

Improving surgical patient's knowledge about safe use of opioids: A Randomized Controlled Trial

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Abstract

Background Currently, it is not routine practice to provide standardized patient education for safe postoperative opioid use. The objective of our study was to evaluate the impact of an educational pamphlet for surgical patients on knowledge about safe use, proper storage, and disposal of opioids.

Methods This multi-center randomized controlled study recruited 100 patients in the pre-operative clinic. Inclusion criteria were English-speaking, ≥ 18 years, able to give informed consent, and not on opioids for chronic pain or within the past 30 days. All patients completed a baseline knowledge questionnaire (maximum score 38) on opioid safety. Patients were randomized to intervention: educational pamphlet, or control: standard care (no pamphlet) group. Questionnaires were repeated immediately post-education in the intervention group, and at 15, and 30 days after surgery in both groups. The primary outcome was change in knowledge score post-education in the intervention compared to control group. Secondary outcomes were immediate post-education, 15, and 30-day score, and answering safe storage, and disposal questions correctly.

Results Between groups, the post-education score immediately after the intervention was higher in the intervention vs. control group baseline 34.2 [95% CI 33.1–35.3] vs 28.3 [95% CI 26.6–29.9]; $P < 0.0001$). In the intervention vs control group, mean scores were higher 31.6 (95% CI 30.5–32.7) vs 29.1 (95% CI 27.9–30.2; $P = .002$) at 15 days, and 32.4 (95%CI 31.4–33.5) vs 30.5 (95% CI 29.2–31.7; $P = .017$) at 30 days. Within the intervention group, the mean score immediately post-education (34.2 [95% confidence interval (CI) 33.1–35.3]) was higher than baseline (27.8 [95% CI 26.3–29.3]); $P < 0.0001$. Within the intervention group, the difference in mean score versus baseline was 3.8 (95% CI 2.1–5.5) at 15 days, and 4.6 (95% CI 2.9–6.3) at 30 days, ($P < 0.05$ for all timepoints). For safe disposal, a correct answer was given (intervention vs control group) by 100% vs 89.7% at 30 days ($P = 0.04$).

Conclusions Within the intervention group, there was a significant improvement in knowledge on safe opioid use immediately post-education, and retention of knowledge at 15 and 30 days postoperatively. The intervention group had better knowledge scores compared to the baseline control group, and 15 and 30 days after surgery.

Trial Registration: This study was registered in [clinicaltrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT03959787): NCT03959787 on May 22, 2019.

Background

Opioids are frequently prescribed for the treatment of moderate to severe pain after surgery; however, they can be associated with serious adverse effects including respiratory depression and death. Opioids may worsen sleep-disordered breathing in patients with obstructive sleep apnea (OSA), and these patients are at higher risk of postoperative opioid-induced respiratory depression. A significant proportion of prescribed opioids remain unused and many patients do not dispose of them properly, risking diversion to the community. Only 21% of patients securely store their opioid medications, and over 70% of patients keep unused opioids after surgery.

Guidelines suggest that all patients should receive education on safe use and disposal of opioids perioperatively, and the Institute for Safe Medication Practices (ISMP) in Canada recommends including the patient/family in the narcotic use process. Currently, it is not routine practice to provide standardized patient education in the preoperative clinic. A perceived lack of time may be one of the barriers to providing such educational interventions in the preoperative and surgical clinics, and this can be overcome by using patient education materials. Educational tools on specific aspects of opioid use have shown promise in nonsurgical patients.” Several studies have found an improvement in rates of safe disposal of opioids after patient education in the peri-operative setting.⁵ However, there is little evidence demonstrating improvement in patients’ knowledge of other aspects of safe opioid use (such as side effects, signs of- and risk factors for- overdose, and storage) in the surgical population.

