INCREASING EMPATHY AND TREATMENT INTENTIONS FOR ADULTS IN CHRONIC PAIN

By

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To my loving family, dedicated mentors, amazing friends, supportive healers, my soul mate, Brian, and all those whom experience chronic pain
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Who is likely to elicit empathy, and how might empathy be increased in healthcare contexts where people are suffering from chronic pain? Research showed that factors such as age and sex of a patient may affect their treatment. This may be due to differential feelings of empathy toward male and female patients of different ages. Regardless of a patient’s demographics, theory suggests that increased empathy may occur when an individual is able to recall being in a similar circumstance to what another is now facing. Increasing empathic responses is interpersonally valuable but has also been linked to improved healthcare outcomes: a recent model of caregiving (Schulz et al., 2007) proposes that feeling empathy predicts engaging in treatment behaviors.

The current study investigated (a) whether age and sex biases exist in empathy and intention to provide treatment, (b) whether sharing a pain-related autobiographical memory uniquely increases empathy (perspective-taking, empathic concern) toward, and intention to provide pain treatment to, a patient perceived as in chronic pain, and (c) whether increases in empathy predict intention to provide treatment. Undergraduate nursing students’ empathy and
treatment intentions were assessed after being presented with a hypothetical patient’s pain
narrative (pretest) and again after assignment to either an autobiographical or a semantic memory
condition (posttest). Age and sex of the narrator was varied across conditions.

The study showed that nursing students do not show age and sex biases in empathic
responding or reported intention to provide treatment. It appears that participants focused on the
rich narrative content of the patient’s pain memory rather than his or her demographics in
formulating their empathic feelings and intentions. In terms of pretest-posttest changes, recalling
both autobiographical and semantic information led to increases in perspective-taking and
increases in intention to provide treatment. Empathic concern, however, increased in the
autobiographical memory recall condition but only when participants were responding to the
young female narrator in pain. In line with theory, being better able to take the perspective of a
patient predicts intention to provide treatment for that person. Results are discussed in terms of
empathy and treatment among caregivers in real-world settings.
CHAPTER 1
INTRODUCTION

Background

Empathy is a human virtue. It occurs in everyday life (Eisenberg & Miller, 1987) and can lead to pro-social behaviors such as helping others (Batson, 1991). From an early age (Eisenberg, Spinrad, & Sadovsky, 2006; Hoffman, 2000) men and women frequently ‘feel for’ another person who is experiencing life’s inevitable difficulties (Hastings, Zahn-Waxler, & McShane, 2006). According to theory (Bluck, 2003; Ickes, 2003), feeling empathy may be a more seamless process when you, yourself, can remember having been in similar circumstances.

Healthcare settings are one place in which increasing levels of empathy may be particularly important. Increased empathy in patient care settings has been found to decrease the human and financial costs associated with patient care (e.g., Stewart, 1995; Moore, Adler, & Robertson, 2000) and is theoretically associated with increased treatment behaviors (Schulz et al., 2007). Particular groups of patients may particularly benefit from increased empathy and treatment: for individuals whom frequently visit healthcare contexts due to a chronic condition, such as chronic pain, caregivers become part of their life over time.

Men and women of a variety of ages experience chronic pain. What if personal biases among caregivers affect their feelings of empathy toward certain groups of patients and thereby affect the likelihood of providing treatment? For example, older adults may face the bias that chronic pain is a normal part of aging and that pain should be expected simply due to their age. In many cases, however, older adults suffer from treatable illnesses that are independent of their age (Gagliese & Melzack, 1997). To provide some understanding of how empathy may function in the healthcare system the current study investigated whether nursing students’ age and sex
biases affect feelings of empathy and treatment intentions for hypothetical individuals experiencing chronic pain.

Beyond examining biases, the current research examined a new way in which empathy might be promoted - through autobiographical memory recall. Autobiographical memory may be one of the human faculties necessary to experience empathy. On a day-to-day basis, people navigate their world using autobiographical memory (Neisser, 1986; Thompson, Skowronski, Larsen, & Betz, 1996). They draw on past life events when evaluating themselves, interacting with others, and making decisions (Bluck & Alea, 2002). Theorists suggest autobiographical memory serves self, social, and directive functions (Bluck, 2003; Hyman & Faries, 1992). Eliciting empathy is theorized to be one of the social functions of autobiographical memory (Alea & Bluck, 2003). Recalling personal experiences is proposed to foster social relationships in a variety of ways (Alea & Bluck, 2003; Conway, 1996; Ickes, 2003). For example, previous research showed that autobiographical memory recall can increase intimacy between couples (Alea & Bluck, 2007) and empathy in women (Pohl, Bender, & Lachmann, 2005). Given that one theorized function of autobiographical memory is to promote pro-social interactions such as feeling empathy, the current study addresses whether autobiographical memory recall can be actively employed as a tool to promote empathy and treatment intentions in healthcare contexts.

A recent model of caregivers’ responses to patient suffering suggests that feelings of empathy are related to treatment and helping behaviors (Schulz et al., 2007). Increased levels of empathy are theorized to motivate individuals towards positive treatment behaviors. Based on that model, the current study investigated the relationship of empathy to treatment intentions.

In summary, the specific aims of the study are: (a) to examine whether personal biases affect feelings of empathy and intention to provide treatment toward a hypothetical patient, (b) to
investigate whether feelings of empathy and treatment intentions differ after sharing an autobiographical pain memory as compared to sharing previously learned semantic information about pain, and (c) to examine whether feelings of empathy predict increased intention to provide treatment for a young or older male or female patient experiencing pain.

The following review provides a foundation for the study based on literature from psychology, gerontology, philosophy, and the health professions (e.g., nursing). A brief background is provided concerning how empathy is historically defined and currently conceptualized from a psychological and healthcare perspective, and how it is measured. An overview of the functional approach to autobiographical memory is then presented with emphasis on autobiographical memory’s social functions, specifically empathy. This is followed by a discussion of how autobiographical memory might be used to increase empathy, particularly for individuals experiencing chronic pain, and how age and sex of the individual experiencing pain may affect elicitation of empathy from others.

**History and Definition of Empathy**

The English term, empathy, is derived from the Greek word ‘empatheia’ coming from the root words ‘en’, meaning “in” and ‘pathos’ meaning “feeling” (Liddell & Scott, 1996); it suggests being able to ‘feel into’ another person’s experience. Understanding empathy as a human virtue was essential in works of the Greek philosophers, Aristotle and Plato. Empathy has been seen as a cornerstone of healthcare since the origin of medicine. For example, medical ethics put empathy at the center of healthcare. Ancient physicians used the term ‘philanthropie,’ meaning “caring for a human being,” to emphasize the role of empathy in care. Hippocrates also considered it an essential quality for patient care. His biographers considered him a great doctor first and foremost because he surpassed his predecessors in such virtues. The Hippocratic Oath
continues to influence healthcare today (Carrick, 2001). The current linguistic definition of empathy is also based on the German word, ‘einfühlung.’ As with the Greek origin, this literally means “feeling into” (Hoffman, 1984). What does the process of “feeling into” another person’s experience entail?

The German philosopher, Kant (1788/1949) believed the development of moral principles, such as empathy, was influenced by logical (i.e., cognitive) processes and that emotions played little role. American psychologist, Carl Rogers, added to the cognitive conception of empathy through his definition, “… to perceive the internal frame of reference of another with accuracy, and with the emotional components and meanings which pertain thereto as if one were the person, but, without ever losing the "as if" condition. Thus, it (empathy) means to sense the hurt, or the pleasure of another, as he senses it, and to perceive the causes thereof as he perceives them, but, without ever losing the recognition that it is as if I were hurt, or pleased, and so forth” (Rogers, 1959, p. 210). This definition highlights empathy as a type of cognitive perspective-taking.

Original conceptions of empathy as an affective process, however, suggest that empathy also involves sharing the emotional experience of another (Hume, 1777/1966). Keefe (1976) argued that empathy may have cognitive components but must also involve the capacity for emotional response; one must respond with compassion to the distress of another person. Martin Hoffman adds to the emotional component of empathy describing it as “an affective response more appropriate to another's situation than one's own” (Hoffman, 2000, p. 4). This view of empathy stresses the ability to feel affective concern for the state of another as opposed to solely taking the other’s cognitive perspective.
Defining Empathy in Psychology

In current psychological perspective, empathy is considered a cognitive-emotional process, thus integrating previous cognitive and affective views. Although researchers investigating empathy have created their own idiosyncratic definitions, many psychologists (e.g. Batson, 1991a, 1991b; Davis, 1996; Decety & Hodges, 2004; Eisenberg, 2000; Hodges & Wegner, 1997; Ickes, 2003) consider the following components fundamental to a definition of empathy (Decety & Jackson, 2004): (a) an affective response to another person, (b) the cognitive ability to take the perspective of the other person, and (c) a regulatory mechanism to monitor the roots of self- and other-feelings. While this definition is sound, it does not explain how a person is able to take another’s perspective or share their affective experience.

Ickes (1997, p. 2) sheds light into the essential mechanisms for experiencing empathy, stating it is a “complex psychological inference in which observation, memory, knowledge, and reasoning are combined to yield insights into the thoughts and feelings of others (italics added).” Note that this definition identifies a link between empathy and memory by identifying memory (along with observation, knowledge, and reasoning) as one of the crucial mechanisms for creating empathy.

Robinson and Swanson’s (1990) view of how our everyday experiences are schematized in autobiographical memory suggest more specifically how memory may operate in the process of experiencing empathy; they argue that people convert their experiences into representations that can be efficiently remembered. Those representations are then recalled to help make predictions about the world, including how others may feel or will behave. Thus, schematically representing and recalling their own past experiences allows individuals to infer and predict others’ feeling states. When another individual is thereby perceived as in distress or pain,
representations of one’s own pain experiences may be brought to mind, and empathy may be triggered. In sum, empathy is best conceptualized as an integrative cognitive-emotional process, and the elicitation of empathy relies, among other things, on using one’s personal memory to understand what others may be experiencing.

