Statistical Analysis Plan (Short)

Comparative effect of two educational videos for people with knee osteoarthritis (vidEO): An online randomised controlled trial

Version: 2

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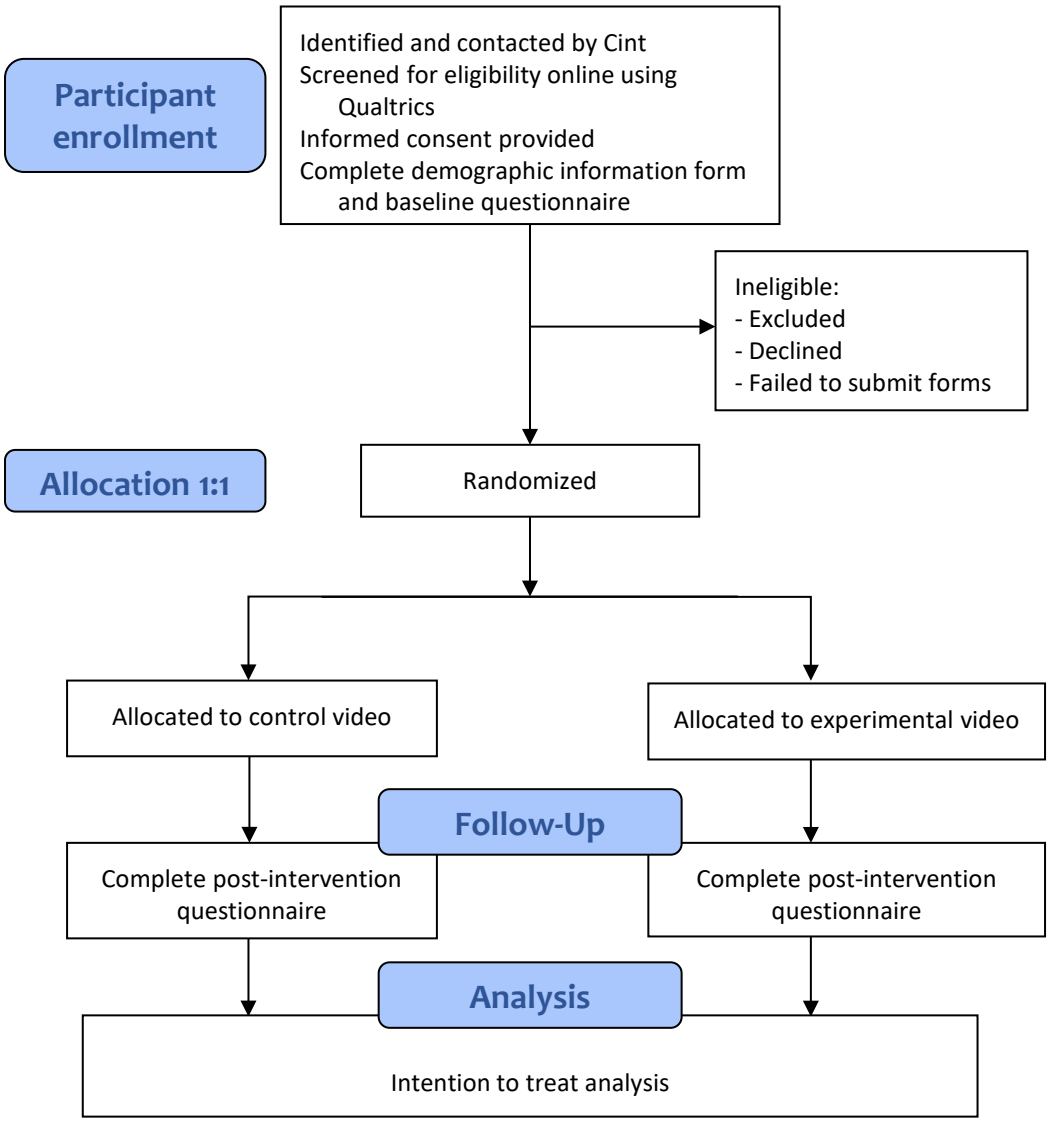
1 Introduction