Existing patient education pamphlets about safe opioid use can be lengthy, difficult to read, and do not emphasize the risk of OSA and opioid-induced respiratory depression. An example of such literature can be found on the American College of Surgeons’ website. Alternatively they may not be directed specifically at surgical patients. Using infographics, we developed an educational pamphlet in the surgical population that is brief and easy to understand. We hypothesize that preoperative education will increase patient knowledge about the safe use, proper storage, and disposal of opioids. The objective of the study is to determine whether the education pamphlet will increase patient knowledge about the safe use, proper storage, and disposal of opioids versus a control group without preoperative education.

Methods

The study was conducted at two multi-specialty centers: Toronto Western Hospital, University Health Network (UHN); and Women’s College Hospital; Toronto, Ontario, Canada. Research Ethics Board approval was obtained from both participating centers (Women’s College Hospital: study #2019-0024-B and Toronto Western Hospital: study #19-5164). Written informed consent was obtained from all participants. This study was registered prior to patient enrollment at clinicaltrials.gov (NCT03959787, Principal Investigator: Jean Wong, Date of registration: May 22, 2019).

All patients were assessed by a preoperative clinic nurse and anesthesiologist. There was no change in standard care regarding preoperative patient assessment and education. They were then recruited by a research assistant. A total of 100 patients were enrolled in the study from May 22, 2019 to October 2019. Eligible patients were: 1) English speaking adults ≥ 18 years of age presenting to the preoperative assessment clinic; 2) accessible for follow-up by telephone or email at 15 and 30 days postoperatively; and 3) able to provide informed consent. The exclusion criteria were: 1) patients unable to understand English; 2) patients on opioids for chronic pain; and 3) patients who had taken opioids in the past 30 days.

All patients were asked to complete a questionnaire in the preoperative assessment clinic to determine their baseline level of knowledge about safe opioid use after surgery. Patients were randomized to either: 1) intervention group - educational pamphlet and standard care, or 2) control group – standard care (no

pamphlet). A research analyst who was not involved in the study created a computer-generated randomization list for each participating site. Randomization was performed with a 1:1 allocation to intervention and control groups. At each site, the patient assignments were kept in serially numbered, opaque-sealed envelopes according to the randomization schedule. The research assistant opened the envelope after the patient consented to participate in the study.

Patients allocated to the intervention group were given the education pamphlet to read in the preoperative clinic, and repeated the knowledge questionnaire immediately after reviewing the pamphlet. All participants were asked the same knowledge questionnaire by telephone or email at 15 and 30 days postoperatively. Additional questions were asked assessing compliance with guidance given in the pamphlet on safe opioid use and disposal (patient behavior questions) at 15, and 30 days (if still taking opioids). The total scores were recorded after each completion of questionnaire. There were no changes in the surgical, anesthetic, and postoperative pain management of the participants. Prescription of postoperative opioids was not affected by patient participation in the study. Due to the impossibility for placebo education for the control group, both the participants and the research assistants were not blinded to the study intervention. However, the statisticians and study investigators were blinded to the intervention.

The primary outcome was change in questionnaire score immediately after education compared with control (baseline score). The secondary outcomes were change in score over time, correct response to safe storage, disposal, and patient behavior responses. For the change in score over time; baseline score was compared with post-education score in the intervention group, at 15, and 30 days in both groups.

Every effort was made to maintain patient participation throughout the study period and achieve contact at 15 and 30 days postoperatively. Five attempts to contact the patient were made for each follow-up.

Education Pamphlet and Questionnaire Development

A literature search was performed to find any existing patient education materials and/or questionnaires assessing patient knowledge on opioids in the perioperative setting. The existing pamphlets available in the literature did not meet the needs of our study, and we developed an educational pamphlet specifically for surgical patients using infographics (Fig. 1A; 1B). The content of the pamphlet targeted the following domains: background information on opioid analgesics, alternative methods of pain relief, proper use of opioids; side effects, signs of overdose, risk factors for adverse effects; how to properly store, and dispose of opioids. These areas were directed towards addressing potential questions a patient may ask during use of opioids postoperatively. The pamphlet was designed with the following characteristics: brevity, plain language, with essential information for surgical patients. This was integrated into an infographic to increase readability and improve comprehension.

