A stylized, light-colored illustration of a plant with several leaves and a cluster of small, round buds or flowers, positioned on the left side of the slide against a dark blue background.

# ONSITE INTEGRATIVE CLINICS: ACUPUNCTURE; POSITIVE PATIENT OUTCOMES; FREQUENCY OF PROVIDER VISITS

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San Diego, CA  
University of San Diego  
San Diego, CA



# Cushman Wellness Center

## Integrative Medicine Services



Sharp Memorial Outpatient Pavilion,  
3075 Health Center Drive, San Diego 92123

- Acupuncture
- Guided imagery
- Integrative Healing Touch
- Qigong reflexology
- Reiki hands-on healing

- Somatic experiencing
- Stress management
- Therapeutic massage
- Yoga



# Hahn School of Nursing and Health Science, University of San Diego



Doctor of Philosophy (PhD)

Doctor of Nursing Practice (DNP)

Masters Entry Level Program in Nursing (MEPN)

Masters of Science in Nursing (MSN):

Executive Nurse Leader

Informatics

Clinical Nurse Leader

Psychiatric Nurse Practitioner

Family Nurse Practitioner

Pediatric Nurse Practitioner

**The Betty and Bob Beyster Institute for  
Nursing Research, Advanced Practice, and  
Simulation 2016**



Onsite Integrative Clinics: Acupuncture;  
Positive Patient Outcomes; Frequency of Provider Visits

## Background and Significance

In the 1990's, integrative clinics became popular in non-academic healthcare systems (Baer and Coulter, 2008).

Integrative care : Treat the whole person (Merriam-Webster Dictionary)

Establish a relationship between the patient and practitioner and make use of all appropriate therapeutic modalities (Consortium of Academic Health Centers for Integrative Medicine)

Relationships, communication and shared positive outcomes (Suchman,2005)



# Acupuncture

- Between 1997 and 2007, acupuncture visits increased from 27.2 visits per 1000 adults to 79.2 visits per 1000 adults in the USA, (approximately 3 million adults) (National Health Interview Survey 2007).
- 2009 American consumers spent 363 billion dollars more in healthcare goods and services than official government statistics acknowledged from a report by Deloitte and Oxford Economics.
- Consumers seek medical models that include Acupuncture, naturopathy, homeopathy, massage and chiropractic (Kennedy, 2011).



# Acupuncture

Limited information about outcomes of care , resource utilization, and associated costs for patients who receive acupuncture in integrative clinics is available

Most published research is from other countries and done in conjunction with chemotherapy induced nausea/vomiting or surgical post op pain



# Purpose

- To address the gap of limited information about outcomes of care, resource utilization and associated costs for patients who receive acupuncture in integrative health settings





# AIMS

To examine changes and relationships:

- I. Changes in patient pain levels pre/post acupuncture
- II. Relationship between receiving acupuncture treatments, number of treatments, duration of acupuncture treatments, age, gender, pain level pre/post acupuncture treatments
- III. Relationships between receiving acupuncture treatments, number of treatments, duration of acupuncture treatments, age, gender, pain level pre/post acupuncture treatments, provider visits pre/ post acupuncture
- IV. Relationship between average visit costs for acupuncture and biomedicine within a healthcare system



