery?	3M	—	28	42.9% (12)	42.9% (12)	0.00%	1.000 (1.000)	62	29.0% (18)	33.9% (21)	4.84%	0.546 (0.902)
	12M	—	15	33.3% (5)	13.3% (2)	-20.00%	0.371 (0.799)	22	31.8% (7)	50.0% (11)	18.18%	0.221 (0.624)
Are you afraid that your joints will be damaged from physical activity and exercise?	3M	—	29	27.6% (8)	10.3% (3)	-17.24%	0.131 (0.446)	62	27.4% (17)	12.9% (8)	-14.52%	0.052 (0.264)
	12M	—	15	20.0% (3)	6.7% (1)	-13.33%	0.480 (0.877)	22	18.2% (4)	13.6% (3)	-4.55%	1.000 (1.000)
How much have you benefited from the GLA:D program?[d]	12M	2	13	0.0% (0)	7.7% (1)	7.69%						
	12M	3 - Neutral	13	15.4% (2)	30.8% (4)	15.38%		21	0.0% (0)	9.5% (2)	9.52%	
	12M	4	13	46.2% (6)	15.4% (2)	-30.77%		21	38.1% (8)	38.1% (8)	0.00%	
	12M	5 - Very beneficial	13	38.5% (5)	46.2% (6)	7.69%		21	61.9% (13)	52.4% (11)	-9.52%	
How often do you use what you have learned from the GLA:D program in your daily life?[d]	12M	Never	13	7.7% (1)	15.4% (2)	7.69%	0.053 (0.264)	21	4.8% (1)	0.0% (0)	-4.76%	0.463 (0.877)
	12M	Every month	13	7.7% (1)	15.4% (2)	7.69%		21	0.0% (0)	4.8% (1)	4.76%	
	12M	Every week	13	23.1% (3)	38.5% (5)	15.38%		21	28.6% (6)	28.6% (6)	0.00%	
	12M	Every day	13	53.8% (7)	23.1% (3)	-30.77%		21	38.1% (8)	52.4% (11)	14.29%	

Measure	Time	Category	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
				Hip					**Knee**			
	12M	Several times a day	13	7.7% (1)	0.0% (0)	-7.69%		21	28.6% (6)	9.5% (2)	-19.05%	
	12M	Don't know[e]	13	0.0% (0)	7.7% (1)	7.69%		21	0.0% (0)	4.8% (1)	4.76%	
Employment status: currently working (full- or part-time)	3M	—	29	20.7% (6)	10.3% (3)	-10.34%	0.248 (0.630)	63	20.6% (13)	22.2% (14)	1.59%	1.000 (1.000)
	12M	—	15	33.3% (5)	26.7% (4)	-6.67%	1.000 (1.000)	22	18.2% (4)	22.7% (5)	4.55%	1.000 (1.000)
Employment status: Not working and on benefits	3M	—	29	0.0% (0)	6.9% (2)	6.90%	NC[f]	63	1.6% (1)	1.6% (1)	0.00%	1.000 (1.000)
	12M	—	15	0.0% (0)	6.7% (1)	6.67%	NC[f]	22	0.0% (0)	0.0% (0)	0.00%	NC[f]
Medications												
Have you taken any medications for your hip/knee in the last 3 months?	3M	—	29	82.8% (24)	72.4% (21)	-10.34%	0.505 (0.877)	62	77.4% (48)	69.4% (43)	-8.06%	0.302 (0.711)
	12M	—	15	66.7% (10)	53.3% (8)	-13.33%	0.617 (0.970)	22	77.3% (17)	63.6% (14)	-13.64%	0.546 (0.902)
Any injection(s) reported (hyaluronic acid, corticosteroid)	3M	—	29	10.3% (3)	0.0% (0)	-10.34%	NC[f]	62	12.9% (8)	9.7% (6)	-3.23%	0.724 (1.000)
	12M	—	15	6.7% (1)	13.3% (2)	6.67%	1.000 (1.000)	22	22.7% (5)	9.1% (2)	-13.64%	0.371 (0.799)
Any opioid use reported (morphine, tramadol, codeine)	3M	—	29	3.4% (1)	6.9% (2)	3.45%	1.000 (1.000)	62	9.7% (6)	6.5% (4)	-3.23%	0.617 (0.970)
	12M	—	15	0.0% (0)	13.3% (2)	13.33%	NC[f]	22	18.2% (4)	18.2% (4)	0.00%	1.000 (1.000)
Acetaminophen	3M	—	29	51.7% (15)	48.3% (14)	-3.45%	1.000 (1.000)	62	51.6% (32)	48.4% (30)	-3.23%	0.803 (1.000)