A questionnaire was developed to assess patients' knowledge of safe opioid use after surgery (The "Safe Use Of Opioids Questionnaire"; Fig. 2) based on previous questionnaires.¹¹ Our questionnaire has a Flesch Kincaid readability test score of 5.21, meaning a person with a grade 5 level of education can

understand the content. There were 35 True/False questions and 3 multiple choice questions with a single correct answer, giving a maximum score of 38. Additional patient behavior questions were developed for use at 15 and 30 days postoperatively to assess how patients actually behaved when using, storing, and disposing of opioids (Supplemental Fig. 1).

We consulted a Patient Education specialist from the UHN Patient Education Department and Patient Partners Program for assistance in developing material which was patient-centered and easy for patients to read, understand and use. The Patient Partner also provided feedback on the pamphlet and questionnaire prior to performing a pilot study on 20 patients to test the readability and usability of the preliminary patient educational material. The pamphlet was modified based on feedback from the patients in the pilot study.

Statistical Analysis

To determine whether the education increases knowledge about safe use of opioids, the pre-education and post-education questionnaire results were compared between the control group and the intervention group. The primary outcome was analyzed using repeated measure analysis of variance (rANOVA). The assumptions of independent observations and normality was satisfied based on data set-up and examining the distribution of test scores. Sphericity assumption was tested with Mauchly's test, with the result suggesting the multivariate test statistics should be used. Subject characteristics were compared using chi-square and Fisher's exact test. The secondary outcomes were compared using pooled t-test for continuous variables and chi-square analysis for categorical variables. All statistical analyses were performed using SAS 9.4.

Sample Size

Our sample size calculation was based on detecting a clinically significant improvement of 20% between the intervention group versus the control group in the primary outcome of opioid questionnaire knowledge score. Based on preliminary scores from the pilot study; assuming a significance level of 0.01 and 80% power, and accounting for a predicted attrition rate of 0.3, we calculated that 50 patients per group were required.

Results

A total of 191 patients were assessed for eligibility for the study, and 91 were excluded (Fig. 3). The remaining 100 participants were randomized: intervention group: 52 and control group: 48 (Fig. 3). Patient behavior questions were asked in all participants at 15 days, and 15 participants at 30 days. There were only a small number of patients still taking opioids 15 days postoperatively. Patient demographics are summarized in Table 1. There was no difference in baseline knowledge questionnaire scores between the control and intervention groups (Table 2).

Table 1
Patient demographics and baseline characteristics

Characteristic	Control (n = 48)	Intervention (n = 52)
Age, median (IQR), years	50 (36–65)	51 (37–66)
BMI, median (IQR)	28.4 (24.9–34.1)	26.6 (23.2–33.5)
Male sex, n (%)	18 (37.5)	21 (40.4)
Education: college or higher, n (%)	34 (72.3)	41 (83.7)
Annual Income > 50,000, n (%)	21 (45.7)	33 (66.0)
Married, n (%)	24 (51.1)	32 (62.8)
Alcohol Status – Social, n (%)	27 (56.3)	30 (58.8)
OSA, n (%)	10 (21.3)	6 (11.5)
Surgical Type		
Orthopedic, n (%)	31 (65)	39 (75)
General, n (%)	9 (18.8)	8 (15.4)
Gynecology, n (%)	6 (12.5)	2 (3.8)
Breast, n (%)	2 (4.2)	3 (5.8)
<i>Abbreviations: BMI, Body Mass Index; OSA, Obstructive Sleep Apnea</i>		

Table 2
Knowledge questionnaire scores in the Control vs Intervention groups over time.