**Defining Empathy in Healthcare**

One focus of the current research is to assess nursing students’ levels of empathy and intention to provide treatment for a hypothetical patient. In the modern healthcare system, empathy has often been downplayed as ‘good bedside manner’ and seen as an innate characteristic of the healthcare professional, not a skill that she or he might learn. In recent years, however, empathy in the healthcare setting has been defined as an appreciation of the patient’s emotions, and expression of that awareness to the patient (Stepien & Baernstein, 2006). A current model of care provision postulates that empathy is a teachable skill that has tangible benefits (Schulz et al., 2007). Returning to ancient philosophical roots of the practice of medicine, empathy has now been named as an essential learning objective by many professional ethics organizations, including the American Association of Medical Colleges (AAMC, 2009; Stepien & Baernstein, 2006). Empathy in the healthcare setting includes the following dimensions: (a) affective, the ability to imagine patients’ emotions and perspectives, (b) cognitive, the intellectual ability to identify and understand patients’ emotions and perspectives, (c) moral, the care providers' internal motivation to empathize, and (d) behavioral, the ability to convey understanding of those emotions and perspectives back to the patient (Morse, et al., 1992; Mercer & Reynolds, 2002; Halpern, 2001). Like the psychological definition of empathy, both affective and cognitive aspects are included. However, a behavioral aspect, expressing empathy, is also of concern given that empathy is occurring as part of a clinical interaction. The
resurgence of interest in empathy as an integral aspect of healthcare is promising. Note, however, that although increasing empathy in healthcare is clearly an important goal, healthcare providers must take care not to be too sensitive to the emotions of others. Being overly empathic may put one at risk of ‘burn out’ (Goldstein, & Michaels, 1986).

**Measurement of Empathy**

The diversity of methods and measures devised to assess empathy has created difficulties in comparing findings across studies (Decety & Jackson, 2004). Measurement of empathy includes both non-self-report and self-report measurements. These are briefly reviewed as a background for understanding the rationale for choice of measurement in the current study.

**Non-self-report methods**

Using fMRI, Decety & Moriguchi (2007) showed that observing another person’s pain state activates parts of the neuronal network involved in processing one’s own pain (Jackson, Meltzoff, & Decety, 2005; Lamm, Batson, & Decety, 2007; Morrison, Lloyd, di Pellegrino, & Roberts, 2004; Singer, et al., 2004). The study of the neural underpinnings of empathy has received increased interest following Preston and De Waal's (2002) discovery of mirror neurons in monkeys which fire both when the creature watches another perform an action as well as when they themselves perform it. They argued that attentive perception of the object's state automatically activates neural representations and that this activation automatically primes or generates the associated autonomic and somatic responses, unless inhibited. That is, experiencing empathy involves an automatic brain response triggered by attentively observing others.

In addition to fMRI, researchers have made use of autonomic nervous system responses such as heart rate, respiration rate, and skin conductance, tracking changes in these measures in response to various empathy tasks (e.g., Blair, 1999; Decety & Chaminade, 2003). Other methods of measuring empathy, such as those involving behavioral observations, require even
more involvement from the investigator. For example, in one study, videotapes of the interaction between two participants seated in a waiting room were made. Later each person was asked separately to watch the videotaped interaction and to write down every thought and feeling he or she remembered having, and also to record the overall affective tone of the interaction. Participants then wrote down what they believed the other participant’s thoughts and feelings were for each point in the tape. All data were later coded to determine empathic accuracy (Ickes, Stinson, Bissonnette, & Garcia, 1990). This use of a non-self-report measure via behavioral coding has the benefit of tapping into dyadic behaviors associated with empathy but still does not help to explain how empathic responding occurs.

In the healthcare setting, measures of empathy often involve trained observers assessing empathy as it occurs. Tools such as the Accurate Empathy Scale (AES: Truax & Carkhuff, 1967) and items from the History-taking Rating Scale (HRS: Evans, Stanley, & Burrows, 1989, 1993) have been employed in the educational training of empathic responses. Though these measures are clinically sound, they rely on the opinions of an independent assessor. Agreement among assessors needs to be reliably measured, which is often difficult in a real-world setting.

**Self-report methods**

Though the above approaches suggest some interesting alternatives for measuring empathy, most studies currently use validated self-report inventories (Stepien & Baernstein, 2006). Researchers whom design instruments to assess empathy must account for the multidimensional nature of the construct while considering practical methodological issues. Several measures have been used in the literature including Hogan’s Empathy Scale (HES: Hogan, 1969; focus on cognitive perspective-taking), the Balanced Emotional Empathy Scale (BEES: Mehrabian & Epstein, 1972; focus on affective empathy) and the Empathy Construct Rating Scale (ECRS: Stepien & Baernstein, 2006; perceptions of one’s own and other’s empathy
levels). None of these measures, however, captures the multidimensional cognitive-affective nature of empathy.

The largest limitation in self-report measurement of empathy may be the low internal validity of some empathy measures, particularly considering the social desirability bias involved (Hatcher et al., 1994; Marshall, 1999). The Interpersonal Reactivity Index (IRI: Davis, 1983), however, assesses both cognitive and affective components of empathy, is the most commonly used measure in both psychological and healthcare research, and is the most accepted and validated scale in the literature (Stepien & Baernstein, 2006). As such, it was chosen as the most reasonable multi-dimensional measure of empathy for employment in the current research. The IRI contains four subscales, the first two of which were used. These include: (a) Perspective-taking, (b) Empathic Concern, (c) Empathy Fantasy, and (d) Personal Distress. Studies using this scale show that is has high test-retest reliability ($r = .62$ to $.71$), good internal validity, and reasonable internal consistency (Cronbach’s $\alpha = .56$ to 0.75; Lamsfuss, Silbereisen, & Böhnke, 1990). Due to the self-report nature of the questionnaire, a measure of social desirability was also included in the current study (Paulhus, 1991).

In review, some consensus has been reached concerning the definition of empathy and several measurement approaches have been fruitfully employed in the literature. How people come to experience empathy, however, has been less commonly investigated. Particularly, the role of memory as foundational for empathy has not been assessed in previous research.

**Empathy as a Social Function of Autobiographical Memory**

Autobiographical memory researchers have theorized that memory recall may serve to increase feelings of empathy in people whom are responding to others experiencing pain or distress. A brief review of the functional approach to autobiographical memory elaborates how this might operate. The functional approach (Bluck & Alea, 2002; Neisser, 1978; Pillemer 1992)
focuses on what individuals use autobiographical memory for in everyday life, that is, the functions it serves (Baddeley, 1987; Bruce, 1989; Neisser, 1978). Based on previous theory, Bluck and Alea (2002) categorized the functions of autobiographical memory into three broad areas including a self function, a directive function, and a social function (see also Cohen, 1998; Hyman & Faries, 1992; Pillemer, 1998; Webster, 1995). Previous research has examined the self function (Bluck & Alea, 2008; Bluck & Levine, 1998; Brewer, 1986) and the directive function (Bluck & Glück, 2004; Pillemer, 1998). The current study, with empathy as its central construct, focuses on the social function. A recent conceptual model of the social functions of autobiographical memory (Alea & Bluck, 2003), while not exhaustive, delineates some of the conditions under which autobiographical memory is likely to serve social functions.

According to Alea and Bluck’s model (2003), personally meaningful autobiographical memories (Bluck & Habermas, 2001; Conway, 1996) can be seen as serving three important social functions: (a) the development and maintenance of intimacy in relationships, (b) teaching and informing others, and (c) eliciting and expressing empathy. The empathy function refers specifically to the idea that the process of sharing autobiographical memories may elicit an empathic response if the speaker’s memory engages the listener and the listener responds with an autobiographical memory that relates to the experience of the speaker (Pillemer, 1992). The model proposes that several factors influence how well social functions of autobiographical memory are served in a given memory recall situation. For example, the degree to which social functions of autobiographical memory (e.g., empathy) are served can depend on factors such as characteristics of both the speaker and the listener (e.g., age, sex).

Although the intimacy function of autobiographical memory has received some attention in the literature (Alea & Bluck, 2007), no research has explored the empathy function, despite
the popular belief that sharing common experiences leads to empathy. Pohl, Bender, and Lachmann (2005) offer the only published empirical study on the connection between empathy and autobiographical memory. Findings suggest that the continual refinement of social skills, such as empathy and assertiveness, depends on the use of autobiographical memory to better understand one-self and others and that there are sex differences in empathic responding. The current study attempts to fill a void in the literature by empirically assessing whether autobiographical memory recall results in greater empathy towards a person who is perceived to be in distress, specifically, chronic pain. Based on Alea and Bluck’s (2003) conceptual model, the age and sex of the narrator experiencing pain were varied to assess whether autobiographical memory serves an empathy function differentially when the narrator is perceived to be a young versus an older adult.

**Eliciting Empathy for Individuals in Chronic Pain**

Empathy is needed in a variety of human interactions. So why study chronic pain? Eliciting empathy for individuals in chronic pain is important because chronic pain affects between 5 – 7% of the general population (50 – 75 million people; Frischenschlager & Pucher, 2002). Chronic pain can have many origins, such as an initial mishap (e.g., sprained back, serious infection), or there may be an ongoing cause of pain (e.g., arthritis, cancer, ear infection). The most common chronic pain complaints include headache, low back pain, cancer pain, arthritis pain, neurogenic pain (i.e., pain resulting from damage to the peripheral nerves or to the central nervous system itself), or psychogenic pain (i.e., pain not due to past disease or injury or any visible sign of damage inside or outside the nervous system; NINDS, 2009). Individuals experiencing chronic pain cost the American public over $100 billion per year (NIH, 1998). This includes those with primary illness such as cancer, AIDS, and other serious illnesses in which pain is often under-treated (The Pain Survey, 1999). Although many people assume pain is tied
to physiological damage, chronic pain can also be the result of multiple factors that are physical, psychological, social, and cultural (Frischenschlager & Pucher, 2002). The uniqueness of the causes of pain across individuals partially explains why an individual’s experience of pain is difficult to objectively measure.

The current methods of assessing pain in the medical and healthcare professions rely on verbal descriptions from the patient, the patient’s nonverbal expressions, and subjective assessments from caregivers (Frischenschlager & Pucher, 2002; Horgas, Elliot, Marsiske, 2009; Horgas, Nichols, Schapson, & Vietes, 2007). Empathic caregivers tend to be more accurate at assessing pain. For example, when medical professionals question caregivers about the pain they believe the patient is in, empathic caregivers are more likely to characterize the nature of the patient’s pain accurately (Carper, 1978; Strayer & Roberts, 1989).

Research showed that empathy opens the door for effective communication between patient and caregiver by coordinating their thoughts and feelings and thereby promoting increased exchange of information (Goldstein & Michaels, 1986; Mead, 1934). Increased empathic responding is a crucial aspect of patient-provider relationships. According to professional healthcare organizations (American Nursing Association, American Medical Association), caregivers must be compassionate and empathetic in caring for patients as empathy affects both diagnosis and patient care. For example, patients who feel listened to are more likely to fully explain their symptoms and to provide pertinent details and emotional engagement helps providers attend to aspects of patients’ health that might otherwise go unnoticed (Halpern, 2003). When patients perceive low levels of empathy, medical visits tend to be longer and more frustrating for both the physician and patient (Levinson, Gorawara-Bhat, & Lamb, 2000) and can
also lead to increased ‘doctor shopping’ to find a care provider that patients feel will take their reports of pain seriously (Hardee, 2003).