# Conceptual Model

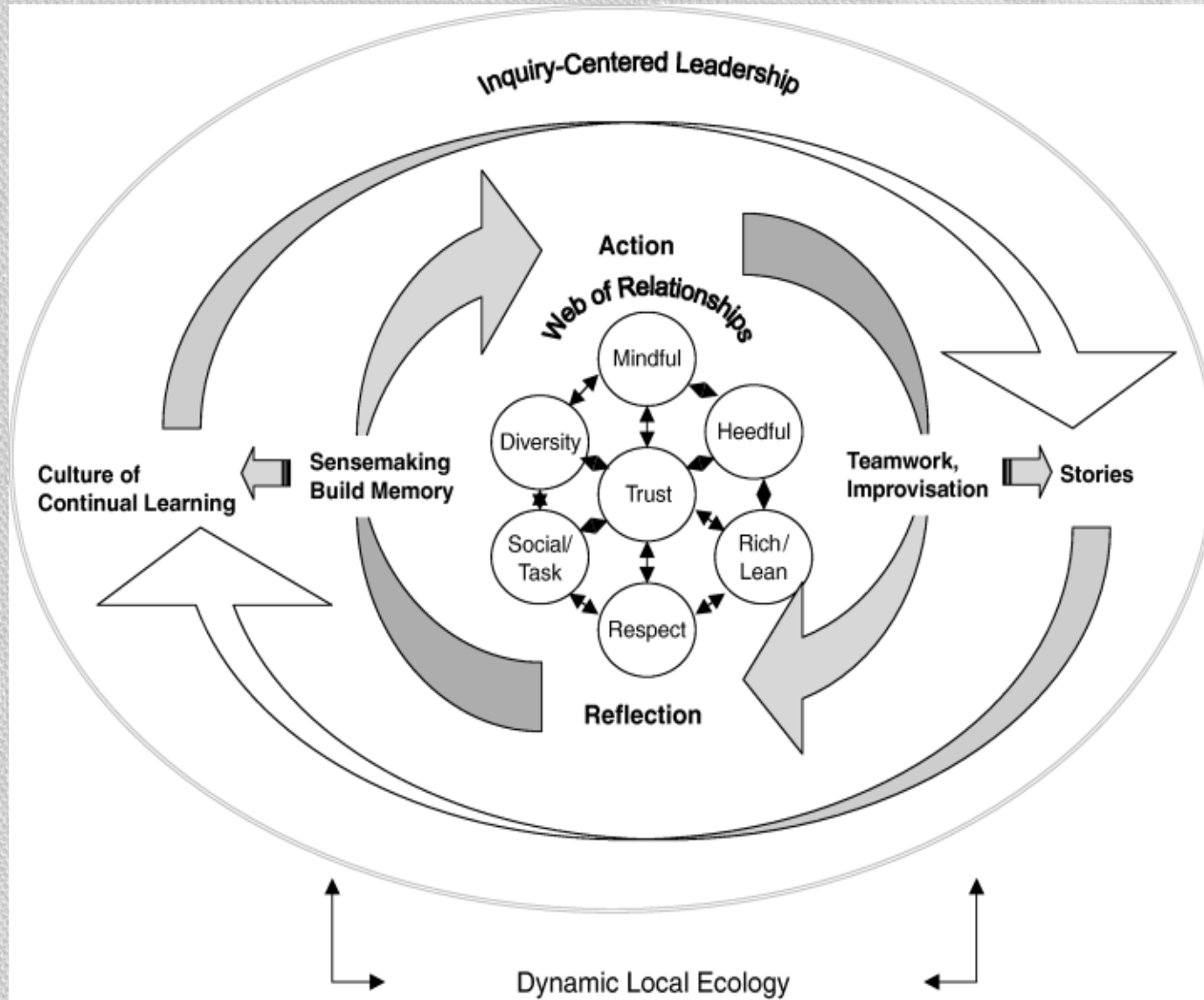
## **Relationship-Centered Care Model (RCC).**

Pew-Fetzer Taskforce, 1994

- Concept of provider collaboration
- Improves the care of patients in a collegial manner
- Encourages mutual respect for the expertise of each provider while working together for the greater good of the patient.



