

Title of work: The effectiveness of preoperative education on managing daily occupations after surgery in order to decrease anxiety for patients undergoing hip replacement.

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CLINICAL SCENARIO

Patients undergoing total hip replacement (THR) surgery struggle with anxiety around the operation's effects on their life, including ability to manage daily activities (Callaghan, Rosenberg & Rubash, 2007). Anxiety can decrease concentration, perception, learning capacity and function (Carpenito-Moyet, 2008), affecting ability to execute daily occupations. This is relevant as occupational therapists (OT) believe participation in occupation is required for health and wellbeing (Wilcock, 2006). OTs aim to ensure patients' functional independence following surgery through orthopaedic equipment provision, education on equipment use, hip precautions, and managing daily occupations (Callaghan, Rosenberg & Rubash, 2007). However, it is questionable how beneficial preoperative education is in decreasing THR patients' anxiety. Through investigating this, optimal OT evidence-based practice (EBP) will be ensured.

FOCUSSED CLINICAL QUESTION:

In patients undergoing hip replacement, does preoperative education on managing daily occupations after surgery decrease client anxiety?

SUMMARY OF SEARCH, 'BEST' EVIDENCE' APPRAISED, AND KEY FINDINGS

There was little relevant research related to the clinical question. Although there was information on results of education on THR patients, few were anxiety or OT specific. Five articles were found that fitted exclusion/inclusion criteria. Spalding (2003) was selected as it is OT focused and was considered the best qualitative evidence. This study suggests further research is required on how to reduce patient anxiety around THR, in order to increase rehabilitation benefits. Butler, Hurley, Buchanan and Smith-VanHorne (1996) has a multidisciplinary approach and looks at various educational outcomes. However, it was used due to relevance to OT and reducing anxiety, and was considered the best quantitative evidence.

CLINICAL BOTTOM LINE

Preoperative education booklets, and education programmes and their delivery process can decrease THR patients' anxiety by familiarising the future. However, further research is required, particularly on specific OT roles in this.

LIMITATION OF THIS CAT:

This critical appraisal has been peer reviewed by two student authors and one lecturer as part of an assignment.

SEARCH STRATEGY:

To search for relevant articles, Cochrane, CINAHL, Pubmed, ProQuest, OTseeker and Google Scholar were utilised. If full text was unavailable online, they were requested from the Bill Robertson Library. Manual searches were conducted, however these articles were outdated and unobtainable. The following search terms were used:

- "Occupational therapy"
- "Hip surgery" OR "Total hip replacement" OR "Joint replacement" OR "Arthroplasty"
- "Anxiety"
- "Education" OR "Preoperative Education" OR "Hip Precautions"

INCLUSION AND EXCLUSION CRITERIA**Inclusion:**

- Published in English language
- OT relevant
- Preoperative education on managing daily activities as an intervention
- Addressed patient anxiety
- Qualitative, quantitative research and systematic reviews
- Patients undergoing THR

Exclusion:

- Opinion pieces, literature reviews and informal case studies
- Education only after surgery has occurred

RESULTS OF THE SEARCH:

Study Design/Methodology	Level	Author(Year)
Systematic review (meta-analysis)	1	McDonald, S., Hetrick, S. E., & Green, S. (2008).
Quantitative (randomised control trial)	2	Butler, G. S., Hurley, C. A. M., Buchanan, K. L., & Smith-VanHorne, J. (1996).
Quantitative (randomised control trial)	2	Crowe, J., & Henderson, J. (2003).
Qualitative	5	Prouty, A., Cooper, M., Thomas, P., Christensen, J., Strong, C., Bowie, L., & Oermann, M. H. (2006).
Qualitative	5	Spalding, N. J. (2003).

BEST EVIDENCE:

- Quantitative:
Butler, G. S., Hurley, C. A. M., Buchanan, K. L., & Smith-VanHorne, J. (1996). Prehospital education: Effectiveness of total hip replacements surgery patients. *Patient Education and Counseling*, 29(2), 189-97.
- Qualitative:
Spalding, N. J. (2003). Reducing anxiety by pre-operative education: Make the future familiar. *Occupational Therapy International*, 10(4), 278-293.

These were selected as they display two forms of evidence, follow inclusion/exclusion criteria, are most suited to the clinical question and provide the best evidence. Although the Butler, Hurley, Buchanan & Smith-VanHorne (1996) is not recent, it is one of the most suitable out of the articles found.

SUMMARY OF BEST EVIDENCE

Article Title: Prehospital education: effectiveness of total hip replacements surgery.

1. Study Aim: The study aimed to evaluate effectiveness of a preadmission education booklet mailed to patients scheduled to have THR. The purpose was to measure education success in reducing anxiety at admission and discharge, improving hospitalisation satisfaction, increasing patient prehospitalisation preparation and reducing hospital stay length.