Measure	Time	Category	Hip					Knee				
			N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
	12M	—	15	26.7% (4)	26.7% (4)	0.00%	1.000 (1.000)	22	54.5% (12)	40.9% (9)	-13.64%	0.505 (0.877)
NSAID	3M	—	29	48.3% (14)	48.3% (14)	0.00%	1.000 (1.000)	62	43.5% (27)	35.5% (22)	-8.06%	0.228 (0.626)
	12M	—	15	46.7% (7)	40.0% (6)	-6.67%	1.000 (1.000)	22	50.0% (11)	27.3% (6)	-22.73%	0.131 (0.446)
Topical NSAID cream	3M	—	29	24.1% (7)	34.5% (10)	10.34%	0.505 (0.877)	62	51.6% (32)	46.8% (29)	-4.84%	0.663 (1.000)
	12M	—	15	20.0% (3)	13.3% (2)	-6.67%	1.000 (1.000)	22	59.1% (13)	27.3% (6)	-31.82%	0.046 (0.264)
Glucosamine	3M	—	29	27.6% (8)	20.7% (6)	-6.90%	0.617 (0.970)	62	29.0% (18)	24.2% (15)	-4.84%	0.450 (0.877)
	12M	—	15	13.3% (2)	13.3% (2)	0.00%	NC[f]	22	31.8% (7)	18.2% (4)	-13.64%	0.248 (0.630)
Hyaluronic acid injection	3M	—	29	6.9% (2)	0.0% (0)	-6.90%	NC[f]	62	9.7% (6)	8.1% (5)	-1.61%	1.000 (1.000)
	12M	—	15	6.7% (1)	6.7% (1)	0.00%	1.000 (1.000)	22	18.2% (4)	4.5% (1)	-13.64%	0.248 (0.630)
Corticosteroid injection	3M	—	29	6.9% (2)	0.0% (0)	-6.90%	NC[f]	62	6.5% (4)	4.8% (3)	-1.61%	1.000 (1.000)
	12M	—	15	0.0% (0)	6.7% (1)	6.67%	NC[f]	22	13.6% (3)	9.1% (2)	-4.55%	1.000 (1.000)
Morphine or other opioids	3M	—	29	0.0% (0)	3.4% (1)	3.45%	NC[f]	62	6.5% (4)	3.2% (2)	-3.23%	0.480 (0.877)
	12M	—	15	0.0% (0)	6.7% (1)	6.67%	NC[f]	22	9.1% (2)	9.1% (2)	0.00%	1.000 (1.000)
Tramadol	3M	—	29	3.4% (1)	3.4% (1)	0.00%	NC[f]	62	3.2% (2)	3.2% (2)	0.00%	1.000 (1.000)