# Relationship-Centered Care



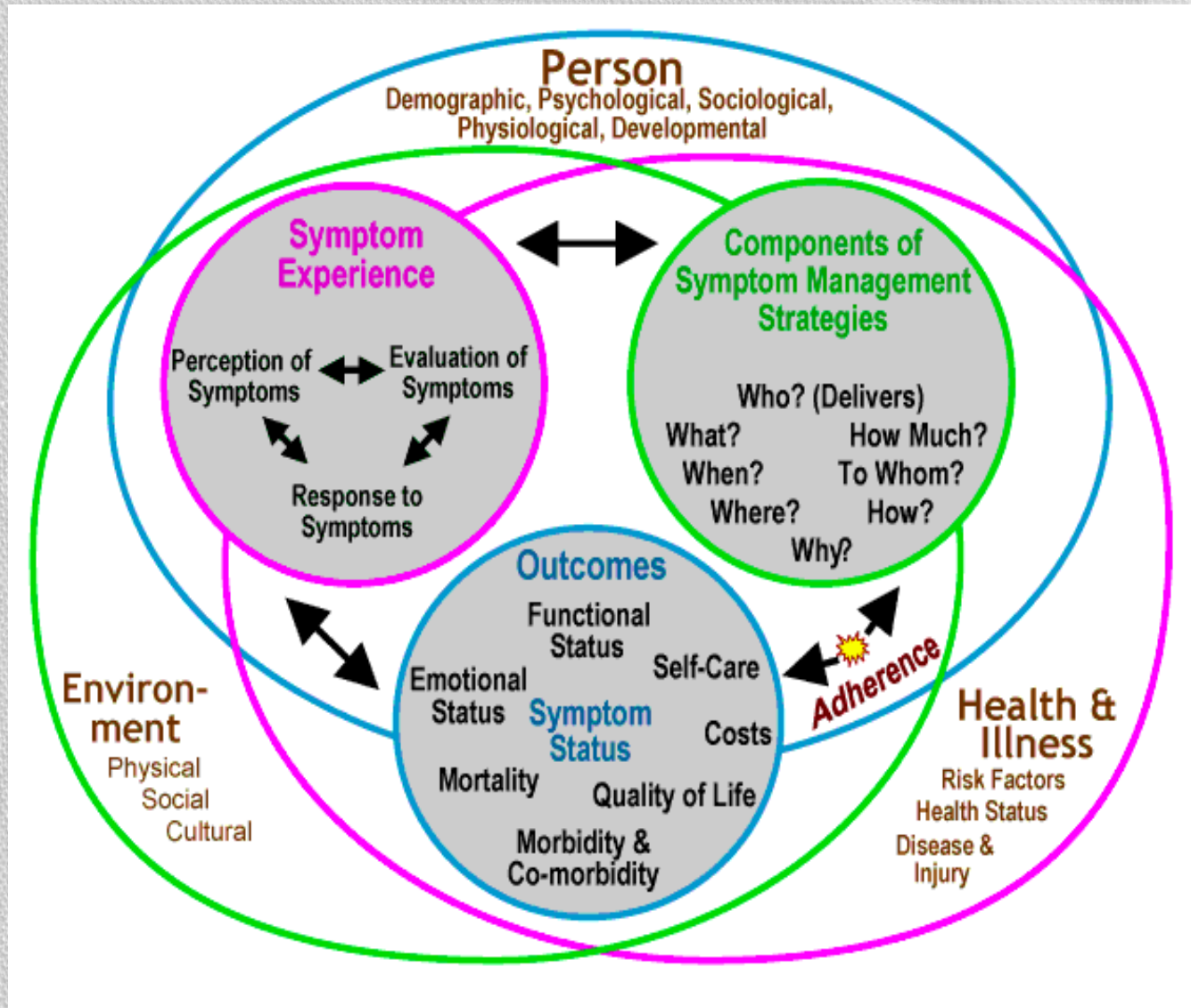


# Science of Symptom Management

- a “dynamic process, modified by individual outcomes and the influences of the nursing domains of person, health/illness or environment” (Dodd, 2001).
- incorporates listening to the patient’s self-report, working towards preventing further symptoms or distress.



# Symptom Management





# Methods

- Correlational repeated measure design using retrospective data abstracted from medical records of a purposive sample of adults, who received acupuncture treatments for pain at a health system integrative clinic.
- Descriptive and inferential statistics were used to describe the sample and examine the relationships between the variables.