It also aimed to explore gender differences on booklet utilisation.

Design: Quantitative- Randomised Control Trial (RCT).

Setting: Prior to admission, education booklets were mailed to patients' homes. Once admitted, education paralleling booklet information was provided at Victoria General Hospital, Halifax, Canada.

Participants: Potential subjects included all patients admitted for THR during the study period. Inclusion criteria were admission for THR and capacity to read Grade 6 level English. 13 patients were excluded due to being English illiterate, declining participation, death and discharge before data collection. Information was attained from 123 patients, 34% of which were discovered to have already undergone THR. Researchers expected this to weaken education effect therefore these were excluded. Data was collected from 80 remaining participants, 39 male and 41 female. Age range was 17-85 years, with a mean of 62.64 (S.D.= 12.95). Mean ages between the intervention and control groups were not significantly different.

Method: Four to six weeks prior to admission for THR, the hospital routinely sends patients a preadmission package including what to bring, hospital routines, services, and admission protocol. The Total Hip Replacement: A Patient Guide education booklet was randomly added to half of these. The intervention group (Booklet group) consisted of 32 participants and the control group (No-Booklet group) of 48. Patients were not informed of the study at this point.

This education booklet was prepared by a multidisciplinary team with contribution from nurses, physiotherapists, OTs, discharge planners and social workers. 10 THR patients assessed its usefulness.

Information consisted of:

- Normal and diseased hip anatomy, and total hip prosthesis.
- Exercise instructions.
- What to expect in hospital (admission and postoperative procedures, OT and

physiotherapist role).

- Precautions following THR (guidelines for sitting, bathing, dressing, etc.).
- Discharge planning (preparing meals, rearranging furniture etc.).

Researchers approached patients on admission, describing the study and requesting participation. On consent, patients completed the State Scale of the Spielberger State-Trait Anxiety Inventory (STAI). The Booklet and No-Booklet groups were treated the same during hospital stay, receiving education corresponding to booklet contents. The day before discharge patients completed a second State Scale of the STAI and a Patient Satisfaction Questionnaire. The Booklet group received a questionnaire evaluating the developed booklet. A post hoc investigation examined other benefits of decreased anxiety and participating in preparatory exercises.

Results: State Scale of the STAI raw scores were converted to percentile scores. On admission, the Booklet group's mean score was 27.93 (S.D.=25.24) and the day prior to discharge 21.57 (S.D.=18.44). The No-Booklet group had means of 42.65 (S.D. =29.06) at admission, and 31.15 (S.D.=22.93) at discharge. This indicates significant anxiety decrease in both groups from admission to discharge. The Booklet group showed considerably less anxiety at both times than the No-Booklet group. However, the Booklet group's questionnaire stated participants were only 'a little less stressed' after reading information.

Additionally, prehospital education effects on the following were presented;

- Length of hospital stay, anxiety on admission and discharge, home preparation satisfaction for discharge was compared between genders.
- Regularity of reading booklet.
- Booklet user friendliness.
- Satisfaction with amount of information received.
- Types of exercises practised.
- Group differences in home preparations for discharge and length of hospital stay.

The post hoc investigation revealed less pre and post hospital therapy was needed for patients who did preparatory education and exercises.

Original Authors' Conclusions:

Information booklets for THR prehospital education can be economical and effective in decreasing anxiety associated with hospitalisation, teaching exercises to promote recovery and reducing postoperative OT and physiotherapist intervention time required.

2. Critical Appraisal: Validity

Taylor (2007) states the following areas should be addressed to determine validity during a critical appraisal;

Are the results valid?

The study purpose was not clear in the abstract and there was no study question. However, later two specific purposes were articulated. No detail was provided on randomisation methods other than the additional education booklet added to half the preadmission packages. After sample gathering, researchers recognised some patients had prior THR education. These were expected to weaken study therefore were excluded. Detail on omitted participants was provided. The extensive literature review examined numerous sources, incorporating various education strategies. This helped reduce bias and was relevant in showing education impacts and need for further examination of specific education effectiveness. Neither groups receiving preadmission mail were informed about the study. Once admitted, patients' involvement was requested, but blinding to group continued. This increases validity as behavioural influence is less likely (Taylor, 2007). It is unclear whether researchers were blinded which could create bias. Staff blinding took place in the post hoc investigation. There were only 32 Booklet participants compared to 48 No-Booklet participants, with no significant difference in mean ages. The Booklet group had a smaller percentage of men than the No-Booklet group, however distribution analysis show no noteworthy differences relating to gender. Since there were no considerable differences, variance in results are not due to inconsistency between groups.