	Questionnaire Score out of 38 Mean (95% CI)		Difference (control – intervention mean)	P value
	Control	Intervention		
Pre-education	28.3 (26.6–29.9)	27.8 (26.3–29.3)	0.44	0.69
Post-education	-	34.2 (33.1–35.3) ^a	-5.96 ^b	< 0.0001 ^b
15 days	29.1 (27.9–30.2)	31.6 (30.5–32.7) ^a	-2.55	0.002
30 days	30.5 (29.2–31.7)	32.4 (31.3–33.5) ^a	-1.97	0.017
^a Score significantly higher than pre-education value and difference in means was significant ($P < 0.05$)				
^b Pre-education score used as comparator in control group				

Post-Education Scores

Between groups, the post-education score immediately after the intervention was higher in the intervention group than the control group baseline 34.2 [95% CI 33.1–35.3] vs 28.3 [95% CI 26.6–29.9]; $P < 0.0001$) (Table 2). Within the intervention group, the mean score immediately post-education (34.2 [95% confidence interval (CI) 33.1–35.3]) was higher than baseline (27.8 [95% CI 26.3–29.3]); $P < 0.0001$. The result from the multivariate rANOVA suggests that both the education and the interaction between education and time are significant determinants of knowledge test score ($P < 0.001$).

15- and 30- day scores

In the intervention group, the mean questionnaire score was higher than baseline at 15 and 30 days postoperatively, but lower than the immediate post-education score (Table 2). The difference between mean 15-day and pre-education questionnaire score was 3.8 (95% CI 2.1–5.5; $P < 0.05$) and between mean 30-day and pre-education questionnaire score was 4.6 (95% CI 2.9–6.3; $P < 0.05$) (Table 3). In the control group, there was no difference between mean 15-day and pre-education questionnaire score but the difference between mean 30-day and pre-education score was significant (2.2 [95% CI 0.2–4.2; $P < 0.05$]) (Table 3). For between-group comparisons, scores in the intervention group were significantly higher than control at 15 and 30 days (Table 2).

Table 3

Comparison of knowledge questionnaire scores by time point within intervention and control group

Education time Comparison	Intervention			Control				
	Difference between mean	95% CI		P Value	Difference between mean	95% CI		P Value
Post- - Pre-	6.40	4.85	7.96	< 0.05				
15 Day - Pre-	3.80	2.13	5.46	< 0.05	0.80	-1.17	2.78	> 0.05
30 Day - Pre-	4.61	2.93	6.29	< 0.05	2.19	0.21	4.18	< 0.05

Figure 3. Consort Diagram

Safe Storage and disposal

There was no difference in baseline knowledge on safe storage between the two groups. We observed an increase in the proportion of patients answering correctly over time in the intervention group, but the difference between the groups at each time point was not significant. The proportion of patients answering disposal questions correctly in intervention vs control groups was 78.9% vs 95.8% at baseline ($P = 0.01$). Immediately post-education, 100% patients in the intervention group answered correctly. At 15 and 30 days postoperatively, intervention vs control group scores were 97.5% vs 92.5% ($P = 0.30$) and 100% vs 89.7% respectively ($P = 0.04$).

Patient behavior questions

There was no difference between the two groups regarding an appropriate disposal method (either actual or planned) at 15 and 30 days (Supplemental Fig. 2). No patients reported driving while using opioids at 15 or 30 days and 1 patient in each group reported drinking alcohol at 15 days (Supplemental Fig. 2).

Patient Satisfaction

Thirty eight patients (84% of those answering) at 15 days and eight patients (88% of those who answering) at 30 days agreed or strongly agreed with the statement “the patient education pamphlet helped me learn how to use opioids more safely”. Thirty-six patients (95%) at 15 days and 8 patients (100%) at 30 days agreed or strongly agreed with the statement “I would recommend the pamphlet to others”. The Pearson correlation coefficient for satisfaction score and knowledge score was -0.1742 ($P = 0.2469$), and for recommendation score and knowledge score was 0.1304 ($P = 0.3878$), suggesting that these ratings were not influenced by how well the patient performed on the knowledge tests.

