

## SCHOLARSHIP ABSTRACT

**Significance:** What is the clinical issue or need you are addressing, and why is it important?

**Purpose:** What were you trying to find out or accomplish?

**Method:** How did you proceed? What did you do?

**Findings:** What did you find out or accomplish? **Findings do not need to be complete.**

**Discussion:** What do your findings or accomplishments mean? What impact could they have on nursing/health? What could or should be done in the future (implications for research/practice/policy)?

## RESEARCH ABSTRACT

**Significance:** What is the issue or gap in evidence, and why is it important?

**Purpose:** This is a concise statement of the specific aim or goal of the study. Study goals frequently describe, explain, or predict.

**Method:** This is a brief description of how the study was done. Mention the sampling method, subject number, whether there was group assignment, and what the dependent and independent variables were.

**Findings:** Briefly describe what the primary findings of the study were. **Findings do not need to be complete**

**Discussion:** Describe how your findings fit into the ‘larger’ picture. What does your study add to our knowledge of this area? How can your findings be applied? What needs to be done in the future?

## INNOVATIVE METHODOLOGY FOR NURSING RESEARCH

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**Significance:** Nursing research often addresses complex challenges where a deeper understanding of issues is needed, often with small samples. There is a need for innovative, reliable methods for single subject research methodology.

**Purpose:** The purpose of this poster is to present the mixed methodology employing single subject designs within an experimental arm of a pilot or small sample between groups study.

**Methods:** *DESIGN-* Mixed using between group design (i.e. control/experimental groups) and a single subject design within the experimental arm (i.e. withdrawal, multiple baseline, etc.) for pilot, small sample experimental studies are beneficial when the research question involves time or repeated measurements of a target variable, a heterogeneous population, and outlier or influential cases that may yield useful information. The control group may be either a purely random group or a matched control group which is more necessary with group sizes less than 10 or very heterogeneous populations with influential characteristics. *SPECIAL CONSIDERATIONS-* As a researcher employing single subject methodology, it is important to address two theoretical aspects of this methodology: treatment integrity and social validity. Treatment integrity is the concept that both the subjects and society as a whole have a need or desire for the information. Investigators must demonstrate throughout the entire study that the intervention being employed is responsible for changes in the dependent variables. Social validity is the one being sought. *RATIONALE-* Unlike a descriptive case study, single subject methodology (SSM) is a quantitative, experimental methodology originally employed within the behavioral analysis field of Psychology and has only recently been used within the medical clinical research setting. The advantage of SSM in nursing research begins with SSM having a greater tolerance for populations that are heterogeneous (i.e. medical conditions, etiology of illnesses or behaviors, education, etc.). Additionally, the degree and level of data the researcher is able to obtain via SSM is greater due to fewer participants and repeated measurements. When doing a pilot study it is this level and detail of data that will drive further studies. Finally, within SSM the outliers or influential cases that become lost or eliminated in group designs often have the greatest information to offer the pilot researcher. All data are retained and analyzed, no data are regressed to the mean, all variance is observed, and all effects are documented. By adding the control group, which makes this design a mixed methods design, an added level of analysis that is not typically performed within the SSM designs is observed--between-group statistical analysis—which strengthens the findings of the study.

**Findings:** The initial tier of data analysis will be visual analysis which provides three essential components: trend analysis, level or change analysis, and variability analysis. The second tier of data analysis will examine each individual subjects' data (within subject). The third tier of data analysis will occur between groups. These procedures are illustrated in this presentation.

**Discussion:** The proposed innovative application of established experimental designs has the potential to yield a greater depth of knowledge than a traditional random control group design. It is especially useful for pilot studies and those evaluating new interventions or treatment components in applied natural settings.

## SLEEP POVERTY IN CAREGIVERS OF INDIVIDUALS WITH ALZHEIMER'S DISEASE

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**Significance:** An estimated 15.7 million adult caregivers take care of someone with Alzheimer or related dementias. About two-thirds of those caregivers experience some form of sleep disturbance, but the causes and experiences of these disturbances are not well understood.

**Purpose:** The purpose of this study was to investigate how the sleep perception of a sample of caregivers who take care of individuals with Alzheimer's disease (AD) differs from a sample of non-caregivers within the same age range.

**Method:** Convenience samples of 103 non-caregivers and 55 caregivers of individuals with Alzheimer's disease filled out sleep logs upon awakening for seven consecutive days, and rated their sleepiness (with the Epworth Sleepiness Scale) and fatigue (using the Fatigue Severity Scale) for that week. Out of the 55 caregiver participants, only those aged 60 years or older were included in the comparison analyses to control for age (N=30).

**Findings:** There is statistical evidence ( $t(df=127) = 2.11, p < 0.05$ ) that non-caregivers sleep nearly a half-hour ( $M = 26.69$  minutes) longer per night than caregivers (Table 2). The normative group had significantly higher *sleep efficiency* than the caregiver group,  $t(df=127) = 3.80, p < 0.05$ , indicating a greater percentage of time in bed spent asleep. This is partially due to the fact that non-caregivers have significantly less time awake after the sleep onset ( $t(df=127) = -3.99, p < 0.05$ ) than their caregiver counterparts.

**Discussion:** *Sleep poverty*, as in deficiency of caregiver sleep, suggests poor or interrupted patterns of sleep, not only throughout the year but for the duration of years from diagnosis until the caregiver can leave the role. On the whole, findings indicated that caregivers sleep less, their sleep is interrupted by more frequent awakenings, and there is greater total time awake at night than for non-caregivers. Antithetical to the half hour of lost sleep by the caregivers is approximately a half hour of logged wake after sleep onset, which may be explained by the greater *number of wake bouts* during the night. Caregiver hyper-arousal from care recipient nocturnal disturbances may be the cause of the higher levels of sleep fragmentation and may precipitate a high number of micro-arousals, which have been connected to elevated levels of low density lipoproteins, cortisol and higher blood pressure. More attention must be given to this population, for their latent impact in society will become apparent in the near future. As life expectancy increases, so does the percentage of those diagnosed with AD, as well as the need for those to care for them. Increased awareness of caregivers' silent plight may pave the way for political changes that can provide more support for caregivers of individuals with dementia. By mitigating stressors such as insufficient sleep, caregivers' coping abilities may improve, helping them continue to provide care. Further, using a simple sleep diary to assess caregiver sleep may be a beneficial application of nursing care for this population of care providers.