While improving patient-provider communication, empathy can also provide a powerful internal motivator for the caregiver to deliver the best care possible. According to Schulz and colleagues’ (2007) model of caregiving, the recognition of patient suffering, which depends in large part on feeling empathy, is an essential element in the development of compassion for a patient. Implicit in the definition of compassion is a motivational component, that is, when one feels concern that someone of value is suffering they will want to alleviate the suffering. As such, in this model of healthcare provision (see Figure 1-1), empathy leads to compassion, which motivates actions to relieve suffering. Promoting empathic responding is a simple cost-effective method of facilitating early diagnosis and proper treatment (Bellet & Maloney, 1991) and can reduce both the financial and human suffering costs related to chronic pain.

This is important as research showed that caregiver’s empathy significantly influences patient satisfaction (Bertakis, Roter, & Putnam, 1991; Kim, Kaplowitz, & Johnston, 2004; Suchman, Roter, Green, & Lipkin, 1993; Zachariae et al., 2003), adherence to medical recommendations (e.g., Stewart, 1984; Vermeire, Hearnshaw, Van Royen & Denekens, 2001; Roter, et al., 1998), and reduces medical-legal risk (Moore, Adler, & Robertson, 2000). Overall effective communication (Stewart, 1995) and a “warm, empathetic” style (Di Blasi, Harkness, Ernst, Georgiou, & Kleijnen, 2001) has been shown to improve clinical outcomes. Therefore, empathic care may be particularly important for patients receiving frequent medical attention (i.e., those with chronic conditions lasting three months or more; U.S. National Center for Health Statistics, 2009). Identifying techniques for increasing empathy, an aim of the current research, thus has applied relevance: such techniques could be employed in the training curriculum for
healthcare professionals and in community outreach programs that aim to enhance communication among patients and care providers.

**The Role of Age and Sex of the Pain-sufferer in Eliciting Empathy**

People may be less likely to empathize with another if they focus on the person not simply as an individual experiencing pain but as an ‘old/young person in pain’ or a ‘woman/man in pain.’ This is especially relevant considering that both acute and chronic pain is more common in older people. Many older adults in chronic pain face the ageist view that experiencing pain is a normative aspect of aging (Gagliese & Melzack, 1997). Existing work showed that medical professionals often ascribe symptoms reported by older people to their age rather than to the condition causing the symptoms, which in many cases is treatable (Greene et al., 1986; Adelman et al., 1990; Lasser et al., 1998). In one study, older adults were viewed as having a greater need to seek medical treatment than young sufferers even when objectively experiencing the same pain (Hirsh, Alquda, Stuts, & Robinson, 2008). This attribution error may cause family members, caregivers, and healthcare professionals to focus on the age of a patient rather than his or her condition. They may show less empathy, and potentially take less action, as a result. Understanding whether empathy is based partially on age has clear implications in healthcare settings where professionals deal frequently with older adults experiencing pain.

Research also suggests that sex of the patient impacts healthcare professionals' perceptions (e.g., Hirsh, Alquda, Stuts & Robinson, 2008). In pain scenarios presented to healthcare providers, women patients were viewed as having higher pain intensity, feeling more unpleasant, and having a greater need to seek medical treatment than men, when the targets in the study were actually suffering the same amount of pain. Thus, biases appear to exist based on both age and sex stereotyping. Effects of age and sex on empathy and treatment intentions were examined in the current study.
Preliminary Studies

Preliminary studies conducted by our team in Dr. Bluck’s laboratory at the University of Florida have investigated whether autobiographical memory recall uniquely functions to increase empathy for young and older adults experiencing chronic pain. Across two studies, the autobiographical memory recall condition involved remembering and then sharing a personal memory in which the participant had experienced similar pain to that described in the provided pain narrative.

In the first study, undergraduate men and women participants’ (N= 80; 40 men, 40 women M = 19.28; SD = 1.59) empathy levels were assessed after reading a ‘journal entry’ type narrative believed to have been written by either a young person (25 year old) or an older person (85 year old) experiencing chronic pain (pretest) and again after assignment to one of two conditions (posttest). Conditions involved sharing an autobiographical memory of having experienced pain, or as a comparison, thinking aloud about the author by recalling the pain narrative. Findings indicate that empathy levels increased after sharing an autobiographical memory but not in the comparison condition. Participants did not show age biases but reported equal empathy for the young and older narrator.

The design for the second study was highly similar but with a new comparison condition. An independent group of undergraduate men and women’s (N = 91; 52 men, 39 women; M = 19.57, SD = 1.53) empathy levels were assessed after reading the pain narrative believed to have been written by either a 25 year old or an 85 year old (pretest), and again after assignment to one of two conditions (posttest). Conditions in this study involved sharing an autobiographical memory of experiencing pain, or as a comparison, remembering and then sharing a scene from a movie in which a character had experienced similar pain to that described in the narrative. Replicating Study 1, participants’ empathy levels increased after sharing an autobiographical
memory but not in the comparison condition. Participants in Study 2 felt greater empathy for the older narrator than the young narrator.

The Current Study

The current study extends preliminary research by attempting to replicate previously obtained effects found in a general undergraduate student sample, among undergraduate nursing students who are healthcare professionals in training. Another extension of the current work is that in addition to the perceived age of the narrator, the sex of the narrator is manipulated and the operationalization of these person characteristics occurs in a more robust fashion (use of both visual and narrative materials). Finally, the current work measured not only changes in empathy but also potential changes in reported intentions to provide treatment, thus adding a reported behavioral aspect of empathy. The study examined whether age and sex biases exist in empathy and intention to provide treatment, whether autobiographical memory recall uniquely acts as a tool to increase empathy (perspective-taking, empathic concern) and intention to provide pain treatment, and whether increases in empathy predict intention to provide treatment.

Aim 1

To examine whether participants’ initial empathy levels and intentions to provide treatment depend on the age and sex of the hypothetical patient. Based on literature suggesting age and sex biases, hypotheses are that empathy levels are higher: (a) when participants believe the pain-sufferer is 25 years old rather than 85 years old, and (b) when participants believe that the narrator is a woman rather than a man. Age by sex interactions are explored. Though preliminary studies have not borne out the age hypothesis, operationalization of age is improved in the current study providing a clearer test.
Aim 2

To examine whether autobiographical memory recall leads to increased empathy, and to increased reports of intention to provide pain treatment. Based on functional theories of autobiographical memory (Bluck & Alea, 2002), the hypotheses are: (a) participants whom share an autobiographical memory will show a significant increase in empathy (perspective-taking, empathic concern) from pretest to posttest (in relation to control condition), and, (b) participants whom share an autobiographical memory will report greater intention to provide treatment from pretest to posttest (in relation to control condition). These effects are further explored to examine consistency of effects in relation to the pain-sufferer’s age and sex.

Aim 3

Theory suggests that empathy predicts the provision of care (Schulz et al, 2007). The final aim is to examine whether experienced levels of empathy are related to intention to provide treatment. The hypothesis is that: (a) increases in experiencing empathy from the pretest to posttest are related to greater intention to provide treatment at the posttest.
Figure 1-1. Schulz’s et al. (2007) conceptual model illustrates how empathic responding predicts care behaviors.
Methods

The study is a 2 (Memory Recall Condition: autobiographical memory recall, semantic memory recall) X 2 (Narrator’s Age: 25 years, 85 years) X 2 (Narrator’s Sex) design with Time (pretest, posttest) as a repeated measure. Memory Recall Condition, Narrator’s Age, and Narrator’s Sex are between subjects variables. Data were collected online through SurveyMonkey.com.

Pain Narrative Development

In order to manipulate perception of the age and sex of the hypothetical patient, participants were presented with a hypothetical patient through the use of a written narrative which was accompanied by a picture of the supposed narrator. The pain narrative used was developed with concern for ecological validity and pilot-tested in two preliminary studies (Bluck, Baron, Gesselman, Ainsworth, & Gold, under review). The initial draft of the pain narrative was created using the journal entries of a community-dwelling resident who experiences chronic pain. The person combined several journal entries to describe a typical morning in which she experienced pain and tried to go about her daily routine. Next, a review of the literature was completed to identify the major dimensions of chronic pain: these are pain severity, interference with life, and emotional burden (Asmundson, Norton, & Norton, 1999; Chapman & Nakamura, 1999; De Raedt et al., 2002; Melzack, & Katz, 2001; VonKorff, Jensen, & Karoly, 2000), often measured using the West Haven-Yale Multidimensional Pain Inventory (WHYMPI; Jacob, & Kerns, 2001; Kerns, Turk, & Rudy, 1985). The draft narrative of the pain-sufferer was then assessed and modified so that it clearly encompassed aspects of pain severity, interference with life, and emotional burden. The goal was to create a narrative representing how
pain-sufferers might share their experience on a day in which they experienced moderate pain. The narrative included an appropriate level of detail and disclosure as would occur in an instance of social memory recall in everyday life or in consultation with a caregiver (see Appendix A for a copy of the narrative). The 462-word pain narrative was presented to participants with a cover page giving the age and sex (i.e., Ms./Mr.) of the fictitious narrator as well as a picture of this supposed patient.

To ensure the narrative was perceived as sex and age neutral, a pilot test including 10 young and 10 older (gender balanced) adults were asked to report what they believed the age and gender of the patient was and why. There were no age or sex differences. That is, the narrator was thought of as a young and older man and woman equally. While the narrative text itself was standardized and considered age and sex-neutral, the picture and cover page manipulated the participants’ perception that the story was written by a young man, young woman, older man, or older woman. The photographs were carefully selected. To avoid potential differences between young and older adult pictures, photographs of the same person when he/she was young (at approximately 25 years old) and older (at approximately 85 years old) were used in the study. Photos were cropped to show only the face of the individual (no clothing or accessories were visible) and were presented as black-and-white images. All photographs were culturally neutral in that the subject’s nationality was ambiguous, their skin colors were moderate tones, and there was no obvious religious affiliation visible. All photos were emotionally positive to emotionally neutral (see Appendix B).