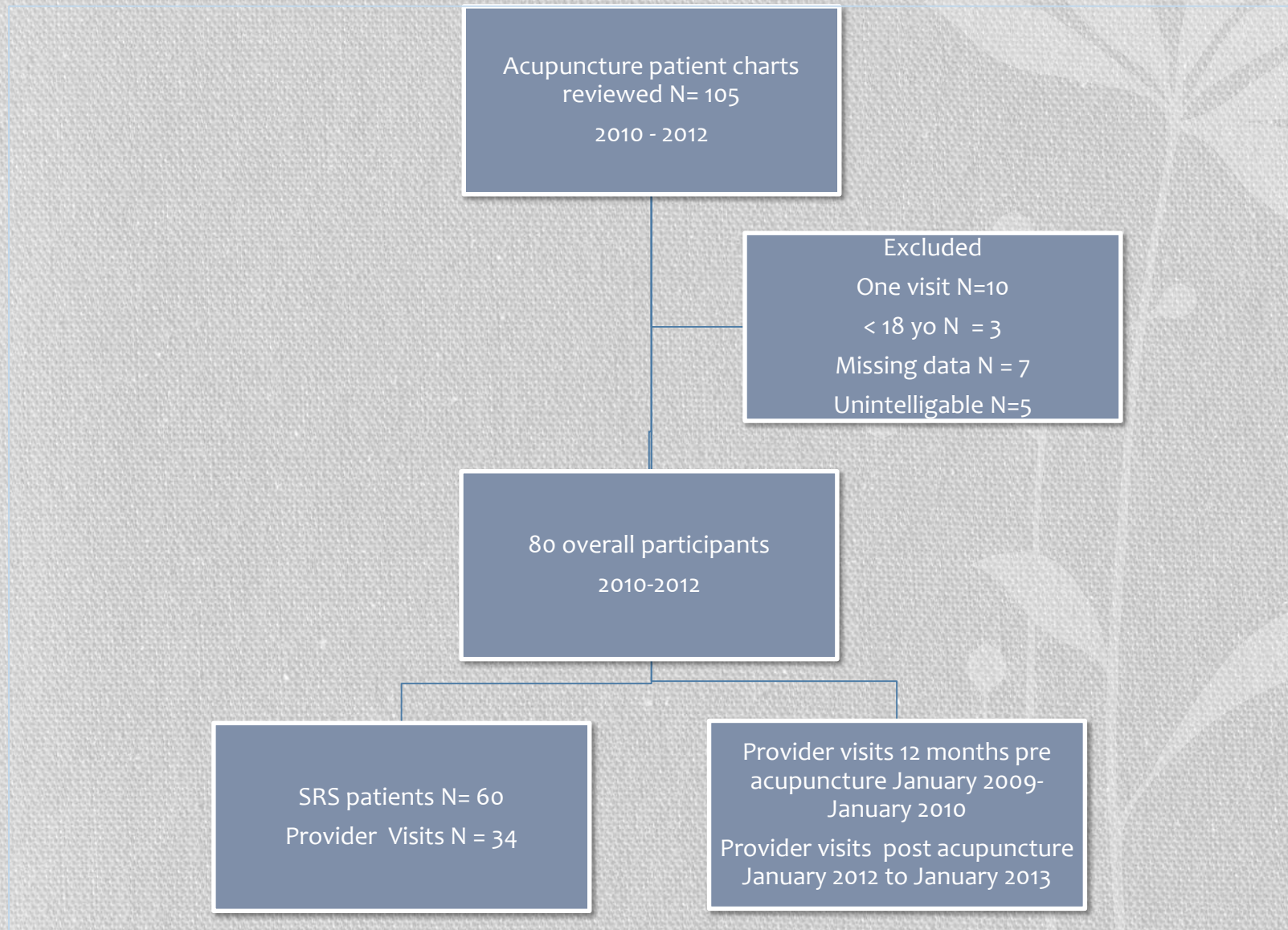


# Sample

- Sample size: 80 participants, based on setting an a priori significance level of .05, a power of .80, and an effect size of .30
- 42 were needed for bivariate analysis with a significance level of .05, power of .80 and an effect size of .30, (Polit, 2010)
- Participant criteria: More than 1 acupuncture treatment
  - Be over 18
  - No missing information
  - Legible documentation
- 2010 to 2012 date range for acupuncture patients



# Participants





# Variables

- Demographics: Age, gender

DV:

- Pain level at last acupuncture treatment
- Frequency of provider visits from January 2012 to January 2013 (post- acupuncture)

IV:

- Pain level at first acupuncture
- Duration of acupuncture treatments
- Number of acupuncture treatments
- Frequency of provider visits January 2009 to January 2010 (pre acupuncture)



# Results

Sample 1 N=80

Sample 2 N= 34

Variable	N	%	M(SD) <sub>1</sub>	N	%	M(SD)
AGE			49.9(1.62)			51.68(2.52)
20-29	7	9%		5	14%	
30-39	13	16%		2	6%	
40-49	19	24%		5	17%	
50-59	23	29%		11	31%	
60-69	12	15%		9	26%	
>70	6	7%		2	6%	



# Results

Sample N = 80

Sample N = 34

Variable	N	%	M(SD)	N	%	M(SD)
Gender						
Female	61	76%		24	69%	
Male	19	24%		11	31%	
# Acup TX			6.20(3.84)			6.86(4.61)
Duration TX in Days			59.13(73.26)			68.44(13.98)
Pain Level						
Pre acup			6.89(1.87)			7.12(.326)
Post acup			3.84(2.32)			4.12(.422)
#PV pre acup						3.26(5.23)
#PV post acup						3.80(4.50)



# Aim I

- To examine the changes in patient pain levels pre/post acupuncture treatments.
- Question 1. Does acupuncture provided at an integrative health clinic, improve symptom management of pain levels in a sample of patients receiving services at an integrative health clinic?