Objectives	To determine if an educational video based on an empowerment and participatory discourse improves self-efficacy to manage knee OA pain and reduced fear of movement more than an educational video based on a disease information and impairment discourse, among people with knee osteoarthritis symptoms.
Study Design	Two-arm, parallel groups superiority randomised controlled trial
Planned Sample Size	516
Study Procedures	Our trial will be delivered via an online survey (Qualtrics, Provo, UT, USA) and Vimeo (Vimeo Inc, NYC, USA) video sharing platform. Volunteers will be recruited by a digital survey-based research company (Cint PTY LTD) and complete an online screening survey. Eligible participants will then be invited to read the information sheet and digitally consent to participate in the study. They will provide demographic information and answer the baseline questionnaires. They will then be randomised to one of two intervention groups. On the next page of the survey they will be presented with a video to watch before moving on the post-intervention questionnaire.
Duration of the study	Anticipated participant recruitment start: November 2021 Anticipated data collection end: December 2021 Recruitment for this study is anticipated to take approximately 3-4 weeks.

Figure 1. Study chart



2 Data Source

Participant recruitment will be managed by an external company, Cint PTY LTD. Data security will be managed according to their data privacy and security protocols.

Data collection will be managed wholly online through Qualtrics, an electronic data capture system. Qualtrics is a secure web application for building and managing research questionnaires and databases. The University of Melbourne holds a licence for staff use of Qualtrics and surveys and associated data will only be accessible via secure login by the study research staff.

Re-identifiable/coded data

Questionnaires will be completed electronically and anonymously, with no identifying information being recorded. Electronic data will be stored in the Qualtrics website, accessible only to the study research staff by password protection. Data from within Qualtrics will eventually be exported to Microsoft Excel and other statistical packages used by the researchers for analyses and stored securely on password-protected servers accessible only to the study research staff.

3 Analysis Objectives

The aim of this randomised controlled trial (RCT) is to compare the effect of two knee OA educational videos on people with knee OA.

3.1 Aim 1

The primary hypotheses are that a knee OA educational video based on an empowerment discourse and emphasising participation in effective lifestyle behaviours will lead to 1) feeling more confident to self-manage knee OA pain, and 2) having less fear of movement, compared to an educational video based on a disease information and impairment discourse.

3.2 Aim 2

We secondarily hypothesise that after watching the novel educational video, people with knee OA will have reduced levels of concern, more positive expectations about their knee OA prognosis and the benefit to be gained from physical activity, will be more motivated to be physically active, and will have at least as accurate beliefs about knee OA disease.

3.3 Aim 3

N/A

4 Analysis sets/Populations/Subgroups

Participants will be eligible if they: i) live in Australia; ii) are aged 45 years or over; iii) have experienced activity-related knee pain during the past 3 months or have been told by a health professional that they have knee OA, iv) have not had a hip or knee joint replacement; v) are not scheduled/referred to see an orthopaedic surgeon or are already on a waiting list for hip or knee joint replacement; vi) do not knowingly have any type of systemic arthritis (e.g. rheumatoid arthritis, gout), or have morning stiffness that lasts longer than 30 minutes; vii) do not have a health condition that makes them unable

to walk; viii) have not seen a health professional for their knee pain during the previous three months; and ix) are able to easily understand verbal and written English language.

5 Endpoints and Covariates

All variables are listed in Appendix 1 and the coding of the derived variables can be found in Appendix 2.

5.1 Primary Outcomes

- Change in Arthritis Self Efficacy Scale – Pain Subscale (post-intervention minus baseline),
- Change in Brief Fear of Movement Scale for Osteoarthritis (baseline minus post-intervention).

5.2 Secondary Outcomes

- Level of Concern (ordinal, range 0=Not at all concerned – 4=Extremely concerned, measured at baseline and post-intervention)
- Change in Credibility/expectation questionnaire – Part 1 (post-intervention minus baseline)
- Change in Credibility/expectation questionnaire – Part 2 (post-intervention minus baseline)
- Change in Importance of physical activity (post-intervention minus baseline)
- Change in Motivation to be physically active (post-intervention minus baseline)
- Change in Knee osteoarthritis knowledge scale (post-intervention minus baseline)
- Perceived likelihood of needing surgery (ordinal, measured at baseline and post-intervention)
- Perceived change in hope (binary, only measured at post-intervention)
- Satisfaction with meeting information needs (ordinal, only measured at post-intervention)