Participants

The final sample included 167 (11 males, 156 females) undergraduate nursing students (19-50 years old; \( M = 23.56; SD = 4.95 \)) recruited from the University of Florida and Santa Fe College nursing programs in Gainesville, FL (76.6\%) as well as nearby Florida university
nursing programs (20.4%). Note that the age of participants was diverse and not limited to traditional undergraduate students. Analyses were conducted with and without age and sex outlier participants. That is, participants who were three standard deviations above the mean age (i.e., 4 participants) and male participants were removed from analyses. Across all analyses, the results were the same. All participants received $10 gift cards as compensation. The acquired sex imbalance in the sample represents the predominance of women in nursing school and in the profession. The breakdown of ethnicities included 71.9% Caucasian, 10.8% Hispanic, 9.0% Asian/Pacific Islander, and 8.4% African American.

Several steps were taken to ensure data quality and only those who passed several quality control standards were included in the final sample. The survey link was sent to 237 individuals who expressed interest in participating. Of these, 197 completed the study but 30 participants were removed because they failed one or more data quality checks. That is, they: (a) answered two or more embedded foils incorrectly (e.g., select ‘3’ for this response), (b) recalled the age and or sex of the narrator incorrectly, (c) provided an inadequate memory narrative (i.e., less than one sentence or incomprehensible information), and/or (d) failed one or more of the reading comprehension questions designed to ensure that participants read the provided pain narrative (e.g., what did the patient get from the fridge?). Note that if a participant failed one of these data quality controls, they often failed multiple quality control items. Thus, it seemed prudent to remove these data from the sample based on lack of conscientiousness or attention in completing the study. The manipulation checks and quality control checks are further discussed in the Measures section and the Considerations for Online Data Collection section.
All measures used in the study are described in the order in which they appeared in the survey. These include background variables, major constructs of interest (empathy and intentions to provide treatment), manipulation checks, and relevant personality and psychological variables.

**Measures**

**Background and Demographics**

Participants provided self-reports of demographic information using a standard questionnaire.

**Empathy**

The IRI is a self-report measure assessing empathy with 28-items using 5-point Likert-type scales. A 14-item subset of cognitive and affective items from the longer scale was used in the current study. Items are the same as in the original scale but were altered to ensure participants’ responses concerned how they were feeling right at that moment and in reference to the narrator. Subscales include Perspective-taking and Empathic Concern. The Perspective-taking subscale measures a person’s tendency to adopt another’s viewpoint and Empathic Concern measures feelings of warmth and concern. The internal consistency for the modified IRI score was adequate for both subscales, Perspective-taking: Cronbach’s $\alpha = .60$ (pretest), .62 (posttest) and Empathic Concern: Cronbach’s $\alpha = .76$ (pretest), .76 (posttest). The pretest/posttest reliability for the total score (Cronbach’s $\alpha = .87$) and subscales (Perspective-taking: Cronbach’s $\alpha = .82$; Empathic Concern: Cronbach’s $\alpha = .84$) were high.

**Intention to Provide Treatment Questionnaire**

To assess participants’ intention to provide treatment, a list of 16 appropriate strategies to relieve chronic pain was developed in consultation with a professional educator and researcher in the field of nursing (Horgas, personal correspondence, 2008; 2009). Since both are common pain treatment strategies, the list was designed to include both non-pharmacological treatments such
as application of heat and cold, as well as pharmacological treatments such as administration of
prescription pain medication. Items were designed to reflect two levels of effort that the
participant is willing to engage in to assist the patient. That is, for each treatment intention there
is an item regarding *recommending* this treatment (8 items) to the pain suffer, as well as, actually
*providing* the treatment (8 items) to the hypothetical patient (see Appendix C). Participants
reported their intentions to engage in each behavior on 7-point Likert-type scales (1 = extremely
unlikely to 7 = extremely likely). The Intention to Provide Treatment Questionnaire has
reasonable internal consistency for both the pretest (Cronbach’s α = .81) and posttest
(Cronbach’s α = .84) and for both subscales (Recommending: Cronbach’s α = .70 (pretest), .76
(posttest) and Providing: Cronbach’s α = .64 (pretest), .69 (posttest). Pretest/posttest reliability
for the entire measure (Cronbach’s α = .92) and subscales (Recommending: Cronbach’s α = .89
and Providing: Cronbach’s α = .92) were also high.

**Pronounce Filler Task**

This task was used as a filler to lengthen the time between administration of the pretest and
posttest measures of empathy and treatment intentions. The task requires participants to rate the
subjective ease of pronunciation of 232 words using 7-point Likert-type scales (1 = easy; 4 =
medium; 7 = hard). The task was chosen because it is has no evaluative aspect and its content is
neutral so as not to interfere with the subsequent tasks.

**Memory Qualities Questionnaire**

The Memory Qualities Questionnaire (MQQ; Bluck, Levine, & Laulhere, 1999) was used
to assess participants’ memory of either their autobiographical pain experience or the semantic
information about pain that they shared (depending on condition) using 7-point Likert-type
scales. The participant dated the memory and rated it on five dimensions including the personal
significance, level of detail, emotional valence (positive and negative), and frequency of sharing.
Exploratory factor analysis for each condition revealed a two factor solution accounting for 69.14% (autobiographical memory recall condition) and 73.89% (semantic memory recall condition) of the variance. A *Significance* factor was composed of three items concerning the significance, emotionality, and level of detail of the memory. An *Emotional Re-experiencing* factor included three items concerning the positivity and negativity of the memory and the frequency of having shared it.

**Manipulation Checks**

Manipulation checks were used to determine (a) that the participant actually perceived the narrator as suffering from chronic pain (b) that participants’ correctly registered the narrator’s age and sex, and (c) whether participants read and comprehended the pain narrative. The entire measure included ten items. The pain manipulation check included three items from the WHYMPI (Kerns, Turk, & Rudy, 1985) subscales used to create the original pain narrative. Participants were asked about the perceived level of pain severity, interference with daily activities, and emotional burden the narrator was experiencing. Two additional items asked participants to simply state the age and sex of the narrator. Finally, participants were asked three multiple choice questions to determine if they had read and comprehended key aspects of the narrator’s story. They were asked what the narrator got from the fridge, how long their illness was expected to last, and how often the narrator uses a walker. In addition, participants rated their perceived level of similarity to the narrator on a 7-point Likert-type scale and were asked to describe the purpose of the study. Participants did not rate themselves as similar to the narrator ($M = 1.89, SD = 1.39$) and similarity to the narrator did not vary by condition. Note also that none of the participants accurately reported the true nature of the study aims.
Personality

The short form of the Big Five Inventory (BFI-10; Rammstedt & John, 2007) is a 10-item self-report measure of personality. It was administered as a background measure to assess participants’ personality traits and was included to follow-up obtained results. Questions assessed the extent to which people agree or disagree with statements that describe them. Responses were made on 5-point Likert-type scale ranging from disagree strongly (1) to agree strongly (5). Items were averaged to produce standard subscales indicative of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. This short form is useful when a very brief assessment is needed as part of a larger research battery. Convergent validity between the BFI (e.g., John & Srivastava, 1999) and the BFI-10 and test-retest reliabilities of the BFI-10 are acceptable (Gosling, Rentfrow, & Swann, 2003; Rammstedt & John, 2007).

Social Desirable Responding

The Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1991) was included because empathy and intentions to provide care are pro-social values. People with high need for social desirability may over-report feelings of empathy and intentions to provide care for others in pain. The BIDR has 40 items rated on 7-point Likert-type scales (1 = not true to 7 = very true). Cronbach’s $\alpha = .50$ for the Self-deception subscale and $.75$ for the Impression Management subscale. Previous research showed test-retest reliability over five weeks ranges from .65 to .69, and the criterion validity of the BIDR has been demonstrated by a correlation of .71 with the Marlowe-Crowne Social Desirability Scale (Paulhus, 1991).

Procedure

Study materials were administered electronically through Surveymonkey.com. The study was advertised through messages on listservs, postings on websites, and brief in-class
presentations to nursing students at the University of Florida and several other Florida
universities. When individuals contacted the research team with an interest in participating they
were randomly assigned to one of eight conditions. The conditions included four different people
in pain (young or older man or woman) and two memory recall conditions (autobiographical
memory or semantic memory). Participants were sent a survey link via email and accessed the
study materials remotely using the internet.

Participants first completed an Informed Consent and the Demographics Questionnaire. Depending
on the condition, they were then presented with one of four pictures of the
hypothetical patient (young man, young woman, older man, older woman) stating the person’s
age (i.e., 25 years old or 85 years old), in order to manipulate perception of Narrator’s Age and
Narrator’s Sex. Participants were asked to place themselves in the role of a community health
nurse who sees many patients every day as part of their full and busy caseload. They were told
that the narrator (i.e., Ms. or Mr. J) lives alone in the community and suffers from chronic pain
due to polyarthritis, an inflammatory condition, and is seen by a local family physician and
managed with a pharmacological treatment plan. Each participant was told: “Ms. /Mr. J is
experiencing an active ‘flare-up’ and you are assigned to see him/her today. Please read Ms. /Mr.
J’s story closely and carefully as the rest of the survey depends on you having understood it.
When arriving at Ms. /Mr. J’s home, he/she describes his/her condition to you in the following
way.”

The participant then read the standard pain narrative purportedly written by the patient.
Note that while the picture and description of the patient manipulated perceptions of age and sex,
the pain narrative itself was exactly the same in all conditions. A recorded version of the pain
narrative, or having a study confederate act as the hypothetical patient (instead of a description
with photo) was considered as an alternate method for presenting the pain narrator in the current study, but speaking characteristics, clothing style, and mannerisms would introduce unmeasured confounds. Thus, a description and photo of the hypothetical patient, accompanied by a pain narrative purportedly written by the patient were used to maximize ecological validity while maintaining scientific rigor. Other studies have used only images to manipulate perceptions of age and sex (e.g., Hirsh, Alquda, Stuts, & Robinson, 2008), and preliminary work (Bluck, Baron, Ainsworth, Gesselman, & Gold, under review) used only written indication of the narrator’s age.

After viewing the patient’s picture and reading the pain narrative, all participants completed the modified version of the Perspective-taking and Empathic Concern subscales of the IRI (pretest) as well as the Intention to Provide Treatment (IPT) Questionnaire (pretest). Next, they completed the 5 – 7 minute pronunciation filler task to lengthen the time between administration of the pretest and posttest measures. In both conditions, participants were then asked to think back to Ms. /Mr. J’s story that they had read a few moments ago and received this synopsis: “You’ll recall Ms. /Mr. J told you about how he/she was diagnosed with polyarthritis, and then told about how he/she felt last night and then today when he/she had the flare. Try to take a few moments to just think back over and remember that story.”