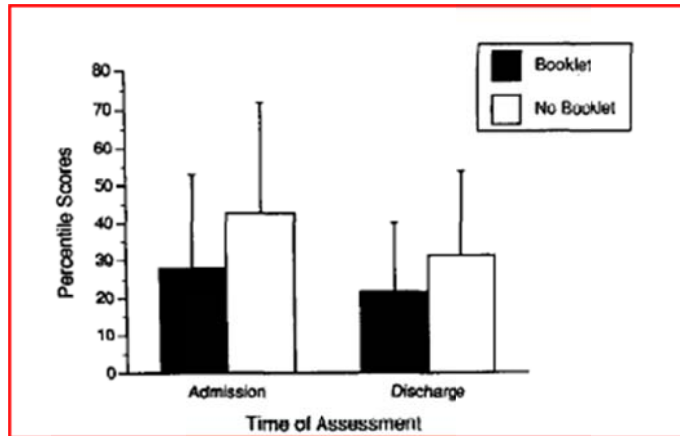
To prevent bias and influencing results of education, groups were treated the same during hospital stay, increasing validity. Consent from an ethical committee was not mentioned, however informed consent was gathered from participants. It was ethical in the sense that treatment was not withheld, rather additional education was provided to the intervention group.

What are the results?

The data collection process was clear; length of stay data came from hospital records and three assessment tools were utilised, measuring what the study aimed to measure. The State Scale of the STAI, used as an outcome measure, was referenced however no validity or reliability review was given. All participants completed a Patient Satisfaction Questionnaire. The researchers noted that questionnaires' wording may have affected lack of difference found between groups. The Booklet group also received a questionnaire to evaluate education booklet. Analysis of State Scale of STAI was not explained other than conversion of raw scores into percentile scores using general medical and surgical patient norms. A MANCOVA was done, using Gender as a co-variate.

Results addressed the study purpose and were under subheadings. Clear group comparisons were written, and presented in three tables and one graph. The education booklet had positive effects not resulting from chance as all p-values were

<0.05. Anxiety data was displayed in the graph below, showing both groups had significant anxiety reduction from admission to discharge. The Booklet group, however, had considerably less anxiety at both times, indicating the education booklet was effective in reducing anxiety.



Conclusion: How will the results help me work with my clients?

The study is relatively valid and reliable in evaluating effects of THR prehospital education. However, since some areas were not OT specific, the study can only be utilised optimally within a multidisciplinary approach. Further information on analysis is needed in order to duplicate the study or use it within practice. There may have been result misinterpretation due to questionnaires' wording, making it less useful. Additionally, there were good results but these were not solely focused on education decreasing anxiety. Consequently the study does not provide great depth on this area, thus to implement it in practice effectively further research is required.

Article title: Reducing anxiety by pre-operative education: Make the future familiar.

1. Study aim: The study aimed to gather an understanding of how the preoperative education process is beneficial in decreasing anxiety for patients prior to THR.

Design: Qualitative- phenomenology.

Setting: This took place in hospitals in England.

Participants: The convenient sample consisted of seven health care professionals (HCP) presenting pre-operative education programmes, and 10 patients attending programmes that were awaiting THR within three months. Potential participants from one National Health Service Trust were informed through writing and explanation about the study and potential impacts. Information sheets, consent forms and preoperative education invitations were mailed to patients for review prior to programme commencement. The researcher could be approached at the programme if patients wished to be involved. HCPs were sent forms, and

information was provided in a meeting which after they could approach the researcher if wanting to be involved. There was no information on key demographics or specific participant inclusion/exclusion criteria, except patients had to be awaiting a THR.

Method: Developed ethical strategies were approved by the Trust's ethics committee. Participant informed consent was gained and pseudonyms were utilised for anonymity. Profession identity was protected through the term 'health care professional'. Information was gathered through observation of five pre-operative education groups on the ward and three team meetings. Each two hour programme had approximately twelve patients and included explanation of THR process from admission to rehabilitation. Presentations incorporated equipment demonstration, verbal explanation, videos, and booklets containing writing and diagrams. Former patients were invited to provide experiences.

16 Semi-structured interviews in a quiet hospital room were conducted on seven presenters. 10 patients completed 20 interviews in their homes within two weeks of attendance, and then in a hospital office a week postoperatively. Documentation including invitations, timetables, 28 evaluation forms and booklets were reviewed.

Transcriptions were made from tape-recorded interviews and a diary noted emerging themes. Data was carefully reviewed and analysed by coding and categorizing themes.

Findings: The following themes emerged:

Presenters' experiences: From clinical experience, they felt education content and process prepared patients for what to expect, reassuring them which reduced anxiety. Using demonstrations and images, familiarising HCPs and hospital environment, and providing questioning time assisted patients in remembering content, created clarity and made future surroundings known.