6 Handling of Missing Values and Other Data Conventions

An appendix table will provide summaries of baseline characteristics and baseline levels of primary and secondary outcomes where measured between two groups: those participants who provide both primary outcomes post-intervention, and those participants who are missing either or both primary outcomes. If less than 5% of both primary outcomes is missing, analyses will be performed on complete case data (Lawford et al, Under review; Sharma et al., 2021). If greater than 5% of either primary outcome is missing, multiple imputation will be applied for the primary analysis. Missing outcomes will be imputed using chained equations with predictive mean matching and five nearest neighbours for continuous outcomes. Imputation models for continuous outcomes post-intervention will include all primary and secondary outcomes at both baseline and post-intervention,

along with age, gender, BMI, education level, geographical location, employment status, duration of symptoms, ethnicity, personal relevance and pain during walking. Data will be imputed for each treatment group separately. The number of imputed data sets created will be based on the percentage of patients in the sample with missing outcome data (e.g., 15 imputed datasets if 15% of participants have missing data). Estimates from the imputed datasets will be combined using Rubin's rules. (Carpenter JG, Kenward MG. Multiple imputation and its application. West Sussex, UK: John Wiley & Sons Ltd; 2013.)

7 Statistical Methodology

7.1 Statistical Procedures

A biostatistician (Ms Fiona McManus, supervised by Dr Karen Lamb) will analyse de-identified data in Stata version 16.1 (StataCorp LLC, College Station, TX, USA), while blind to group allocation. Descriptive data will be presented by intervention group as mean (SD), median (IQR) or n (%) as appropriate. Comparative analyses between groups will be performed using intention-to-treat according to the group to which the participant was randomised, irrespective of whether they adhered to the intervention. The number included in each analysis will be reported. Standard diagnostic plots will be used to check model assumptions, including assessing linearity and homoscedasticity, where appropriate.

7.1.1 Aim 1

Separate linear regression models for each primary outcome will be used to estimate the between-group mean (95% CI) difference in change scores (either baseline minus post-intervention or post-intervention minus baseline, so that positive values favour the experimental group (allocated the 'empowerment and participatory discourse' video), adjusted for the outcome at baseline. Post-intervention time point was 'immediately following watching the video'.

7.1.2 Aim 2

Separate linear regression models for each continuous secondary outcome will be used to estimate the between-group mean (95% CI) difference in change scores (post-intervention minus baseline, so that positive values favour the experimental 'empowerment and participatory discourse' group), adjusted for the outcome at baseline. For the binary secondary outcome, perceived change, groups will be compared using logistic regression, with results reported as risk differences and risk ratios, with corresponding 95% CIs. For ordinal secondary outcomes, ordinal logistic regression models will be fitted similarly, adjusted for the outcome at baseline where able. The proportional odds

assumption will be assessed using the Brant test. If proportional odds cannot be assumed, multinomial regression models will be fitted. Results will be reported as odds ratios, or relative risk ratios if multinomial regression is used, with corresponding 95% CIs.

7.2 Measures to Adjust for Multiplicity, Confounders, Heterogeneity

We have two primary outcomes and so have adjusted the alpha for each primary outcome to 0.025 to give an overall alpha of 0.05 across both outcomes. We have several secondary outcomes. All secondary outcomes are exploratory and not powered for. We will therefore not adjust for multiple secondary outcomes but instead report all effect sizes, confidence intervals, and p values in order to let readers use their own judgment about the relative weight of the conclusions. This approach aligns with the usage of p-values favoured by the American Statistical Association. [Wasserstein RL, Schirm AL, Lazar NA. Moving to a world beyond “$p < 0.05$”. The American Statistician. 2019; 73:1-19.]

8 Sensitivity Analyses

If multiple imputation is used for the primary outcomes, sensitivity analyses will be conducted on complete case analysis.

9 QC Plans

Data quality will be checked/promoted through a process of identifying extreme values and checking the source of these values in case of a data entry error. A record of any/all manual corrections to data will be maintained. Calculations of scores from multi-item scales will be carried out using Microsoft Excel functions and cross-checked using other statistical packages to reduce errors.

10 Programming Plans

A list of all tables, figures, listings and their templates can be found in Appendix 3.

11 References

vidEO study project proposal - V3

References as detailed or as per vidEO study project proposal - V3.