The next part of the survey differed depending on whether the participant had been randomly assigned to the autobiographical memory recall or semantic memory recall condition. In the autobiographical memory recall condition, participants were asked to recall their own memory of a time they were in pain and to share their story as if it were a response to Ms. /Mr. J’s story they read earlier. Participants were asked to type out their own pain memory as if they were talking to Ms. /Mr. J. As they were writing their memory, they were asked to think about how their experience relates to Ms. /Mr. J’s story. They were asked to “start at the beginning and
write everything you can remember about what you were feeling, thinking, and doing during your own pain experience. Remember it is very important that you tell the story as if you are sharing it with Ms./Mr. J.”.

In the semantic memory recall condition, they were asked to remember any information that they may have learned about pain or about patients who are in pain as part of their nursing program (i.e., training/coursework). They were asked to share this information as if it were a response to Ms./Mr. J’s story. Participants typed out recalled information about pain as if they were talking to Ms./Mr. J. As they were writing this information, they were asked to really think about how it relates to Ms./Mr. J’s case. They were asked to “write everything you know about patients who are in pain including what you would be feeling, thinking, and doing in response to Ms./Mr. J. Remember it is very important that you write this as if you are sharing it with Ms./Mr. J.”

After responding to the patient’s pain narrative in either condition, the modified version of the IRI (posttest) and the IPT (posttest) was again completed. To avoid response bias, the order of items on the pretest and posttest IRI and IPT were randomized across participants. Finally, the related memory items, manipulation checks, personality, and other psychological measures were administered: MQQ (Bluck, Levine, & Laulhere, 1999), manipulation checks (Bluck, Baron, Ainsworth, Gesselman, & Gold, under review), BFI-10 (John & Srivastava, 1999; Gosling, Rentfrow, & Swann, 2003), and BIDR (Paulhus, 1991). These were administered last to prevent influence on the empathy and treatment intentions measures or on experimental condition manipulations. The session took less than 45 minutes to complete.

**Considerations for Online Data Collection**

Data were collected through an online survey created using Surveymonkey.com. Internet-based data collection is an increasingly popular method for conducting psychological research.
Previous research on the quality of internet-based data collection showed no differences in important psychometric properties, such as internal consistency, criterion-related validity, factor loadings, or mean scores between traditional paper and pencil surveys and online surveys. This is true for assessing both mundane topics such as student ratings of quality of instruction, and sensitive topics such as reporting on sexual behaviors (Chang, 2005; Chuah, Drasgow, & Roberts, 2006; Epstein, Klinkenberg, Wiley, & McKinley, 2001; King & Miles, 1995; Lonsdale, Hodge, & Rose, 2006). Missing data are often more common in the paper and pencil format compared to both supervised and unsupervised online surveys (Lonsdale, Hodge, & Rose, 2006). For open-ended items, such as the narratives in the current study research showed that online survey responses are either longer or of the same length as mail responses (Fricker & Schonlau, 2002). Online surveys also lead to higher and faster response rates than surveys distributed via postal mail (Cobanoglu, Warde, & Moreo, 2001; Lonsdale, Hodge, & Rose, 2006). Using undergraduate students as study participants, Pealer and colleagues (2001) found that online surveys resulted in the same response rates as mail surveys. Furthermore, online surveys encourage collecting larger samples as they have the potential to eliminate costs and labor-intensive fielding tasks such as survey package preparation, mailing, and data entry (Fricker & Schonlau, 2002). The literature suggests that using an online survey can be advantageous in terms of data collection speed and quality. In addition, health professionals in training are difficult to recruit due to their busy lives. Use of an online survey is a good tool for reaching this sample of adults (Nosek, Banaji, & Greenwald, 2002).

The use of an online survey also, however, has limitations. First, internet samples may under-represent populations that have low levels of access to the internet, though this is a challenge in all research (Nosek, Banaji, & Greenwald, 2002). For example, in developmental
research, using internet surveys to study older adult samples may result in bias. The current sample of young adults, particularly because they are students, is highly likely to have internet access either at home, at work, or both. Thus, internet access was not expected to bias the current sample. Just in case, participants were offered the option of coming to the research lab or arranging a meeting to use an experimenter-provided laptop computer in case they did not have access to a computer. No participant was interested in this option. A second limitation is that participants may involuntarily end participation in the case of a computer or server crash, a broken internet connection, a program error or even a power outage (Nosek, Banaji, & Greenwald, 2002). Participants were asked to report such cases to the experimenter so that their missing data could be labeled ‘involuntary’ in contrast to those who decide to end participation voluntarily. No participant reported such issues.

Since data collection is not supervised by the researcher in the case of online surveys, various precautions were taken to increase data quality in the online format. First, as stated in the Participants section, there were foil items embedded in the survey that were used to check if the participants actually read the items (e.g., Items that simply give an instruction like “Answer ‘3’ for this item”). Second, the survey was designed to increase the likelihood of completion (e.g., not too many items on each page, progress bar displayed throughout survey, etc.). Third, issues related to varied screen resolution and sizes were readdressed in pilot testing. For example, the survey was accessed on several computers with different operating systems. Finally, participants were told they had one week to complete the survey, as Fricker and Schonlau (2002) suggest that researchers should leave a survey in the field for about ten days to achieve 70-80% response rates. Four days after being sent the initial survey link, all participants were sent a reminder that they had three days to complete the survey. Note, however, in hopes of getting completed
surveys from participants who expressed interest but who did not start the survey within one week, 40 participants in the final sample were contacted twice, after more than one week, and encouraged to participate in the study.
CHAPTER 3
RESULTS

The results are reported in two sections. The first presents preliminary analyses examining tests of normality, reliability of procedures through manipulation checks, and necessity of including social desirability scores as covariates in analyses. The second section describes results of the major analyses examining the study aims.

Preliminary Analyses

Tests of Normality

The major dependent variables (Empathy, Intention to Provide Treatment) are both approximately normally distributed. Measures of central tendency were relatively similar for both measures. Additionally, the measures of deviation from normality show that the skewness and kurtosis fall within the acceptable range (i.e., between +/-1.0).

Narrator’s Age Manipulation Check.

The age manipulation check was used to ensure that participants who were randomly assigned to read narratives purportedly by a young and older person (young: 25 year old, older: 85 year old) were indeed aware of the age of the narrator. Seventy-nine participants (94%) correctly reported the young narrator’s exact age: 25 years old and all reported the young narrator’s age within five years of the exact age. Sixty participants (72.3%) correctly reported the older narrator’s age: 85 years old. All participants in the older narrator condition reported the narrator’s age as being in the societal-defined stage of older adulthood, that is, 65 years or older.

Narrator’s Sex: Manipulation Check.

The sex manipulation check ensured that participants who were randomly assigned to read narratives, purportedly by a man or by a woman, were indeed aware of the sex of the narrator.
All participants in both the male and the female narrator conditions correctly reported the narrator’s sex.

**Narrator’s Pain: Manipulation Check**

A manipulation check was included to determine that participants actually perceived the narrator as being in pain. Participants rated the narrator as experiencing a moderate to high level of pain (higher values denote greater severity and interference): severity ($M = 6.37$, $SD = .70$), interference ($M = 6.63$, $SD = .60$), and emotional burden ($M = 2.00$, $SD = 1.39$; lower scores denote greater emotional burden).

**Participants’ Comprehension of Narrator’s Story: Manipulation Check**

The comprehension manipulation check ensured that participants read and understood the pain narrative. One-hundred sixty participants (95.8%) correctly responded to all three reading comprehension questions based on the narrative. All participants included in the final sample correctly answered two or more questions about the narrative.

**Socially Desirable Responding**

Because showing empathy and providing treatment are pro-social behaviors, socially desirable responding was assessed to ascertain whether participants reported inflated levels. Bivariate correlations were conducted between the BIDR (Paulhus, 1991) self-deception and impression management subscales and the IRI and IPT composite and subscale scores at both pretest and posttest. Neither BIDR subscales were correlated with either Empathy or Intention to Provide Treatment composite or subscale scores at pretest or posttest. Thus, the BIDR subscales were not used as covariates in any subsequent analyses.
Major Analyses

Aim 1

To examine whether participants’ initial empathy levels and intentions to provide treatment are dependent on the age and sex of the patient narrator, two separate 2 (Narrator’s Age: young, older) X 2 (Narrator’s Sex) ANOVAs were conducted. In the first ANOVA, pretest scores on the IRI composite was the dependent variable. No main effects or interactions were found. A 2 (Narrator’s Age: young, old) X 2 (Narrator’s Sex) ANOVA was conducted with the IPT composite as the dependent variable. No main effects or interactions were found.

To determine whether differences emerged when using the individual IRI and IPT subscales, separate 2 (Narrator’s Age: young, old) X 2 (Narrator’s Sex) ANOVAs were conducted for each subscale. No differences were found in pretest levels of Empathic Concern or Perspective-taking subscales of the IRI or in Recommending or Providing Treatment subscales of the IPT. Participants levels of empathy and intention to provide treatment appears not to vary depending on the perceived age or sex of the hypothetical patient.

Aim 2

To examine whether autobiographical memory recall leads to increased empathy, or to increased reports of intention to provide pain treatment, two separate 2 (Narrator’s Age: young, old) X 2 (Narrator’s Sex) X 2 (Memory Recall Condition: autobiographical, semantic) ANOVAs were conducted with Time (pre, post) as a repeated measure. In the first ANOVA, the composite score on the IRI was the dependent variable. A main effect of time emerged. Empathy increased from the pretest ($M = 4.38, SD = .43$) to the posttest ($M = 4.43, SD = .43$), Wilks’ $\lambda = .96$, (1, 159) = 6.27, $p < .05$, MSE = .27. No other main effects or interactions were found. In the second ANOVA, the IPT composite was the dependent variable. A main effect of time also emerged. Intention to provide treatment increased from the pretest ($M = 5.17, SD = .85$) to the posttest ($M = 5.27, SD = .85$), Wilks’ $\lambda = .95$, (1, 159) = 8.13, $p < .005$, MSE = .27. No other main effects or interactions were found.
= 5.30, SD = .90), Wilks’ λ = .93, (1, 159) = 11.73, p < .05, MSE = .43. No other main effects or interactions were found.

