Patients' Adherence to Newly Prescribed Medication Regimens After Undergoing Coronary Artery Bypass Grafting Surgery

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Background

- Medication usage is the primary treatment for coronary artery disease (CAD), and coronary artery bypass grafting (CABG) is performed when revascularization is necessary.

- Adherence is defined as correctly taking medication in the manner it was prescribed (Ho, Bryson, & Rumsfield, 2009).

- Medication adherence rates in patients who have undergone CABG are very low post-operatively: 75% take medication as prescribed after discharge and 60% take medication as prescribed one year following surgery (Pakpour et al., 2014).

- Higher mortality rates (up to 30.4%, depending on the level of non- adherence) occur as a result of medication non-adherence (Jackevicius, Li, & Tu, 2008)

- Medication non-adherence can also lead to increased surgical mortality rates due to need for re-do sternotomy (9.7% for re-do sternotomy vs. 3.4% mortality risk for initial cardiac surgery) (Launcelott, Ouzounian, Buth,& Legare, 2012).

- The Health Belief Model was developed to explain health behaviors regarding medication usage and can help healthcare providers increase medication adherence (Hayden, 2014).

PURPOSE

To determine the impact of monthly contact with a healthcare provider on adherence to a newly prescribed medication regimen.

RESEARCH QUESTION

Does a follow-up questionnaire by a healthcare provider assessing medication adherence and perceptions of illness administered every thirty days via telephone increase adherence to medications at three months post-discharge compared to patients receiving usual discharge care in post-coronary artery bypass graft patients?

Research Method

- IRB expedited approval obtained at both Saint Anthony Medical Center and SwedishAmerican Hospital; a Division of UW Healthcare

- **Design:** Quasi-experimental longitudinal design

- **Setting:** SwedishAmerican Hospital, where surgeons from Cardiac Surgical Associates performed the procedures.

- **Recruitment:** Began in the post-operative period immediately before participant was discharged to home with sequential assignments to either the intervention or control group using an "even/odd" system

- The first person and every odd numbered patient was placed in the intervention group and each even numbered patient was placed in the control group.

- **Sample:** Twenty-one adults between the ages of 42 and 79, mean age was 61.7 years

- **Intervention Group:** Monthly phone calls from a healthcare provider evaluating confidence in taking medications (Self-Efficacy for Appropriate Medication Use [SEAMS] Scale) and beliefs about their health status (Brief Illness Perception Questionnaire [IPQ]).

	Intervention Group	Control Group
Discharge	In Person Interview: • Demographic Information • Brief IPQ • SEAMS	In Person Interview: • Demographic Information • Brief IPQ • SEAMS
21-30 Days Post-Discharge	Phone Call: • SEAMS	No Contact
51-60 Days Post-Discharge	Phone Call: • SEAMS	No Contact
81-90 Days Post-Discharge	Phone Call: • Brief IPQ • SEAMS	Phone Call: • Brief IPQ • SEAMS

Results

Gender

Race
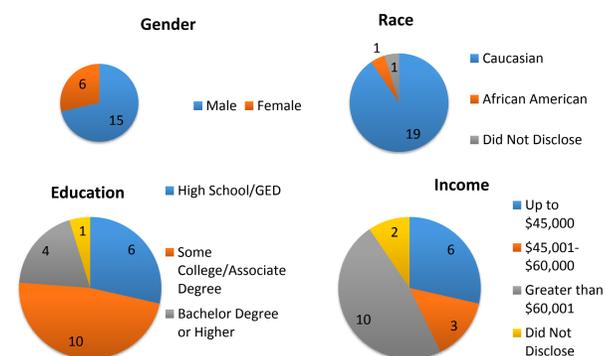
Education

Income

- Overall retention rate for the study was 38.1%, with intervention group having 45.5% retention rate and control group having 30% retention rate.

- "How confident are you that you always take your medicine?"
    - Not significant: Income, education level, and race at discharge and three months post-operative
    - Significant: Gender at discharge only, women more confident (p=0.041), no difference at 3 months
    - Significant: Intervention group versus control group (p=0.026) at discharge, though this normalized and showed no statistically significant difference between the groups at three months post-op (p=0.293).

- Perception of illness threat as measured by Brief IPQ:
    - Not significant: Income, gender, education, race

- Perception of illness and personal control over illness:
    - Not significant: Control versus intervention group at 3 months
    - The control group did rate themselves as having a greater threat to wellness at 3 months post-discharge but it was not statistically significant.

- All patients held very widespread beliefs on what contributed to their development of CAD

Top 2 "Causes of CAD" at Discharge	Top 2 "Causes of CAD" at 3 months Post-Op
Diet (7 respondents)	Genetics (4 respondents)
Smoking (6 respondents)	Smoking (2 respondents)

Conclusions

- Increased education and increased financial status do **NOT** lead to better medication adherence.

- Neither poor perception nor great perception of health status led to increased medication adherence.

- Control group rated themselves as having a greater threat to wellness than the intervention group at 3 months post-discharge, which suggests that increased interaction with a healthcare professional <u>may</u> lead to a better perception of health when faced with a chronic illness.

Implications for Nursing

- **Practice:** Use appointment time to identify patient-specific concerns regarding use of medication. Identify resources to address patients' unique medication adherence concerns.

- **Education:** Develop resources aimed at patient-specific barriers rather than creating an overarching plan for all post-CABG patients. Practitioners would benefit from understanding and applying the Health Belief Model when educating patients about adherence.

- **Research:** Further studies should focus on eliminating barriers, such as using reduced priced medications, free home delivery services, and/or individually wrapped prescription medications (ex: PillPack).

- **Policy:** Provide re-imbursement for longer appointment times to address patient needs regarding newly prescribed medication regimens. Patient satisfaction surveys should include the perceived benefit of medication discussions.

Acknowledgements

References

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