Appendix 1

VARIABLES IN THE DATA SET

Domain	Label	Measurement method	Details
Age	AGE	Calculated from date of birth	Reported in years
Gender	GENDER	Self-reported using the following categories: – Male = 1 – Female = 2 – Other (please specify) / Prefer not to say = 3 – Non-binary = 4	Number and proportion of participants responding to each category will be reported.
State/territory	STATE	Self-reported using the following categories: ACT, NSW, NT, QLD, SA, TAS, VIC, WA	N (%) in each category
Geographical location	LOCATION	Determined from self-reported residential postcode and classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Structure)	N (%) in each category of: major city, inner regional, outer regional, remote and very remote locations
Height	HEIGHT	Self-reported	Reported in metres
Weight	WEIGHT	Self-reported	Reported in kilograms
Body mass index	BMI	Calculated from height and weight.	Reported in kg/m^2
Level of education	EDUCATION	Self-reported using the following categories: – Less than 3 years of secondary education (high school) – 3 or more years of secondary education (high school) – Some education beyond high school e.g., trade/technical/vocational training – Completed tertiary education (college or university)	N (%) in each category
Current employment situation	EMPLOYMENT	Self-reported using the following categories: – Unemployed/not employed/ e.g., full-time carer, full-time student	N (%) in each category

		– Retired (not due to health reasons) – Unable to work due to health reasons – Paid work part time – Paid work full time	
Ethnicity	ETHNICITY	Self-reported using the following categories (choose only one representing the ethnicity you mostly identify with): – Australian/New Zealand – Aboriginal and Torres Strait Islander – European – Asian – Other Oceania – North African & Middle Eastern – Sub-Saharan Africa – North American – South American – Other (please list)	N (%) in each category
Pain severity during walking (Bellamy, 1997)	SEVERITY	*Select the number on the following scale to show the average amount of pain felt during walking over the PAST WEEK in your most painful knee* (0-10, where 0=no pain and 10=worst pain possible)	Scored on an 11-point NRS for average pain on walking in the last week. Ranges from 0 to 10
Pain duration	DURATION	Self-reported using the following categories: – Less than one year – One to two years – Two to five years – Five to ten years – Ten to fifteen years – Fifteen to twenty years – More than twenty years	N (%) in each category
Where have you previously learned about osteoarthritis? (select all that apply)	INFORECEIVED	– No information received – GP or family doctor – Orthopaedic surgeon – Another doctor (such as sports doctor or rheumatologist) – Nurse – Physiotherapist – Osteopath – Chiropractor – OA rehabilitation programme – Arthritis educator – Arthritis support group – Other people with OA – Family or friends – Internet/website	N (%) in each category

		– Television – Information booklets – Training as a health professional – Other media – Other health professional	
Personal relevance	RELEVANCE	Rated using a 5-point Likert scale: *How relevant do you think education about knee osteoarthritis is to you at this time?* *0=Not at all relevant* *1=A little bit relevant* *2=Quite relevant* *3=Very relevant* *4=Extremely relevant*	N (%) in each category

Continuous outcomes will be defined as change scores (subtraction arranged so that positive values indicate improvement, e.g., change in ASES-Pain and all secondary continuous outcomes with baseline measures (post-intervention minus baseline), change in BFMS (baseline minus post-intervention)).

Domain	Tool	Details
Primary outcome measures		
Arthritis Self-Efficacy Scale (Pain subscale) (Lorig et al., 1989)	For each of the following questions, please circle the number that corresponds to how certain you are that you can do the following tasks regularly at the present time. 1. *How certain are you that you can decrease your pain quite a bit?* 2. *How certain are you that you can continue most of your daily activities?* 3. *How certain are you that you can keep arthritis pain from interfering with your sleep?* 4. *How certain are you that you can make a small-to-moderate reduction in your arthritis pain by using methods other than taking extra medication?* 5. *How certain are you that you can make a large*	Scored with 5 questions, each via a 11-point NRS where 0=Very uncertain and 10=Very certain. Scores are the mean of all the items in the subscale (range 0-10). Higher scores indicate greater self-efficacy.