Follow-ups of these effects were conducted using the individual subscales of both the empathy measure (IRI) and the intentions to provide treatment questionnaire (IPT) to examine which particular aspects of these measures increased over time. Two (Narrator’s Age: young, old) X 2 (Narrator’s Sex) X 2 (Memory Recall Condition: autobiographical, semantic) ANOVAs were conducted with Time (pre, post) as a repeated measure and each IRI subscale as a dependent variable. For the Empathic Concern subscale, no main effects emerged. There was, however, an interaction of Narrator’s Age X Narrator’s Sex X Memory Recall Condition X Time, Wilks’ λ = .97, (1, 159) = 5.44, p < .05, MSE = .22.

To disentangle the interaction, follow-up analyses were conducted. Selecting only the Semantic Memory Condition, a 2 (Narrator’s Age: young, old) X 2 (Narrator’s Sex) ANOVA was conducted with Time (pre, post) as a repeated measure and the Empathic Concern subscale as the dependent variable. No significant effects were found.

Selecting for the Autobiographical Memory Condition, a 2 (Narrator’s Sex: male, female) X 2 (Narrator’s Age: young, old) ANOVA was conducted with Time (pre, post) as a repeated measure and the Empathic Concern subscale as the dependent variable. An interaction of Narrator’s Age X Narrator’s Sex X Time emerged, Wilks’ λ = .94, (1, 181) = 4.92, p < .05, MSE = .20. There was no sex by time effect for those in the Old Narrator Condition. Selecting for the Young Narrator Condition, however, did yield a Narrator’s Sex X Time interaction, Wilks’ λ = .94, (1, 181) = 4.92, p < .05, MSE = .22. Participants in the Autobiographical Memory condition who were presented with a young male versus female narrator differed in their extent of Empathic Concern from the pretest to posttest. Specifically, follow-up paired sample t-tests
showed an increase in Empathic Concern from pretest ($M = 4.16$, $SD = .91$) to posttest ($M = 4.36$, $SD = .62$) for participants responding to the young female narrator. There were no Time differences in the Young Male Narrator Condition. There were also no differences (independent t-tests) in Empathic Concern between pretest scores or posttest scores for participants in the old female narrator versus young female narrator conditions. These analyses showed that the observed Narrator’s Age X Narrator’s Sex X Memory Recall Condition X Time interaction for Empathic Concern is driven by increased Empathic Concern from pretest to posttest for participants responding to Young Female Narrators only. Participants in all other conditions did not show differences in Empathic Concern over time.

For the Perspective-taking subscale of the IRI, there was a main effect of time, Wilks’ $\lambda = .91$, $(1, 159) = 16.27, p < .05$, $MSE = .43$. Perspective-taking increased from the pretest ($M = 4.35$, $SD = .45$) to the posttest ($M = 4.46$, $SD = .44$). No other main effects or interactions emerged. Thus, Perspective-taking increased regardless of whether participants shared an autobiographical memory or semantic memory and across all narrators whereas Empathic Concern only increased in the autobiographical memory condition and only among participants who were in the young female condition.

For IPT subscales, the increase from pretest to posttest holds for both Recommending and Providing Treatment. Separate 2 (Narrator’s Age: young, old) X 2 (Narrator’s Sex) X 2 (Memory Recall Condition: autobiographical, semantic) ANOVAs were conducted with Time (pre, post) as a repeated measure for each IPT subscale. For the Recommending subscale, there was a main effect for time, Wilks’ $\lambda = .82$, $(1, 159) = 36.16, p < .05$, $MSE = .56$. Recommending treatment increases from the pretest ($M = 5.26$, $SD = .92$) to the posttest ($M = 5.55$, $SD = 1.00$). No other main effects or interactions emerged. For the Providing subscale of the IPT, there was also a
main effect of time, Wilks’ $\lambda = .91$, $(1, 159) = 15.98, p < .05$, MSE = .39. Providing treatment increases from the pretest ($M = 4.87, SD = .93$) to the posttest ($M = 5.04, SD = .99$). No other main effects or interactions emerged.

**Aim 3a**

As per Schulz et al.’s (2007) model suggesting that empathy influences provision of care, it is hypothesized that increases in empathy from the pretest to posttest will predict intention to provide treatment at the posttest. To examine this, a step-wise hierarchical regression approach was taken. The criterion variable was the posttest IPT composite score. The pretest IPT composite score was entered in the first step of the model. For the predictor variable, residual scores were obtained in order to partial out the effect of pretest IRI on posttest IRI. To determine whether change in empathy predicts increases in intention to provide treatment, a hierarchical regression model was conducted in which the IRI residualized scores were entered in the second step. Results show that, as would be expected, the pretest IPT composite score ($\beta = .89$) predicts the posttest score. Note, however, that as predicted based on Schulz et al.’s (2007) conceptual model, the IRI residual composite score ($\beta = .13$) was a significant predictor of posttest IPT scores, $adjusted R^2 = .74, F (2, 166) = 229.34, p < .01, \eta_p^2 = .46$. Follow-up analyses were conducted using each of the two subscales of the IRI, using residualized scores as above to capture change from pretest to posttest. These analyses show that the effect reported above was only evident for Perspective-Taking ($\beta = .13$), $adjusted R^2 = .74, F (2, 166) = 231.57, p < .01, \eta_p^2 = .48$. That is, level of change in Perspective-taking from pre to posttest predicted increase in intention to provide treatment at the posttest. The analysis using IRI Empathic Concern as a predictor of posttest intentions to provide treatment was not significant.
**Aim 3b**

The focus of the third aim was to determine whether empathy predicted increases in intention to provide treatment. Given that the above analyses showed that IRI Perspective-taking did indeed predict intention to provide treatment, a further regression analysis examined what other variables beyond perspective-taking might be involved in predicting intentions to provide treatment. The other variables explored were person characteristics and perceptions of the narrator. Person characteristics were considered as possible predictors because individual’s traits and personal past experience may account for the variation in intention to provide treatment. Perceptions of the narrator were considered as potential predictors of intention to provide treatment since views about another may bias one’s intention to provide treatment.

A step-wise hierarchical regression was performed with IPT posttest as the criterion. The IPT pretest scores and IRI Perspective-taking Residual scores were entered on the first step. Person characteristics and perception of narrator variables were entered in the second step. Person variables included the BFI Extraversion, Agreeableness, Conscientiousness, Openness, and Neuroticism subscales as well as Experience with Chronic Pain and Year in Program. Perception of narrator variables included the Manipulation Check’s Perceived Pain Impact (composite of Emotional Burden, Interference, Severity subscales) and Similarity to Narrator. Again, as would be expected the IPT pretest scores ($\beta = .90$) predicted IPT posttest. Beyond the IRI Perspective-taking Residual score ($\beta = .13$) there were no other significant predictors of posttest IPT, $adjusted R^2 = .86$, $F (2, 166) = 231.57, p < .05$, $\eta_p^2 = .22$. Person characteristics of the participant and perception of narrator variables did not play a role in intention to provide treatment.
The current study addressed three major aims using a pretest-posttest experimental design. Undergraduate nursing student participants imagined themselves as community nurses who provide care to patients in their homes. Participants were randomly assigned to believe that their patient was either a 25 year old man or woman or an 85 year old man or woman. They were presented with a hypothetical case, including a picture of the patient and an autobiographical narrative purportedly written by them about their current suffering due to chronic pain. Participants then rated their current level of empathy for, and also their intention to provide a variety of treatments to, the patient (pretest). Experimental manipulation further involved participants being randomly assigned to recall either an autobiographical memory of having been in pain or, in the comparison condition, to recall semantic information about chronic pain learned through their nursing training. Participants then rated their level of empathy toward, and intention to provide treatment to, the patient again (posttest). The first study aim was to examine whether participants’ empathy levels and their intention to provide treatment varied depending on the perceived age and sex of the hypothetical patient. Contrary to expectation, participants showed equal levels of empathy and showed the same intention to provide treatment to the patient whether they perceived them to be a young or older man or woman.

The second aim, based on the functional approach to autobiographical memory (e.g., Baddeley, 1987; Bluck, 2003; Pillemer, 1992), was to determine whether recalling a memory of oneself being in pain would result in increased empathy and increased intention to provide treatment to another person (compared to recalling semantic information about pain). Remembering one’s own autobiographical memory of having been in pain was expected to be related to increased empathy and increased intentions to provide treatment at the posttest,
whereas no such increase was expected after recalling semantic information about pain. This prediction was partially supported. Sharing an autobiographical memory in response to the presented pain narrative did increase reported levels of Perspective-taking and Intentions to Provide Treatment but this increase also occurred in the semantic memory condition. Increases in Empathic Concern, however, were found only in the autobiographical memory condition and only when the patient was perceived to be a young female.

The third aim, grounded in Schulz’s model of caregiving (Schulz et al., 2007), was to examine whether obtained increases in empathy would predict greater intentions to provide treatment. As expected, and in line with Schulz’s model, increased levels of perspective-taking toward a patient are associated with greater intention to provide pain-relieving treatment to that person. The study findings are discussed in more detail below.

**Do Student Nurses’ Feelings of Empathy or Intention to Provide Treatment Depend on Who is Suffering?**

This research investigated whether the age (i.e., young, old) and sex of a person experiencing pain affects the level of empathy others feel toward them and the intentions others have to provide pain treatment to them. Research showed that there are both age and sex biases in how caregivers perceive others in pain. For example, previous research demonstrates that people sometimes view pain as a normative aspect of aging (Gagliese & Melzack, 1997). Even medical professionals and formal care providers may mistakenly ascribe chronic pain symptoms to old age rather than to identifiable underlying physical causes (e.g., Lasser et al., 1998). Sex of the patient has also been shown to impact healthcare professionals' perceptions of pain (e.g., Hirsh, Alquda, Stuts, & Robinson, 2008). Based on existing literature on age and sex biases in healthcare assessments, it was hypothesized that participants would feel greater empathy and show more intention to provide treatment to young narrators and to female narrators. Instead,
however, pretest levels of empathy and intention to provide treatment were the same for young and older male and female narrators.

The study findings suggest that personal biases toward young and older men and women may not exist in certain situations. Previous research, using the same basic study design as employed here (Bluck, Baron, Ainsworth, Gesselman, & Gold, under review) also showed that participants were not biased against older persons in their reports of empathy for persons in chronic pain (sex biases were not measured). The current study attempted to make age more salient by providing a photo of the hypothetical patient and also included sex of the narrator as an added feature. In addition, both empathy and intention to provide treatment were assessed. In line with earlier findings, even with age made more salient, age and sex biases were not identified in either reported empathy or intention to provide treatment.