Discussion

Our results show a significant improvement in knowledge on safe postoperative opioid use after administration of a patient education pamphlet. This improvement in knowledge about safe opioid use was sustained at 15 and 30 days post-intervention. There was a significant difference between the

intervention and control group demonstrating higher levels of knowledge in the intervention group at both 15 and 30 days post-education. Although the between-group difference in knowledge on safe storage and disposal was not significant at all time points, we observed a trend towards improvement in the group who received the patient education pamphlet.

In this study, we were able to demonstrate written patient education materials can improve patients' knowledge of safe opioid use in the perioperative setting. Previous work in the surgical population has been unable to show an improvement in safe opioid practice after written patient instructions. This may be due to the infographics in our pamphlet being brief and easy to read. Our work shows similarities with the results of other studies in the nonsurgical population showing that patient education materials improve patient knowledge on safe opioid use, for example in palliative care¹⁰, emergency medicine⁹ pain management, and dentistry.¹¹

In our study, we were unable to show improvement in storage and disposal practices, however, this may be due to the small number of patients who were still using opioids at the 15 and 30 day follow-up. In contrast, De la Cruz et al.¹⁰ showed improvement in storage and disposal practices after administration of their patient education material in palliative care. Their education material was supplemented by personalized patient counselling. Interestingly in emergency medicine, written patient education material alone also did not improve patient knowledge on safe storage⁹, but a randomized controlled trial evaluating multimodal (written + spoken) patient education for safe opioid use found fewer patients reporting having driven while taking opioids after discharge.¹⁹ A systematic review of routine patient education in orthopedic patients found that verbal and written education combined was superior to written education alone. Although ideal, such personalized education about opioids would be resource-intensive in a busy pre-operative clinic. The timing of administration of the education material differs between studies, and further research is warranted to assess the optimal timing of patient education for different aspects of knowledge.

We demonstrated high levels of patient satisfaction with the education pamphlet, and most patients would recommend it to others. This is a further strength of the pamphlet as any education material must be user-friendly with a perceived benefit to patients.

Our study has several limitations. A lack of a placebo pamphlet in the control group may be a potential source of bias. We did not obtain a post-baseline assessment in the control group, therefore, we did not assess whether patients in the control group may have improved by repeating the questionnaire again while they were in the preoperative clinic. However, the difference the two groups remained significant at 15 and 30 day follow-up. In addition, the exclusion criteria included patients who were not available for follow-up by telephone or e-mails. This may exclude a subset of patients with limited access to health information and may benefit more from patient education materials. We excluded patients who were unable to understand English and this is another group who may be vulnerable to lower levels of health literacy. This pamphlet will be translated into 3 languages. As well, we developed our own questionnaire to assess patient knowledge about opioids using strong methodology for questionnaire design. However,

further validation of the questionnaire is needed. Finally, the relatively small number of patients who continued to use opioids at the follow-up periods means that our study may not have been adequately powered to detect smaller differences, for example in safe storage and disposal practices.

Conclusions

In summary, we have demonstrated that a brief patient education pamphlet with infographics improves surgical patient knowledge of safe opioid use, and this improvement was sustained over 30 days. Such educational material is inexpensive, easy to administer and should be offered to all patients requiring postoperative opioids. Further research to explore different modes and timing of patient education to improve opioid safety are warranted.

List Of Abbreviations

BMI Body Mass Index

CI confidence interval

OSA obstructive sleep apnea

rANOVA repeated measure analysis of variance

SD standard deviation

UHN University Health Network

ISMP Institute for Safe Medication Practice

Declarations

Ethics approval and consent to participate

Ethics approval from the research ethics boards of both participating sites including the Toronto Western Hospital, University Health Network (UHN); and Women's College Hospital. Written informed consent was obtained from all participants.

Consent for publication

Not applicable.