Patients' experiences: Patients felt less anxious through reassurance of knowing future occurrences and requirements, staff involved and environment. They valued that HCPs were accessible, understanding and professional, and that booklets could be revisited.

Original Authors' Conclusions: The preoperative education programme content and delivery made THR patients feel less anxious through familiarising the future. Reassurance through knowledge and understanding of future experiences, staff involved and the environment enabled anxiety reduction.

2. Critical Appraisal: Trustworthiness

To determine trustworthiness the following areas should be examined (Taylor, 2007);

Credibility: A true picture of the phenomenon studied and evidence for the need of the study was created through an extensive literature review. Triangulation of data collection methods and time triangulation of data collection with interviewees took place. Member checks of data analysis and draft reports were completed, and mentor peer examination took place. A reflexive diary was used for an audit trail and to facilitate reflection, decreasing bias. These aspects all increase credibility. Participants volunteered themselves, possibly impacting results as this could be an untrue population representation, decreasing credibility.

Transferability: The purpose stated is clear. The study is largely transferable but lacks some details. A distinct explanation of participant recruitment was given, but no demographics. In-depth topic detail, order, timeframe, teaching methods and participant numbers around education programme was provided. Setting description and data collection methods were clear. Investigated documentation and observation focus was stated. Although there was interview process description, no question focus details were provided of these or of the evaluation questionnaires. Data analysis methods were clearly explained. The researcher expressed data collection was influenced through the way observation and questioning occurred, feeling this would affect transferability with people in other settings having diverse approaches to these tasks.

Dependability: Dependability is decreased through limited explanation of semi-structured interview and evaluation form focus, however the study process was clearly explained otherwise. A limitation stated was the lack of a standardised instrument to collect data.

Themes were clearly presented with direct participant quotations, giving more substance. It is clear that results came from the study, rather than the literature review. Data was carefully read and re-read for coding and categorizing themes, and an audit trail and peer examination occurred. These techniques ensured dependability.

Confirmability: Although only one researcher, auditing and peer reviews took place to understand the basis for decisions. Additionally, a reflexive journal identified researcher's thoughts and continuous member checks ensured correct data interpretation. These methods helped reduce bias, however one limitation stated was inability to control researcher bias.

Summary/Conclusion: Findings reflected the study's purpose, giving a relatively comprehensive and trustworthy understanding of how the preoperative education process is beneficial in reducing anxiety for patients awaiting THR. It is largely transferable due to efficient outline of processes, however may be affected by lack of participant demographic detail and no information about questions' focus in interviews and evaluation forms. Credibility could be increased if differing strategies were utilised in recruiting participants to give a truer population representation. Differing researchers' approaches to observation and questioning

must be noted as this can impact repeated studies results. The reflexive field diary, triangulation of data collection methods, time triangulation of data collection, peer reviews, auditing, and member checking all contribute to creditability, dependability and confirmability, adding clinical value. Inability to control researcher bias may create some limitations to study's usefulness.

IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH

Both articles provided evidence that preoperative education on managing daily occupations postsurgery is effective in decreasing anxiety for patients undergoing THR. Results give useful recommendations for OTs, highlighting the need for THR education to decrease anxiety and displaying new approaches that may increase education effectiveness. They show anxiety is decreased by familiarising the future, and both content and delivery methods aid in this. Spalding (2003) displayed combining verbal, written and visual education techniques is effective. Moreover, education is influential when covering all aspects of THR, including environment and staff involved. Consequently, in practice it is important that content covers all areas and various means are employed to incorporate these. The quantitative study's statistical evidence shows education booklets decrease anxiety, and both articles emphasised benefits of revisiting booklet information. Therefore education booklets can be useful within practice.

Butler, Hurley, Buchanan and Smith-VanHorne (1996) showed anxiety is not the only aspect affected by education, and there are numerous other benefits. Ability to manage daily activities after discharge is affected by factors additional to anxiety. Subsequently, in practice it may be useful to recognise education does not have to solely aim at decreasing anxiety but can also target other factors that are interlinked in promoting clients' independence. This article had multidisciplinary involvement, showing education is effective with the expertise of various professions.

Although the articles can mostly be trusted and are useful, caution must be taken in applying results directly from studies to practice due to limitations. The quantitative study lacked depth on specific effects on anxiety as it inspected other benefits of education, and had a multidisciplinary approach therefore did not outline the specific OT role. It stated possible questionnaire misinterpretation due to wording, therefore results are less applicable. The Spalding (2003) article stated a major limitation was the inability to control researcher bias and having no standardised assessment tool. The participant recruitment strategy may also

have impacted whether it was a true population representation. No demographic detail or outline of interview question and evaluation form focus was given. Both articles recognise further research is required to add to why and how education is effective. Therefore, in implementing this into OT practice, it would be beneficial to research additional studies to ensure best EBP.

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