What might account for these findings? It appears that, as in preliminary work with Liberal Arts and Sciences undergraduates, undergraduate Nursing students focused on the pain experience of the narrator rather than that person’s age or sex. That is, it is possible that exposure to the detailed content of the autobiographical narrative purportedly created by the patient is responsible for the lack of age or sex bias. The evocative narrative (See Appendix A) served as the cue for eliciting empathy and providing treatment: the richness of the narrative focused participants on the patient’s pain status regardless of their age or sex. It seems that patients in pain who are subject to bias may be protected from such biases in settings where pain reports are collected using a narrative approach. This method may prove more effective in reducing biases than traditional assessments of patients’ pain.

This explanation seems plausible for two reasons. First, if age and sex had been perceived as salient to participants (themselves young females), they would likely have rated themselves as
similar to the younger, and the female, narrator when providing similarity ratings. But this did not occur: participants felt equally similar to the male and female young and older narrators. This implicitly suggests that the rich pain narrative was evocative in creating an authentic sense of the narrator as a human being in pain, thereby reducing the importance of the person’s age or sex. Second, and related to the perceived similarity issue, participants rated the narrator (regardless of age or sex) as being in a moderate level of pain in terms of pain severity, emotional burden of the pain, and the pain’s interference with daily activities. That is, the convincing content of the purportedly autobiographical pain narrative (as opposed to simply the patient’s demographics such as age or sex) was used to ‘paint a picture’ of the participants’ suffering for the participant. Reading the autobiographical narrative in which the participant gets a vivid sense of the patient’s pain intensity (e.g., “I felt throbbing pain in my hips…”), how it affects them emotionally (e.g., “The pain…and then the feeling that I can’t do anything about it.”), and how it interferes with their daily life (e.g., “I had all these plans for what I needed to do today… but I didn’t get any of it done.”), focused participants on the experience of the patient and not simply the demographic description of the patient. Since the content of the narrative was the same for the male and female young and older narrator, this provides a potential explanation for the finding of similarity in empathy and intention to provide treatment felt for all hypothetical patients. It also speaks to the power of narratives, or personal stories, for providing health-related information to care professionals.

Despite these findings, personal biases still do exist in certain care situations. For example, previous research showed that people perceive chronic pain as a normative aspect of aging (Gagliese & Melzack, 1997; Miller, 1997; Test, Pun, & Benzie, 2005) and that people think that women experience greater pain intensity and their pain negatively impacts them more
than men (Hirsh, Alquda, Stuts & Robinson, 2008). In the current research, however, such biases did not manifest as feeling less empathy for or having less intention to provide treatment to patients based on their age or sex. Instead, the current research suggests that using a rich narrative to describe a person’s pain may result in participants focusing on pain status regardless of age or sex of the patient.

Another reason the current study found no biases in empathy and treatment intentions may be related to the level of experience nursing students have with patients. Previous research showing that empathy declines with experience in providing care may explain why biases have been found in caregivers in past research (e.g., Gagliese & Melzack, 1997; Miller, 1997; Tse, Pun, & Benzie, 2005), but not in nursing students in the current study. Research showed there are differences in empathic responding between people who have only recently become healthcare providers and more senior providers: unfortunately it appears that as caregivers become more experienced, they are less empathic (e.g., Carmal & Glick, 1996). In fact, even healthcare students’ empathic responding declines across their years of education (Bellini, Bairne, & Shea, 2002; Hojat et al., 2004). Perhaps early career nursing students’ levels of empathic responding and intentions to provide treatment are “protected” by their lack of experience, resulting in these participants also not showing age or sex biases toward the perceived patient. These nursing students reacted similarly to non-health professions undergraduates in terms of their lack of bias (Bluck, Baron, Ainsworth, Gesselman, & Gold, under review). It is possible that as undergraduate nursing students become more experienced in their field, their levels of empathy and intention to provide treatment may become subject to age and sex stereotyping. To the extent that empathy is valued as an integral aspect of care (AAMC, 2009; Stepien & Baernstein, 2006) this is an area of concern for future research and practice.
Does Autobiographical Memory Recall Increase Empathy and Intention to Provide Treatment?

The study also examined whether autobiographical memory serves a social function, specifically whether memory recall can increase an individual’s level of empathy and their intention to provide treatment when faced with a hypothetical patient. The functional approach to autobiographical memory (e.g., Pillemer, 1992) suggests that memories serve several social functions such as maintaining intimacy and eliciting empathy (e.g., Bluck & Alea, 2003; Nelson, 1993; Webster, 1995). For example, past research (Alea & Bluck, 2009) demonstrates that sharing autobiographical memories about one’s romantic partner results in greater feelings of intimacy toward him or her. Bluck and colleagues (Bluck, Baron, Ainsworth, Gesselman, & Gold, under review) have shown that sharing an autobiographical memory of being in pain uniquely increases one’s level of empathy toward a narrator in pain across two studies with varying control groups.

The current study builds on that research and also showed that autobiographical memory recall can increase empathy, and in addition, can increase intentions to provide treatment to a hypothetical patient. Across both conditions, individuals’ levels of the cognitive aspect of empathy, perspective-taking, as well as intention to recommend and provide treatment increased by the posttest. That is, increases in perspective-taking and intention to provide treatment occurred separately for both the autobiographical memory condition and for the semantic memory condition. Contrary to expectation, however, sharing an autobiographical experience of being in pain did not uniquely increase either perspective-taking or intentions to provide treatment. Autobiographical memory recall did, however, uniquely increase the emotional component of empathy, empathic concern. This increase only occurred when participants believed the narrator to be a young female.
It appears that it may be the act of seriously considering and processing the narrator’s suffering which results in increased perspective-taking and greater intentions to provide treatment. Though the study did not directly assess processing of the narrative (except through some simple reading comprehension questions), both conditions required the participant to fully understand the narrator’s situation in order to either produce their own similar autobiographical narrative, or to recall relevant, related, semantic pain information. Note that in both conditions participants were asked to recall their memory as if they were talking to and engaging with the hypothetical patient. Thus, at the posttest they had not only read the hypothetical patient’s pain narrative (as at pretest) but provided a considered response as if talking to the patient.

The type of processing of the patient’s situation that occurs across conditions is likely somewhat different, but has the same end result of increased perspective-taking and intention to provide treatment. The autobiographical memory recall condition involved reliving a similar, personal pain-related experience in order to relate to the patient’s situation. The semantic memory recall condition involved recalling previously learned information about chronic pain. Recalling such information demanded that participants draw on information about a specific ailment (i.e., polyarthritis) and related medical issues (i.e., chronic pain) and share specific details about these conditions that they felt might help the hypothetical patient. In order to recall relevant information about a patient’s condition and to clearly identify treatment options, the participant needs to seriously consider the patient’s current experience (i.e., take their perspective). Recall of previously learned semantic information is common in didactic and clinical contexts (Bayes, 1972; Bernieri, Davis, Rosenthal, & Knee, 1994; Kendon, 1974; Raingruber, 2001). In sum, when someone really listens to another’s story of suffering and does some deep processing of it, either by thinking of a previous time when they themselves
personally experienced pain or recalling semantic pain information that might help the suffer, they engage with the other’s situation. This appears to increase both their ability to take the other’s perspective (cognitive component of empathy) and to increase their intention to provide treatment to relieve the sufferer. It seems participants use several psychological processes to experience increased empathy: they employed some level of reasoning and used memories of their personal experiences (their autobiographical memory) or used their prior knowledge (of semantic information) to take the perspective of the narrator, and to think about what treatment could help them.

Note, however that a different pattern emerged for the emotional component of empathy, empathic concern (i.e., feeling concerned for and touched by another’s situation). Empathic concern only increased after autobiographical memory recall, and only when the patient was perceived to be a young female. That is, the warm component of empathy, empathic concern, increased only when sharing a personal experience with pain and only toward the young female narrator. Even though the hypothetical narrative was the same across conditions, increases in empathic concern may exist because the participants shared a personal experience with pain. This, however, was limited to young female narrators. Sharing a personal experience with pain to a young female narrator seemed to promote greater tender warm feelings toward this narrator. It appears that reading a detailed narrative about a young female, and then sharing a similar personal experience, allowed participants to have greater concern for the patient. Future research needs to see if autobiographical memory can more generally increase empathic concern toward patients (beyond young females).

The current study’s overall findings suggest that there are two ways that narratives of pain can increase empathy and treatment intentions. First, listening to another’s narrative of pain,
and understanding and processing their story increases one’s perspective-taking and intention to provide treatment toward that person. Second, sharing one’s own autobiographical memory of pain after hearing another’s experience with pain can evoke greater concern and warmth for that person.

Theory (Ickes, 2003) suggests that psychological processes such as observation, memory, and knowledge are involved in experiencing empathy. The patient’s rich pain narrative seemed to provide a strong method of ‘observation’ of their chronic pain situation at the pretest. In terms of experimental manipulation, it appears that participants drew on ‘memory’ in the autobiographical recall condition (as predicted) but may have drawn on ‘knowledge’ in the semantic condition. Thus, it seems that, as described by Ickes (2003) observation (via hearing a patients’ pain narrative), memory (through sharing personal pain experiences), and knowledge (drawing on learned information about pain and its treatment) may play important and integrated roles in empathic patient care. Engaging and processing another’s pain experience (i.e., being the story-listener) and recalling personal experience or semantic information about pain (i.e., being the story-teller) can both increase empathy and intention to provide treatment. The current study showed the power of narratives in communicating about the human experience (e.g., Freeman, 2001; McAdams, 2003). Autobiographical narratives grab and hold people’s attention because they are the stories of everyday life. People of all ages (Nelson & Fivush, 2004) share autobiographical narratives as part of their daily lives because they are a crucial way of communicating with others (e.g., Conway & Pleydell-Pearce, 2003). Use of narrative in care settings may be a welcome addition in patient-provider communication.
Do Increases in Empathy Predict Intention to Provide Treatment?