# Results

N = 80

A One-Way ANOVA was conducted:

Statistically significant differences in the pain level from :

Pretreatment, mean = 6.89(1.87)

Post treatment, mean = 3.84(2.32)

$F(8, 71) = 3.75, p < 0.05$



# AIM II

- To examine the relationship between receiving acupuncture treatments (number of treatments, length of time), select demographic factors, (age, gender), pain level (pre/post acupuncture treatments).
- Question 2. What are the relationships between receiving acupuncture treatments, the number of treatments, the duration of time of the treatments, demographic factors (age, gender), pain level, pre and post treatment?



# Results

N = 80

- Pearson correlations and inferential statistics were applied to examine the relationships between the independent variables and the dependent variable of post acupuncture pain level.
- Correlational analysis indicated a statistically significant positive relationship between pre/post acupuncture pain levels
- **$r = .441, p < .05$**



# Results

- N = 80

Multiple regression was conducted to determine the accuracy of the overall model:

Age

Gender

Number of treatments

Duration of treatments

Pain level pre acupuncture treatment

Predicting pain level post acupuncture treatment



# Results

- Tolerance statistics ranged from .726 to .983
- Regression results indicate the overall model (# treatments, treatment duration, age, gender, pre acupuncture pain level) accounts for 22% of the variance in post pain level
- Pre acupuncture pain level significantly contributed to the model, **Beta = 4.161,  $p < .05$**



# AIM III

- To examine the relationships between receiving acupuncture treatments (number of treatments, length of time), select demographic factors, (age, gender), pain level (pre/post acupuncture treatments) and provider visits (pre/post acupuncture treatments).
- Pearson correlations were used to examine bivariate relationships between age, gender, number of acupuncture treatments (#TX), pre/post pain level, duration of acupuncture treatments and pre/post acupuncture provider visits (pre PV/post PV).



# Results

N = 34

- Statistically significant positive relationships were found between:

**# of treatments and duration of treatments  $r = .499$**

**pre and post pain levels  $r = .379$**

**$p < .05$**

- An inverse relationship between:

**number of provider visits post treatment and age,  $r = -.351$ ,**

**$p < .05$**

- Number of provider visits pre/post acupuncture approaches significance:  **$r = -.32, p = .06$**



# AIM IV

- To examine the relationship between average visit costs for acupuncture and bio medical healthcare costs within a healthcare system.

## Question:

- How does the cost of an average acupuncture treatment compare to an average office visit at the medical provider clinic?



# Results

- Integrative Clinic: Direct cost of an average acupuncture treatment, \$138.00.
- Provider clinic: average daily cost, \$763.84, average 24 patient visits per day = \$31.82 direct costs per visit. (Medical Economics, 2003)
- The average acupuncture treatment is one hour
- Average provider visit is fifteen minutes
- \$138 divided by 4 = \$34.50 per fifteen minutes
- Cost is similar.



# Discussion

This study has shown:

- Majority of acupuncture patients are female
- Males start treatment approximately 10 years (30's) after females (20's)
- There is gap in treatment from 65 to 70 mostly in males
- Acupuncture treatments have a mean of 6 visits, with positive outcomes for men and women
- Women took on average 27 days more than men to have their 6 treatments
- No prevention or maintenance plan was noted (insurance does not pay for maintenance)



# Discussion

- Acupuncture treatments can decrease chronic pain
- Duration of acupuncture treatments and the number of treatments correlated significantly, but there was no apparent relationship to the patient's outcome.
- Availability within a known healthcare system can enhance patient outcomes, as described in the literature: familiarity, convenience.
- Cost to the healthcare system is similar.