Measure	Time	Category	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]	N[a]	Initial status	Outcome status	Change from initial status[b]	P (FDR-adjusted)[c]
					Hip					**Knee**		
	12M	—	15	0.0% (0)	6.7% (1)	6.67%	NC[f]	22	9.1% (2)	9.1% (2)	0.00%	1.000 (1.000)
Codeine	3M	—	29	0.0% (0)	3.4% (1)	3.45%	NC[f]	62	1.6% (1)	0.0% (0)	-1.61%	NC[f]
	12M	—	15	0.0% (0)	6.7% (1)	6.67%	NC[f]	22	0.0% (0)	9.1% (2)	9.09%	NC[f]
Tricyclic antidepressants (for neuropathic pain)	3M	—	29	3.4% (1)	3.4% (1)	0.00%	NC[f]	62	0.0% (0)	0.0% (0)	0.00%	NC[f]
	12M	—	15	0.0% (0)	0.0% (0)	0.00%	NC[f]	22	0.0% (0)	0.0% (0)	0.00%	NC[f]
Anticonvulsants	3M	—	29	0.0% (0)	0.0% (0)	0.00%	NC[f]	62	0.0% (0)	1.6% (1)	1.61%	NC[f]
	12M	—	15	0.0% (0)	0.0% (0)	0.00%	NC[f]	22	0.0% (0)	9.1% (2)	9.09%	NC[f]
Methotrexate	3M	—	29	0.0% (0)	0.0% (0)	0.00%	NC[f]	62	0.0% (0)	0.0% (0)	0.00%	NC[f]
	12M	—	15	0.0% (0)	0.0% (0)	0.00%	NC[f]	22	0.0% (0)	0.0% (0)	0.00%	NC[f]
Herbal supplements	3M	—	29	24.1% (7)	13.8% (4)	-10.34%	0.371 (0.799)	62	24.2% (15)	33.9% (21)	9.68%	0.149 (0.476)
	12M	—	15	6.7% (1)	6.7% (1)	0.00%	1.000 (1.000)	22	40.9% (9)	31.8% (7)	-9.09%	0.683 (1.000)

[a]Number of participants with valid initial (i.e. baseline, except for function tests) data and follow-up data for given measure

[b]Continuous measures: 95% confidence interval for paired difference between outcome and initial status; categorical measures: percentage difference between outcome and initial status.

[c]Continuous measures: paired t-test; binary measures: McNemar's test of paired proportions; ordinal measures (perceived benefit from GLA:D Canada, and frequency of knowledge use): paired Wilcoxon signed-rank test. Null hypothesis = no within-subject change in the given outcome. FDR = False discovery rate (p-value correction for multiple comparisons).

[d]Comparison: 12-month versus 3-month response

[e]"Don't know" responses were omitted from hypothesis tests.

[f]Not calculable

Categorized outcome measures

Measure	Outcome category	Hip		Knee	
		3M	12M	3M	12M
Pain intensity					
Numeric pain rating (0-10)	No change or worsened	31.0% (9)	40.0% (6)	39.7% (25)	36.4% (8)
	Negligible improvement (0.1 - 14.9%)	10.3% (3)	0.0% (0)	1.6% (1)	0.0% (0)
	Possible improvement (15 - 29.9%)	17.2% (5)	0.0% (0)	14.3% (9)	13.6% (3)
	Clinically important improvement (≥ 30% and/or zero pain)	41.4% (12)	60.0% (9)	44.4% (28)	50.0% (11)
HOOS/KOOS scores (0-100)					
Pain	No change or worsened	41.4% (12)	26.7% (4)	30.2% (19)	27.3% (6)
	Negligible improvement (0.1 - 4.9 pt)	6.9% (2)	6.7% (1)	11.1% (7)	18.2% (4)
	Possible improvement (5 - 9.9 pt)	6.9% (2)	6.7% (1)	20.6% (13)	4.5% (1)
	Clinically important improvement (≥ 10 pt and/or perfect score)	44.8% (13)	60.0% (9)	38.1% (24)	50.0% (11)
Activities of Daily Living	No change or worsened	37.9% (11)	40.0% (6)	33.3% (21)	18.2% (4)
	Negligible improvement (0.1 - 4.9 pt)	20.7% (6)	13.3% (2)	23.8% (15)	22.7% (5)
	Possible improvement (5 - 9.9 pt)	17.2% (5)	0.0% (0)	9.5% (6)	13.6% (3)
	Clinically important improvement (≥ 10 pt and/or perfect score)	24.1% (7)	46.7% (7)	33.3% (21)	45.5% (10)
Quality of Life	No change or worsened	37.9% (11)	46.7% (7)	38.1% (24)	45.5% (10)