Availability of data and material

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

JW reports grants from the Anesthesia Patient Safety Foundation and Merck Inc. outside of the submitted work. JW is supported by a Merit Research Award from the Department of Anesthesia, University of Toronto. FC reports research support from the Ontario Ministry of Health and Long-Term Care and the University Health Network Foundation; and UpToDate royalties and STOP-Bang proprietary to the University Health Network. The other authors report no competing interests.

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Author Contributions:

HRD interpreted data and wrote the manuscript. EL helped design the study, questionnaire and infographic. MG helped design the study, questionnaire and infographic. JC helped with data cleaning, data analysis, data interpretation, figure and table generation, and helped write the manuscript. DRU helped design the infographic and edited the manuscript. TDR helped design the infographic and edited the manuscript. DTW helped design the study, write and edit the manuscript. FC helped write the manuscript. JW coordinated the study, designed the study, interpreted data and helped write the manuscript. All authors have read and approved this manuscript.

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Figures

Opioid Use and Safety

1 Treating pain after surgery

It is normal to experience pain and the goal of pain management is to decrease pain. It may not be possible to eliminate it.

Option 1: Non-drug treatments - effective with minimal side effects

- Massages
- Icing
- Meditation

Option 2: Non-opioid drugs - take when you can't complete your usual daily activities

- a) Ibuprofen 400 mg every 8 hrs OR
- b) 2x Acetaminophen 500mg every 4-6 hrs

Option 3: If non-drug treatments and over the counter medications do not reduce your pain within 45 minutes, you can use opioids

Examples of opioids: Codeine (Tylenol #3[®]), Morphine, Hydromorphone (Dilaudid[®]), Oxycodone (Percocet[®]), Fentanyl, Tramadol

2 Proper use

Use the lowest dose you need for the shortest possible time.

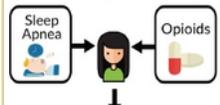
3 Monitor: when using opioids

There is a greater risk of serious side effects if you:

1. Have sleep apnea →
2. Are above the age of 65
3. Have never used opioids before

Sleep Apnea is when you snore loudly and repeatedly stop breathing during sleep

- Side effects**
- Slow or shallow breathing
 - Nausea
 - Constipation
 - Feeling drowsy or sleepy



- Risks of opioid use**
- Build up of tolerance
 - Addiction
 - Overdose

February 12, 2020

4 When taking opioids, avoid:

Driving	Sleep/anxiety medications	Alcohol	Cannabis/Marijuana
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5 Remember

1. Taper and Reduce As you recover your pain should decrease. Consider reducing your opioid dose by taking less tablets or waiting longer between doses.

- | | | | |
|------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 2. Never share opioids | 3. Store your opioids securely
<small>Keep opioids locked and away from children</small> | 4. Dispose opioids properly
<small>Give unused opioids to your pharmacist</small> | 5. Do not:
- Put opioids in the garbage
- Keep opioids for future use |
|------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|

6 Overdose: recognize and act

STOP taking opioids if you have:	Overdose	CALL 911 if the person taking opioids
→ Hallucinations	Will not wake up ←	
→ Severe dizziness	Is not breathing ←	
→ Trouble staying awake	Snore loudly or makes loud choking noises when asleep ←	
→ Loud or unusual snoring	Small, contracted pupils ←	
→ Slow breathing rate		

If you experience overdose symptoms, contact a health care provider.