# Future Research

A new medical model (value based purchasing) is evolving

Opportunities for blended medical model research

Prevention: Studies with pre HTN patients, pre diabetic patients

Research collaboration within healthcare systems, communication opportunities through EMR and email/text.

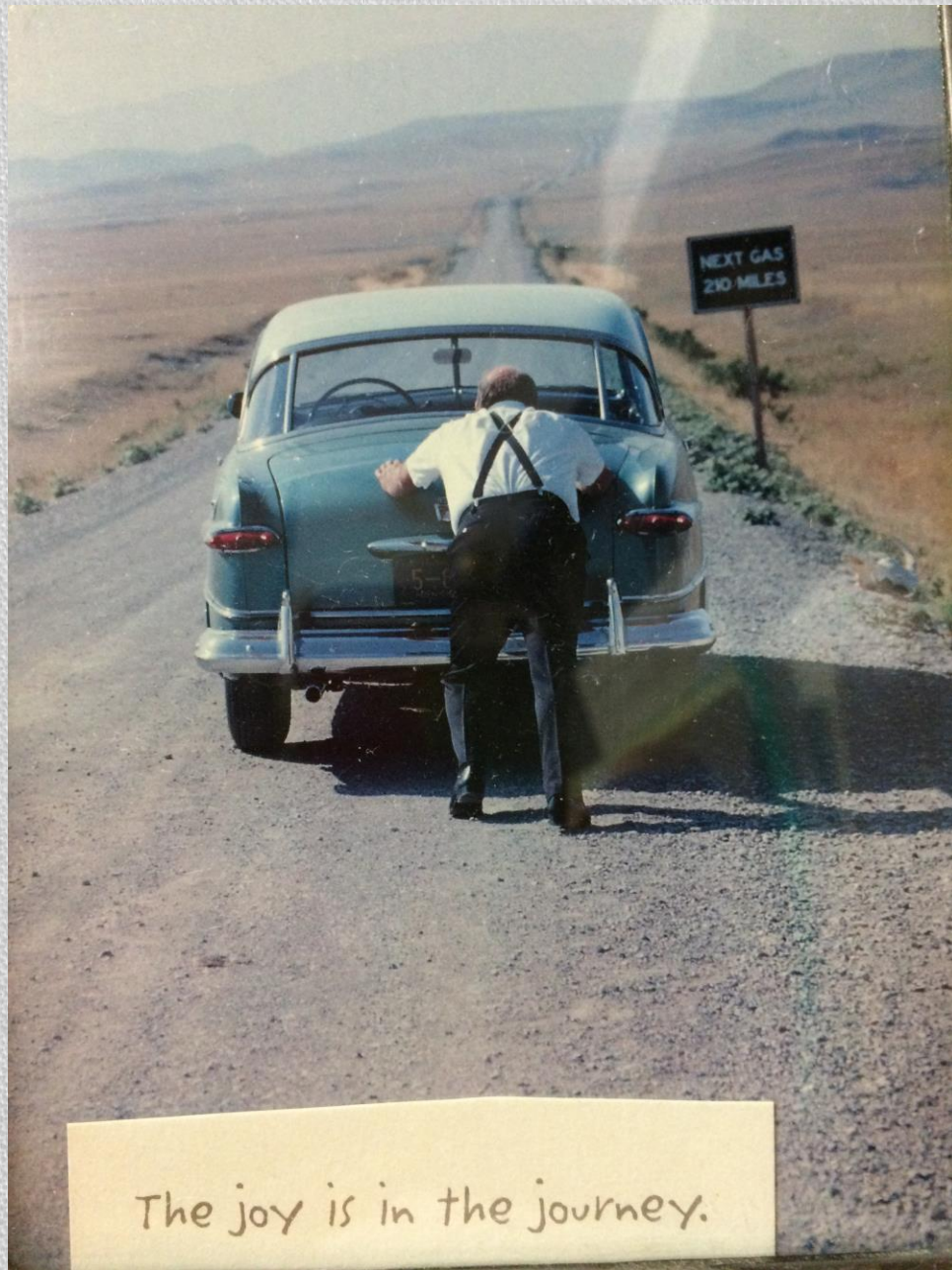


# Nursing Implications

- Nurses are patient advocates:
- Informed contemporary nurses are positive influences
- Help patient's prioritize choices
- Refer and follow patient's health plans







The joy is in the journey.



Questions?