Measure	Outcome category	Hip		Knee	
		3M	12M	3M	12M
	Negligible improvement (0.1 - 4.9 pt)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
	Possible improvement (5 - 9.9 pt)	10.3% (3)	6.7% (1)	15.9% (10)	4.5% (1)
	Clinically important improvement (≥ 10 pt and/or perfect score)	51.7% (15)	46.7% (7)	46.0% (29)	50.0% (11)
Sports/recreation	No change or worsened	65.5% (19)	33.3% (5)	54.0% (34)	36.4% (8)
	Negligible improvement (0.1 - 4.9 pt)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
	Possible improvement (5 - 9.9 pt)	10.3% (3)	26.7% (4)	9.5% (6)	13.6% (3)
	Clinically important improvement (≥ 10 pt and/or perfect score)	24.1% (7)	40.0% (6)	36.5% (23)	50.0% (11)
Function tests					
30-second chair stand: # of stands	No change or worsened	20.8% (5)	—	26.0% (13)	—
	Negligible improvement (0.1 to 1.9 stands)	20.8% (5)	—	12.0% (6)	—
	Clinically important improvement (≥ 2 stands)	58.3% (14)	—	62.0% (31)	—
40m walking test: walking speed	No change or worsened	26.7% (4)	—	36.1% (13)	—
	Negligible improvement (0.1 to 0.19 m/s)	46.7% (7)	—	27.8% (10)	—
	Clinically important improvement (≥ 0.2 m/s)	26.7% (4)	—	36.1% (13)	—
Knowledge/self-efficacy					
OA Patient Knowledge Questionnaire (0-30)	No change or worsened	52.6% (10)	0.0% (0)	63.4% (26)	0.0% (0)

Measure	Outcome category	Hip		Knee	
		3M	12M	3M	12M
	Negligible improvement (0.1 - 9.9%)	15.8% (3)	0.0% (0)	22.0% (9)	0.0% (0)
	Possible improvement (10 - 19.9%)	0.0% (0)	0.0% (0)	4.9% (2)	0.0% (0)
	Substantial improvement (≥ 20% and/or perfect score)	31.6% (6)	0.0% (0)	9.8% (4)	0.0% (0)
Arthritis Self-Efficacy Scale (1-10)	No change or worsened	48.3% (14)	33.3% (5)	36.5% (23)	31.8% (7)
	Negligible improvement (0.1 - 9.9%)	13.8% (4)	20.0% (3)	9.5% (6)	18.2% (4)
	Possible improvement (10 - 19.9%)	6.9% (2)	6.7% (1)	9.5% (6)	9.1% (2)
	Substantial improvement (≥ 20% and/or perfect score)	31.0% (9)	40.0% (6)	44.4% (28)	40.9% (9)

Joint surgery after enrollment

Measure	Time point	Response	Hip 3M: N=29 12M: N=16	Knee 3M: N=63 12M: N=22
Have you had surgery on your hip/knee since you first started the GLA:D Canada education and exercise program?	3M	No	93.1% (27)	100.0% (63)
		Yes	6.9% (2)	0.0% (0)
	12M	No	68.8% (11)	72.7% (16)
		Yes	31.2% (5)	27.3% (6)
Any joint replacement	3M	No	93.1% (27)	100.0% (63)
		Yes	6.9% (2)	0.0% (0)
	12M	No	68.8% (11)	72.7% (16)
		Yes	31.2% (5)	27.3% (6)
Any arthroscopic procedure	3M	No	100.0% (29)	100.0% (63)
	12M	No	100.0% (15)	100.0% (22)
		Not reported	— (1)	— (0)
Any other procedure	3M	No	100.0% (29)	100.0% (63)
	12M	No	100.0% (15)	100.0% (22)
		Not reported	— (1)	— (0)