Figure 1

Patient Education Pamphlet

QUESTIONNAIRE: SAFE USE of OPIOIDS

Please choose true or false for each of the following statements:

Q1) What is a side effect caused by opioid use?	True	False
a. Slow or shallow breathing	<input type="checkbox"/>	<input type="checkbox"/>
b. Increased frequency of urination	<input type="checkbox"/>	<input type="checkbox"/>
c. Sore throat	<input type="checkbox"/>	<input type="checkbox"/>
d. Coughing	<input type="checkbox"/>	<input type="checkbox"/>
e. Nausea	<input type="checkbox"/>	<input type="checkbox"/>

Q2) Which of these medications should not be taken with opioids?	True	False
a. Heart burn medications	<input type="checkbox"/>	<input type="checkbox"/>
b. Anxiety medications	<input type="checkbox"/>	<input type="checkbox"/>
c. Blood pressure medications	<input type="checkbox"/>	<input type="checkbox"/>
d. Asthma medications	<input type="checkbox"/>	<input type="checkbox"/>
e. Sleep medications	<input type="checkbox"/>	<input type="checkbox"/>

Q3) What are signs of opioid overdose?	True	False
a. Severe dizziness	<input type="checkbox"/>	<input type="checkbox"/>
b. Trouble staying awake	<input type="checkbox"/>	<input type="checkbox"/>
c. Rash	<input type="checkbox"/>	<input type="checkbox"/>
d. Slow breathing rate	<input type="checkbox"/>	<input type="checkbox"/>
e. Diarrhea	<input type="checkbox"/>	<input type="checkbox"/>

Q4) Which of these is a risk of using opioids for a long period of time?	True	False
a. Addiction to opioids	<input type="checkbox"/>	<input type="checkbox"/>
b. Headaches	<input type="checkbox"/>	<input type="checkbox"/>
c. Vision changes	<input type="checkbox"/>	<input type="checkbox"/>
d. Building up a tolerance to opioids	<input type="checkbox"/>	<input type="checkbox"/>
e. Seizures	<input type="checkbox"/>	<input type="checkbox"/>

Q5) Which of the following puts you at higher risk of side effects from opioids?	True	False
a. Arthritis	<input type="checkbox"/>	<input type="checkbox"/>
b. Being over the age of 65	<input type="checkbox"/>	<input type="checkbox"/>
c. Sleep apnea	<input type="checkbox"/>	<input type="checkbox"/>
d. Doing light exercise while on opioids	<input type="checkbox"/>	<input type="checkbox"/>
e. Having not used opioids before	<input type="checkbox"/>	<input type="checkbox"/>

Q6) Examples of opioids include:	True	False
a. Hydromorphone	<input type="checkbox"/>	<input type="checkbox"/>
b. Oxycodone	<input type="checkbox"/>	<input type="checkbox"/>
c. Prednisone	<input type="checkbox"/>	<input type="checkbox"/>
d. Gabapentin	<input type="checkbox"/>	<input type="checkbox"/>
e. Tylenol #3	<input type="checkbox"/>	<input type="checkbox"/>

Q7) When you are taking opioids you should?	True	False
a. Use all of the opioid medications prescribed by your doctor	<input type="checkbox"/>	<input type="checkbox"/>
b. Use opioids if other pain medications do not reduce your pain	<input type="checkbox"/>	<input type="checkbox"/>
c. Continue taking sleep medications	<input type="checkbox"/>	<input type="checkbox"/>
d. Use opioids to treat severe pain	<input type="checkbox"/>	<input type="checkbox"/>
e. Ask your health care provider how and when you can reduce your dose	<input type="checkbox"/>	<input type="checkbox"/>

Multiple choice questions:

Please select the correct answer, only select **ONE** answer.

- How much of any alcoholic drink can you drink when taking opioids?
 - a. None
 - b. 1 drink for special occasions
 - c. 1-2 drinks a week
 - d. 1 drink a day
- Where should you keep your opioids at home?
 - a. In a drawer
 - b. In a locked cabinet
 - c. Together with your other medications
 - d. All of the above
- What should you do with unused opioids?
 - a. Throw unused opioids in the garbage
 - b. Save them for another time you need them in the future
 - c. Save them for your family member who may need them
 - d. None of the above

Figure 2

The “Safe Use Of Opioids Questionnaire”