	reduction in your arthritis pain by using methods other than taking extra medication?	
Brief Fear of Movement Scale for Osteoarthritis	1. *I am afraid that I may injure myself if I exercise* 2. *If I were to try to overcome it, my pain would increase* 3. *I am afraid that I might injure myself accidentally* 4. *Simply being careful that I do not make unnecessary movements is the safest thing I can do to prevent pain from worsening* 5. *It's really not safe for a person with a condition like mine to be physically active* 6. *I can't do all the things normal people do because it's too easy to get injured*	Scored with 6 statements regarding fear of injury/re-injury due to movement, each via a 4-point Likert scale from 1=Strongly disagree to 4=Strongly agree. Scores range from 6 (minimal fear) to 24 (maximal fear).
Secondary outcome measures		
Level of concern	Rated using a 5-point Likert scale: *How concerned are you about your knee problem?* *0=Not at all concerned* *1=A little concerned* *2=Quite concerned* *3=Very concerned* *4=Extremely concerned*	N (%) in each category
Credibility/expectancy questionnaire (**bold** text are changes from original wording)	*We would like you to indicate below what you believe, right now, about **your knee problem**. The questionnaire consists of two parts. In the first part, you tell us what you think about managing your knee **problem**. In the second part, you tell us about your expectations and how you feel you will be in the future.* Part I 1. *At this point, how logical does doing a lot of physical*	Scores on item 5 transformed with a minimum of 1 and a maximum of 9, and a sum score formed for each factor ranging from 3 to 27 for Part 1 and 2 to 18 for Part 2.

activity or exercise seem to you?

1=not at all logical, 5=somewhat logical, 9=very logical

2. *At this point, how successful do you think **you can be** in reducing **your knee pain**?*

   *1=not at all **successful**, 5=somewhat **successful**, 9=very **successful***

3. *How confident would you be in recommending **physical activity** to a friend who experiences similar problems?*

   1=not at all confident, 5=somewhat confident, 9=very confident

Part II

For this part, close your eyes for a few moments, and try to identify what you really feel about your **knee problem**. Then answer the following questions.

4. *At this point, how much do you really feel that **doing as much physical activity as you can**, will help you to reduce your knee pain?*

   1=not at all, 5=somewhat, 9=very much

5. ***In one year's time**, how much improvement in your **knee pain** do you really feel will occur?*

   -4 = a great deal worse

   -3 = quite a lot worse

   -2 = moderately worse

   -1 = a little worse

   0 = about the same

   1 = a little better

   2 = moderately better

   3 = quite a lot better

   4 = a great deal better

Importance of physical activity	*Role of physical activity. Please read each statement and select the option that indicates how much you agree or disagree with each statement.* *1. Physical activity should be avoided because of my knee* *2. Being physically active won't change things for my knee* *3. Physical activity will help my knee quite a bit* *4. It is important for my knee to do as much physical activity as I can* Response options: – 1= Strongly disagree – 2= Slightly disagree – 3= Neither – 4= Slightly agree – 5= Strongly agree	Four item Likert scale with 5 response options. Scores averaged with items 1 and 2 reverse scored.
Motivation to be physically active	*How motivated are you to be physically active (e.g., walk, run, swim, cycle, dance, exercise, etc)* ***even when you are feeling knee pain****?* Response options: 0 = Not at all motivated – 10 = Very motivated	Scored via an 11-point NRS where. Range 0-10 where higher scores indicate greater motivation.
Knee Osteoarthritis Knowledge Scale	Each statement rated as False (1), Possibly False (2), Unsure (3), Possibly True (4), or True (5) 1. *Your knee joint wears out with everyday use^* 2. *Osteoarthritis will only get worse over time^* 3. *Increased knee pain always means that you have damaged your knee^* 4. *You need an X-ray or scan to know if you have osteoarthritis^* 5. *Being active makes osteoarthritis feel better* 6. *Keeping a healthy body weight is a key part of osteoarthritis care*	Numbers are not included in questionnaire, just there for scoring. ^ item reverse scored Scores range from 11-55 with higher scores indicating better knowledge.

	7. *X-rays or scans show how much your osteoarthritis affects you^* 8. *Making your leg muscles stronger improves your ability to do daily tasks* 9. *Pain from osteoarthritis can be managed without surgery* 10. *Exercises can ease pain as much as most medications* 11. *Most people with knee osteoarthritis will need a joint replacement at some point^*	
Perceived change *	*How much have your feelings of hope for the future **changed** since watching the video?* – much less hopeful – somewhat less hopeful – no change – somewhat more hopeful – much more hopeful	Likert scale with 5 response options. Responses dichotomised with participants indicating they are "somewhat more" or "much more" classified as 'more hopeful'. All other respondents classified as 'not more hopeful'.
Satisfaction that video met information needs *	*How satisfied are you that the video helped meet your current needs for information about your knee pain?* very unsatisfied moderately unsatisfied neutral moderately satisfied very satisfied	Likert scale with 5 response options. N (%) in each category
Perceived personal chance of ever needing knee replacement surgery	*How likely do you think you are of needing knee replacement surgery in the future?* 1 = very unlikely to need surgery 2 = unlikely to need surgery 3 = neutral 4 = likely to need surgery 5 = very likely to need surgery	Likert scale with 5 response options. N (%) in each category