When a person feels increased empathy for another, does that influence the extent to which they intend to reach out and help them? A recent model of caregiving (Schulz et al., 2007) suggests that increased levels of empathy do indeed lead to increased treatment for patients (see Figure 1.1). That is, the model suggests that if a caregiver feels empathy, they gain compassion and will feel a strong motivation to relieve the other person’s suffering. The current research tested this aspect of the model. When recalling either an autobiographical memory of having experienced pain or semantic information about pain, participants showed increased capacity or willingness to take the patient’s perspective. Moreover, as predicted, when these nursing students were better able to take the perspective of the narrator, they reported greater intention to provide treatments such as recommending or providing hot or cold packs, therapeutic massage, and external analgesic cream. This finding provides support for Schulz and colleagues’ (2007) model of caregiving. Being able to take the perspective of another is not just about the patient and caregiver ‘feeling connected’ but actually results in greater intentions to provide pain relief. Formal and informal caregivers may need to actively hear their patient’s story, engage and process the shared information, and recall and share either personal experience or specific information about a patient’s condition in order to take the patient’s perspective. If they do, they are more likely to be motivated towards providing care for individuals experiencing pain and suffering. Sharing personal memories or extended narratives of semantic information might be particularly important in formal caregiving settings where personal relationships are less likely developed. Formal caregivers often lack personal relationships with their patients and are not likely to share memories due to time restraints.
Analyses also examined whether other factors, beyond increases in perspective-taking, were related to increases in intention to provide pain-relieving treatment. Variables related to characteristics of the participants, and participant’s perceptions of the narrator were examined. Neither set of variables were associated with intention to provide treatment. This suggests that increases in intention to provide treatment are related to the ability to take a patient’s perspective but not to other factors such as participant’s personality type, their own personal experience with chronic pain, their year in the nursing program, their perception of the narrator’s pain experience, or how similar they feel to the patient.

**Limitations**

The study is not without limitations. Two issues, demand characteristics and the ecological validity of the methodology are discussed below.

Participants in the current study may have been affected by demand characteristics. Receiving the pretest measures of empathy and intention to provide treatment could have made participants aware of one of the study’s aims. That is, some participants may have thought they were expected to show an increase in empathy and treatment intentions at the posttest. While this is a possibility that cannot be completely ruled out, demand characteristics seem an unlikely explanation of the results for three reasons. First, if demand characteristics were operating, both aspects of empathy would have increased at the posttest in both conditions, but only perspective-taking showed this pattern. In fact, the emotional component of empathy, empathic concern, is arguably the most likely to be affected by demand characteristics: people may want to appear warm and kind and may be likely to provide reports that make them seem genuinely concerned for another person. But empathic concern scores did not show a general increase pattern as would be expected due to demand. Second, if demand characteristics accounted for the observed
results, levels of empathy and intention to provide treatment would likely be related to the measure of social desirability. Participants’ impression management and self-deception scores were not related to empathy or to intention to provide treatment. Third, if demand characteristics were at play, they would have been detected when participants were asked to report the purpose of the study after completing the survey. Instead, none of the participants accurately reported the purpose of the study as involving attempts to increase empathy and treatment intentions. Thus, demand characteristics do not seem like a highly plausible explanation for the observed pattern of results.

Ecological validity issues also need some discussion in terms of the application of this work to real-world care settings. The current study investigated nursing student’s intentions to provide treatment to a hypothetical patient in pain. In terms of ecological validity, this might have posed (at least) two issues: neither actual treatment behaviors nor practicing caregivers with their real patients were examined.

The major dependent variable concerning treatment in the study was a self-report measure of treatment intentions. Future research should investigate whether the findings of the current study hold up when examining actual treatment, not just treatment intentions. That is, future research might examine whether biases exist in providing actual treatment, whether narrative sharing increases provision of actual treatment, and whether increases in perspective-taking predict provision of actual treatment.

A second concern is whether results obtained from nursing students are likely to hold with practicing caregivers. In line with previous research (e.g., Gagliese & Melzack, 1997; Hirsh, Alquda, Stuts & Robinson, 2008), formal caregivers may indeed show age and sex biases in empathy and intention to provide treatment, despite the current study’s finding of no bias in
nursing students. Observed increases in perspective-taking and empathic concern after memory-sharing, and the relation between perspective-taking and intention to provide treatment may also not extend to real-life care settings. This in not exactly a study limitation but is a way in which the study setting may not mirror the complexity and stress of actual care settings. In fact, the study findings may point to a concern for empathy manifesting in care settings. For example, due to time and staffing limitations in many care settings, practicing caregivers may not interact with their patients for long enough periods of time or on a regular enough basis to hear their pain story, engage seriously in the narrative, and share detailed autobiographical or semantic narratives back to the patient. This may hinder the ability for caregivers to take the perspective of the patient and thus lower the motivation to provide them with pain-relieving care.

Empathic responding has been, and continues to be, an important component of caregiving. As early as 460 BC, Hippocrates, the ‘Father of Medicine’, considered empathy a critical component of patient care. In current society, professional health organizations (AAMC, 2009; Stepie & Baernstein, 2006) are also recognizing the importance of empathy, naming it as an essential learning objective. Given the current study findings, modern medicine may be drawn to rely more on the power of narratives through which caregivers can learn their patient’s stories, and draw on personal and professional experience (either autobiographical or semantic) to share their own story when relating and caring for patients experiencing chronic pain.

**Conclusion**

The current study showed the power of sharing narratives in increasing empathy and treatment intentions for patients in chronic pain. Contrary to previous research, the current study suggests that the age and sex of a patient do not influence feelings of empathy for, or intention to provide treatment. Instead, nursing students appear to focus on the content of the patient’s
autobiographical narrative rather than their demographics. The findings also demonstrate that hearing a patient’s story, engaging and processing that narrative, and sharing narratives of personal experiences of pain or learned information about pain, increases felt empathy and intention to provide treatment. Engagement in a patient’s personal experience allows an individual to take the perspective of another and show intention to offer support to them. The theorized link between taking another’s perspective and providing them with care (Schultz et al., 2007) was also supported. That intention to provide effective treatment to a patient can improve by taking their perspective is extremely encouraging! It appears that listening to human stories is an important component of increasing empathy and potentially increasing effective treatment in the healthcare context. Given that memory recall increased both empathy and treatment intentions, it is possible that taking a narrative approach in care-giving situations may have the potential to decrease both the human and financial costs associated with patient care (e.g., Stewart, 1995; Moore, Adler, & Robertson, 2000).
About five years ago, I found out I had a painful disease that will last the rest of my life. It can be in all of the joints in my body. Nothing that I have tried so far has really helped – so it’s tough. When I ‘flare up’ it can be quite painful. One of those flares started yesterday, which was even worse than usual because it happened to be my 25th/85th birthday yesterday too. This time, it was mostly in my hips, which really limits how I can move because of course your hips are so central to moving around: getting up, sitting down, and walking.

For about two days prior I felt throbbing pain in my hips and I was so worried that it was going to get worse. Then I started becoming achy in my lower back as well. So I tried to just calm myself down. The doctor told me that hot showers could be useful in this situation. So last night I sat on my shower chair and let the hot water hit my sore joints, got ready for bed, and then tried to sleep.

Unfortunately, I didn’t get much rest. I was worried as I was lying there because I never know how painful it will get or how long it will last. Of course that made it harder for me to just settle down and sleep. I kept thinking about how I was possibly going to get done all the things that I needed to do today. It was really frustrating.

Well, I awakened this morning to ‘face a new day’ but I was still extremely achy and now I am very tired as well. After awhile, I carefully got out of bed and got my walker from my bedroom closet. I walked out of my bedroom to the kitchen and then was walking toward the fridge to get some orange juice. I felt a sharp pain right as I reached for the handle. I froze and leaned over the counter wincing. Words really can’t describe how the pain affects me. The pain…and then the feeling that I can’t do anything about it.

Well, I forgot about the orange juice. With my walker I slowly made my way back to my bed to lie down. I used to really dread using the walker. I don’t like feeling I need to rely on it... Anyways, my day was supposed to just be beginning but it felt like it had already ended. I had all these plans for what I needed to do today. … but I didn’t get any of it done. Well, my 25th/85th birthday sure wasn’t a very positive one…and today is no better! This is the worst flare I have had in years.
APPENDIX C
INTENTION TO PROVIDE TREATMENT QUESTIONNAIRE

As part of your very busy caseload as a licensed community nurse, you are visiting Ms. /Mr. J. and have listened to her/her story. Each of the following questions represents appropriate treatment options endorsed by the doctor. Right now, how likely would you be to recommend or engage in each of the following treatment options? Check the number that represents your response. Please respond to all questions honestly. What would you actually do given that you have a busy caseload and others patients are awaiting your care?

1) Recommend application of heat packs? (R) (Non-Pharm)
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

2) Apply heat packs? (P) (Non-Pharm)
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

3) Recommend taking non-prescription pain medications? (R) (Pharm)
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

4) Provide non-prescription pain medication? (P) (Pharm)
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

5) Recommend taking prescription medication if prescription already filled? (R) (Pharm)
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

6) Contact the doctor for possible prescription change? (P) (Pharm)
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

7) Recommend use of therapeutic massage? (R) (Non-Pharm)
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

8) Provide brief therapeutic massage? (P) (Non-Pharm)
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

9) Recommend application of cold packs? (R) (Non-Pharm)
   1 2 3 4 5 6 7
   extremely unlikely extremely likely
10) Apply cold packs? (P) (Non-Pharm)
   
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

11) Recommend relaxation techniques? (R) (Non-Pharm)
   
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

12) Teach basic relaxation techniques? (P) (Non-Pharm)
   
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

13) Recommend music as a distraction method? (R) (Non-Pharm)
   
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

14) Provide music as a distraction method? (P) (Non-Pharm)
   
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

15) Recommend use of external analgesic cream? (R) (Pharm)
   
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

16) Apply external analgesic cream? (P) (Pharm)
   
   1 2 3 4 5 6 7
   extremely unlikely extremely likely

Note. (R) = Recommending Treatment, (P) = Providing Treatment;
(Pharm) = Pharmacologic Treatment, (Non-pharm) = Non-pharmacologic Treatment.
REFERENCE LIST


BIOGRAPHICAL SKETCH

Jacqueline Marie Baron was born in Toledo, Ohio. The youngest of three girls, she grew up mostly in Sarasota County, Florida, graduating from Lemon Bay High School in 1999. She earned her B.S. (summa cum laude) in psychology in 2003 and her M.S. in psychology (gerontology certificate) in 2006 from the University of Florida.

In 2004, Jacqueline was awarded a three year funded pre-doctoral fellowship from the National Institute on Aging and a master's proposal award from the American Psychological Association (Division 20). Ms. Baron's master's thesis, focused on the characteristics of a 'good' memory story, and this research has been accepted for publication in the International Journal of Behavioral Development, and Discourse Processes. She also has the distinguished honor of being on the National Chancellor's List and the National Dean's List as well as the University of Florida's Dean's List.

She received the Leighton E. Cluff Award for aging research in spring 2007, the Gerber Developmental Research Award in spring 2008 and 2011, and the University of Florida, Psychology Department Dissertation Award in fall 2009. In 2009, she received a nomination from the University of Florida for a Presidential Management Fellowship. Her work is regularly presented at national and international conferences. Jacqueline's interest in the psychology of aging was sparked by her close relationship to her late grandmother and while working in the elderly community.