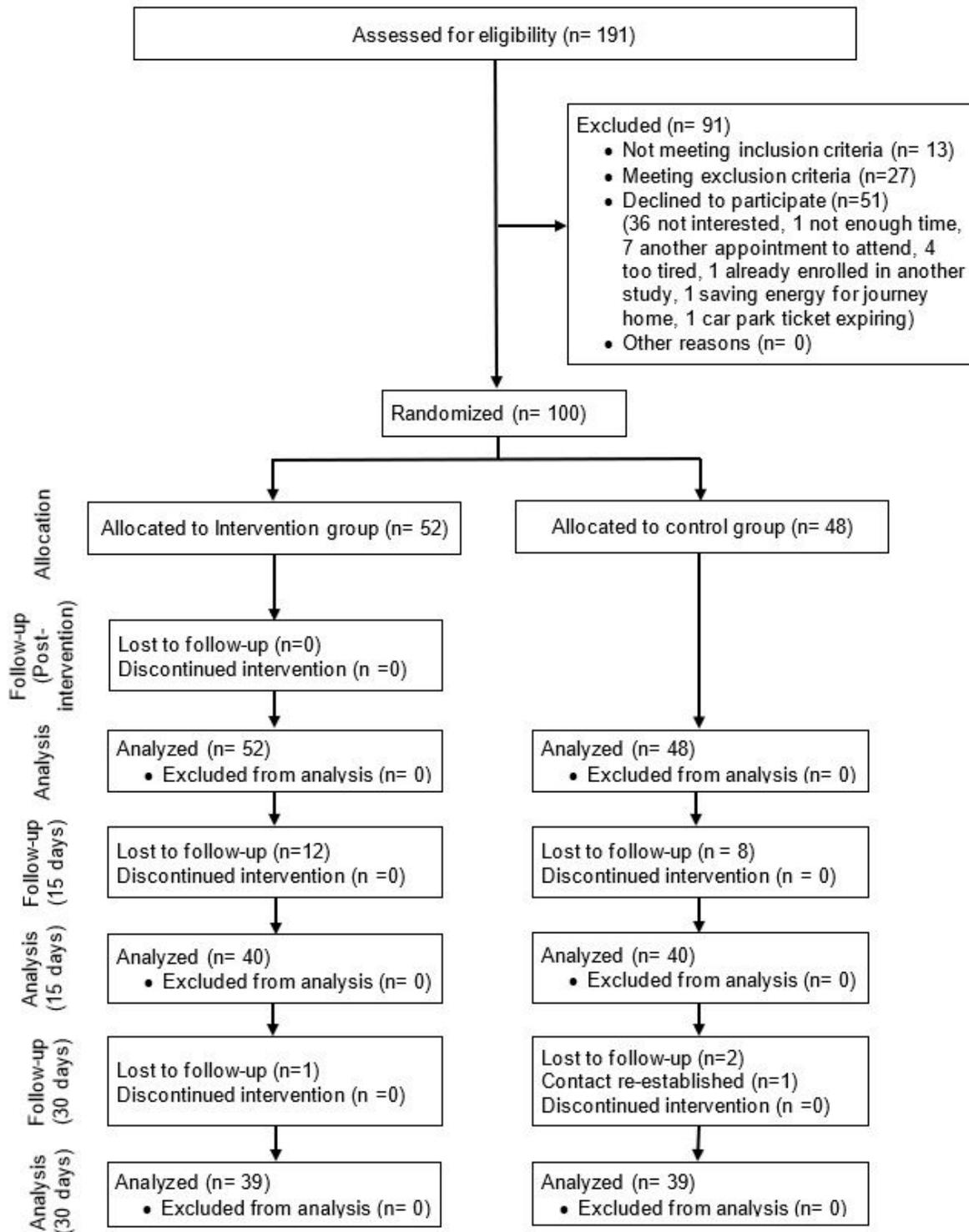


Figure 3

Consort Diagram

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [SupplementalFigure2.pdf](#)
- [SupplementalFigure1OpioidUsageQuestions.pdf](#)