NRS = Numerical rating scale
* Only measured post-intervention (not baseline)

Appendix 2

DEFINITIONS OF DERIVED VARIABLES IN THE DATA SET

Variable in data set	**Unit**	**Variable label in spreadsheet**	**Calculation**	**Range**	**Better**
Arthritis Self Efficacy Scale – Pain Subscale	5 items, 0-10	ASES	Average	0-10	⇧
Brief Fear of Movement Scale for Osteoarthritis	6 items, 1-4	BFMS	Summed	6-24	⇩
Level of concern	Single item, 0-4 (ordinal)	Concern	n/a	0-4	⇩
Credibility/expectation questionnaire – Part 1	3 items, 1-9	CEQp1	Summed	3-27	⇧
Credibility/expectation questionnaire – Part 2	2 items, 1) 1-9 2) -4 to +4	CEQp2	Summed, item 2 transformed to 1-9	2-18	⇧
Importance of physical activity	4 items, 1-5	ImpPA	Averaged, items 1 & 2 reverse scored	1-5	⇧
Motivation to be physically active	Single item, 0-10	MotPA	n/a	0-10	⇧
Knee osteoarthritis knowledge scale	11 items	KOAKS	Summed, items 1,2, 3, 4, 7, & 11 reverse scored.	11-55	⇧
Likelihood of needing surgery	Single item, 1-5 (ordinal)	Surgery	n/a	1-5	⇩
Perceived change in hope (binary, only measured post-intervention)	Single item, 5 levels	Hope	Dichotomised, 1-3 = not more	0 or 1	1

			hopeful (0), 4-5 = more hopeful (1)		
Satisfaction with meeting information needs	Single item, 5 levels (ordinal)	Satisfaction	n/a	1-5	⇧

Appendix 3

LIST OF TABLES/FIGURES/LISTINGS

Number	**Title – analysis set**
Table 1	Baseline characteristics of participants by group, reported as mean (standard deviation) unless otherwise stated.
Table 2	Summary measures and estimated mean difference in change [95% CI] or relative risks [95% CI], risk differences [95% CI] or odds ratios [95% CI] for each outcome as appropriate between groups.
Appendix 1	Baseline characteristics and outcome summary measures of participants who did and did not complete both primary outcomes, reported as mean (standard deviation) unless otherwise stated.
Appendix 2	Sensitivity analysis – complete cases.

Table 1. Baseline characteristics of participants by group, reported as mean (standard deviation) unless otherwise stated.

Domain	Units / categories	Group 1 [N = xxx]	Group 2 [N = xxx]
Age	Years		
Gender, n (%)	Male		
	Female		
	Other / Prefer not to say		
	Non-binary		
State/territory, n (%)	Australian Capital Territory		
	New South Wales		
	Northern Territory		
	Queensland		
	South Australia		
	Tasmania		
	Victoria		
	Western Australia		
Geographical location[a], n (%)	Major city		
	Inner regional		
	Outer regional		
	Remote		
	Very remote		
Height	Metres		
Weight	Kilograms		
Body mass index	kg/m^2		
Level of education, n (%)	<3 years of secondary education (high school)		
	3 or more years of secondary education (high school)		
	Some education beyond high school e.g., trade/technical/vocational training		
	Completed tertiary education (college or university)		
Current employment situation, n (%)	Unemployed/not employed/ e.g., full-time carer, full-time student		
	Retired (not due to health reasons)		
	Unable to work due to health reasons		
	Paid work part time		
	Paid work full time		
Ethnicity, n (%)	Australian/New Zealand		
	Aboriginal and Torres Strait Islander		
	European		
	Asian		
	Other Oceania		
	North African & Middle Eastern		
	Sub-Saharan Africa		
	North American		
	South American		
	Other		
Pain severity during walking[b]	0-10		

Pain duration, n (%)	Less than one year
	One to two years
	Two to five years
	Five to ten years
	Ten to fifteen years
	Fifteen to twenty years
	More than twenty years
Where received OA information[c], n (%)	No information received
	GP or family doctor
	Orthopaedic surgeon
	Another doctor (such as sports doctor or rheumatologist)
	Nurse
	Physiotherapist
	Osteopath
	Chiropractor
	OA rehabilitation programme
	Arthritis educator
	Arthritis support group
	Other people with OA
	Family or friends
	Internet/website
	Television
	Information booklets
	Training as a health professional
	Other media
	Other health professional
Personal relevance [d], n (%)	Not at all relevant
	A little bit relevant
	Quite relevant
	Very relevant
	Extremely relevant

[a] Australian Standard Geographical Classification (ASGC) Remoteness Structure.
[b] Question asked participant to rate the "average amount of pain felt during walking over the PAST WEEK in your most painful knee."
[c] Multiple options may be selected.
[d] Question asked participant to rate "How relevant do you think education about knee osteoarthritis is to you at this time?"

Table 2. Summary measures and estimated mean difference in change [95% CI] or relative risks [95% CI], risk differences [95% CI] or odds ratios [95% CI] for each outcome as appropriate between groups.

Outcome	**Baseline, mean (SD)**		**Post-intervention, mean (SD)**		**Within-group change [a], mean (SD)**		**Between-group difference in change (n=xxx)**	
	Group 1 (n=xxx)	**Group 2 (n=xxx)**	**Group 1 (n=xxx)**	**Group 2 (n=xxx)**	**Group 1 (n=xxx)**	**Group 2 (n=xxx)**	**Mean [b] [95% CI]**	**P-value**
Primary outcomes								
ASES								
BFMS								
Secondary outcomes								
Credibility/expectancy questionnaire								
Part 1, range 3-27								
Part 2, range 2-18								
Importance of physical activity, range1-5								
Motivation to be physically active, range 0-10								
Knee Osteoarthritis Knowledge Scale, range 11-55								
	Baseline, counts (proportions)		**Post-intervention, counts (proportions)**		**Between-group (n=xxx)**			

	Group 1 (n=xxx)	Group 2 (n=xxx)	Group 1 (n=xxx)	Group 2 (n=xxx)	Relative risk [c] [95% CI]	P-value	Risk difference [d] [95% CI]	P-value
Perceived change to more hopeful [e]	*n/a*	*n/a*						
	Baseline, counts (proportions)		**Post-intervention, counts (proportions)**		**Between-group (n=xxx)**			
	Group 1 (n=xxx)	**Group 2 (n=xxx)**	**Group 1 (n=xxx)**	**Group 2 (n=xxx)**	**Odds ratio [f] [95% CI]**	**P-value**	**Relative risk ratio [g] [95% CI]**	**P-value**
Level of concern [h]					*OR [95% CI]*	*P*	–	–
0=Not at all concerned					–	–	REFERENCE	–
1=A little concerned					–	–	*RRR [95% CI]*	*P*
2=Quite concerned					–	–	*RRR [95% CI]*	*P*
3=Very concerned					–	–	*RRR [95% CI]*	*P*
4=Extremely concerned					–	–	*RRR [95% CI]*	*P*
Perceived personal likelihood of ever needing knee replacement surgery					*OR [95% CI]*	*P*	–	–

1 = very unlikely to need surgery			–	–	REFERENCE	–
2 = unlikely to need surgery			–	–	*RRR [95% CI]*	*P*
3 = neutral			–	–	*RRR [95% CI]*	*P*
4 = likely to need surgery			–	–	*RRR [95% CI]*	*P*
5 = very likely to need surgery			–	–	*RRR [95% CI]*	*P*
Satisfaction that video met information needs			*OR [95% CI]*	*P*	–	–
1 = very unsatisfied	*n/a*	*n/a*	–	–	REFERENCE	–
2 = moderately unsatisfied	*n/a*	*n/a*	–	–	*RRR [95% CI]*	*P*
3 = neutral	*n/a*	*n/a*	–	–	*RRR [95% CI]*	*P*
4 = moderately satisfied	*n/a*	*n/a*	–	–	*RRR [95% CI]*	*P*
5 = very satisfied	*n/a*	*n/a*	–	–	*RRR [95% CI]*	*P*

[a] Within-group change was calculated as post-intervention minus baseline for all continuous outcomes, except Brief Fear of Movement Scale for Osteoarthritis where the within-group change was calculated as baseline minus post-intervention, so that positive values indicate improvement.
[b] Positive values favour Group 2. Mean (95% CI) difference in change between groups, adjusted for the outcome at baseline, estimated using separate regression models for each outcome.

[c] Relative risks > 1 favour Group 2.
[d] Risk differences > 0 favour Group 2.
[e] Logistic regression model fitted, unadjusted.
[f] Ordinal logistic regression models fitted, adjusted for the outcome at baseline where able, as proportional odds could be assumed. Odds ratios > 1 favour Group 2.
[g] Multinomial regression models fitted, adjusted for the outcome at baseline where able, as proportional odds could not be assumed. Relative risk ratios > 1 favour Group 2.
[h] Question asked "How concerned are you about your knee problem?"
SD = standard deviation.
ASES = Arthritis Self-efficacy Scale (Pain subscale); scored 0-10, with higher scores indicating greater self-efficacy.
BFMS= Brief Fear of Movement Scale for Osteoarthritis; scored 6-24, with higher scores indicating greater fear.

Appendix 1. Baseline characteristics and outcome summary measures of participants who did and did not complete both primary outcomes, reported as mean (standard deviation) unless otherwise stated.

Domain	**Units / categories**	**Completed both primary outcomes**	**Incomplete one or both primary outcomes**
		[N = xxx]	**[N = xxx]**
Age	Years		
Gender, n (%)	Male		
	Female		
	Non-binary		
	Other (please specify)		
	Prefer not to say		
State/territory, n (%)	Australian Capital Territory		
	New South Wales		
	Northern Territory		
	Queensland		
	South Australia		
	Tasmania		
	Victoria		
	Western Australia		
Geographical location[a], n (%)	Major city		
	Inner regional		
	Outer regional		
	Remote		
	Very remote		
Height	Metres		
Weight	Kilograms		
Body mass index	kg/m^2		
Level of education, n (%)	<3 years of secondary education (high school)		
	3 or more years of secondary education (high school)		
	Some education beyond high school e.g., trade/technical/vocational training		

	Completed tertiary education (college or university)
Current employment situation, n (%)	Unemployed/not employed/ e.g., full-time carer, full-time student
	Retired (not due to health reasons)
	Unable to work due to health reasons
	Paid work part time
	Paid work full time
Ethnicity, n (%)	Australian/New Zealand
	Aboriginal and Torres Strait Islander
	European
	Asian
	Other Oceania
	North African & Middle Eastern
	Sub-Saharan Africa
	North American
	South American
	Other
Pain severity during walking[b]	0-10
Pain duration, n (%)	Less than one year
	One to two years
	Two to five years
	Five to ten years
	Ten to fifteen years
	Fifteen to twenty years
	More than twenty years
Where received OA information[c], n (%)	No information received
	GP or family doctor
	Orthopaedic surgeon
	Another doctor (such as sports doctor or rheumatologist)
	Nurse
	Physiotherapist
	Osteopath

	Chiropractor
	OA rehabilitation programme
	Arthritis educator
	Arthritis support group
	Other people with OA
	Family or friends
	Internet/website
	Television
	Information booklets
	Other
Personal relevance [d], n (%)	Not at all relevant
	A little bit relevant
	Quite relevant
	Very relevant
	Extremely relevant
Arthritis Self-efficacy Scale (Pain subscale), range 0-10	
Brief Fear of Movement Scale for Osteoarthritis, range 6-24	
Credibility/expectancy questionnaire	Part 1, range 3-27
	Part 2, range 2-18
Importance of physical activity, range1-5	
Motivation to be physically active, range 0-10	
Knee Osteoarthritis Knowledge Scale, range 11-55	
Level of concern, n (%)	0=Not at all concerned
	1=A little concerned
	2=Quite concerned
	3=Very concerned
	4=Extremely concerned
Perceived personal likelihood of ever needing knee replacement surgery, n (%)	1 = very unlikely to need surgery

	2 = unlikely to need surgery
	3 = neutral
	4 = likely to need surgery
	5 = very likely to need surgery

[a] Australian Standard Geographical Classification (ASGC) Remoteness Structure.

[b] Question asked participant to rate the "average amount of pain felt during walking over the PAST WEEK in your most painful knee."

[c] Multiple options may be selected.

[d] Question asked participant to rate "How relevant do you think education about knee osteoarthritis is to you at this time?"