SLS Newsletter

NEWS FROM THE SEATTLE LONGITUDINAL STUDY

THE PENNSYLVANIA STATE UNIVERSITY FALL 1999

TRANSITIONS IN OUR SEATTLE STAFF

Transitions such a marriage, moves, and retirement are part of each person's life. They also occur in a project, such as the Seattle Longitudinal Study. It is with thanks, best wishes, and a bit of sadness that we begin our farewell to Cherill Perera, our longstanding SLS project coordinator. Cherill has been the person in charge of the Seattle office since 1983/84. She came to the position when her son Nick was in preschool and next year he will graduate from college! Her daughter Julie has also recently produced the first grandchild! Cherill and her husband David are busily enlarging their home on Lopez Island and look forward to spending more time on the islands and visiting their grandson. Cherill ever the avid gardener is planning a wonderful greenhouse as part of the renovation.

Cherill Perera and Robin Dunlap

Cherill over the past 15 years has contributed immensely to the Seattle Longitudinal Study. During her time as project coordinator, the activities and research have increased significantly. In the 1984 wave of the SLS, the cognitive training studies were begun. In the 1991 wave, the study of adult children and siblings of SLS participants was begun and continued in 1998. In 1993, we began study of participants' health behaviors. Finally, in the 1998 wave, we began neuropsychological assessment and blood collection. As the study grew, Cherill's responsibilities expanded -- yet she continued to meet each new challenge masterfully. Most amazing, Cherill knows the names of many, many of the SLS participants and stays in touch with our loyal group.

We are pleased that Robin Dunlap has joined our staff and is assuming Cherill's responsibilities over the next few months. Robin comes to the SLS from many years of experience at Group Health and thus is knowledgeable about many related procedures and facilities. Join us in wishing Cherill a wonderful, well deserved retirement. Please welcome Robin the next time you have contact with the SLS office.

Memory and Aging

When adults at any age express concern about their mental abilities, memory is the one ability most likely to be mentioned. Actually, memory is only one of the many different types of mental abilities, including verbal, numerical, spatial and reasoning skills. Concern over possible memory loss is not totally ill founded since clinicians have found that memory loss is one of the earliest indicators of a dementia. Adults suffering from a dementia have difficulty learning new information and often cannot recall a short list of as few as 3 common words.

Psychologists study several different types of memory. There is episodic memory which involves remembering the name of a person to whom you were introduced or remembering a grocery list. Text memory is required in recalling a newspaper article or a book narrative. Working memory is involved in problem solving when one needs to hold in mind several pieces of information in order to solve a task or problem, such as using a bus schedule or filling a pill reminder case with several medications.

Memory complaints often focus on episodic memory - failure to remember a phone number, person's name or a list. Adults from young adulthood to old age complain about this type of memory problem -- the complaints just increase in frequency with age! Findings from the Seattle Longitudinal Study and other research indicate that episodic memory is <u>not</u> one of the forms of memory that shows the earliest age-related decline -- a finding that should surprise and reassure many participants! Reliable decline on episodic memory does not appear until the mid seventies, on average. Also, women at all ages, on average, remember more words in a list than do men. This finding should not be taken to indicate that adults never have problems remembering - a noisy room, medications, or a hearing loss may affect one's ability to learn information and thus ability to recall information. In general, however, it is because reliable decline on episodic memory tasks does not occur in normal nondemented older adults until the 70's, that memory loss in demented individuals is such a powerful indicator of the pathology.

SLS findings do indicate that there are <u>generational differences</u> in episodic memory level. Current generations of young adults are doing better on episodic memory tests than their parent or grandparent generations did when they were at the same chronological age. The reasons for these generational differences in memory performance are not fully understood; increased educational levels across generations may be one factor. Older adults when comparing themselves with young adults might feel like their memory is slipping -- a generational difference, rather than solely age-related decline may be contributing to these negative perceptions.

Recently, SLS researchers have studied whether words in a list differ in their "memorability." That is, as individuals get older, are they able to remember some words more easily than other words in a list? The researchers compared the particular words that adults recalled in a list in the 1984 SLS wave with the words that the same adults recalled in the same list in 1991 -- seven years later. The memorability of words in middle age actually improved with time; middle-aged adults recalled more difficult to remember words in 1991 than they had in 1984. There was no change over the seven-year interval in which words were recalled for adults in their sixties. Adults in their seventies and older were somewhat less likely to recall difficult to remember words as they aged.

Adults at all ages are more likely to remember the first few words in a list (e.g., first five words in a 15-word list) than words later in the list In addition, familiar words (i.e., words commonly used in printed material) are more likely to be recalled by adults at all ages. Finally, words that stood for things that could be easily visualized were more likely to be remembered over time by middle aged adults; for example, "tree" is more easily visualized that "peace," and thus was more likely to be remembered both in 1984 and in 1991 by middle aged adults. These differences in the characteristics of words that are remembered by middle aged versus older adults may explain why certain words are more likely to be remembered in middle age. Whereas older adults use strategies that focus on the first words in a list and the most familiar words, middle-aged adults in addition use a strategy of imageability or visualization to remember words.

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Prescription Medication Use

In 1991 SLS participants were asked to bring to a SLS session all the prescription medications that they were currently taking. Participants were asked why they were taking each medication. SLS Researchers have been studying how many and what types of medications are being taken by participants. We also examined whether participants' description of why they were taking a medication matched with the types of therapeutic categories for which a drug is normally prescribed.

The medications of 1815 adults, aged 22-94 years were examined. The average number of medications being taken by those individuals was 1.68 medications. The number of medications varied by age group. Young adults, on average took less than one drug (mean = 0.65 medications). Middle aged adults took, on average one drug (mean = 1.12); adults in their sixties took, on average 1.94 medications and adults over the age of 70 years took, on average 2.28 medications.

The type of prescription medication most commonly taken were drugs for the central nervous system (e.g., sleeping pills, tranquilizers, anti-depressants, etc.). The next most common type of medication were cardiovascular medications. Women took more medications than men; women, on average, took 1.91 medications compared to 1.35 medications for men. Participants with more than a high school education took fewer medications than those with less than a high school education. Finally, those with lower incomes took more medications. SLS participants report taking fewer prescription medications than found in other studies; this finding may be associated with most SLS participants being members of a health maintenance organization. Prior studies have also found that women, on average take more medications than men and that adults with lower levels of education take more medications.

Older adults take more medications, but do they understand the purpose of the medications? SLS participants were asked the purpose for taking each of their medications. The purpose reported by the participant for taking a medication was compared to the therapeutic drug category for which that medication is routinely prescribed. For example, if a medication is routinely prescribed for cardiovascular disease, did the participant report that he/she was taking the medication for that purpose? We studied whether the participants' reports of the purpose of medications agreed with the drug's therapeutic class. In particular, we studied cardiovascular medications and non-steroidal anti-inflammatory medications, often prescribed for conditions such as arthritis and back/joint pain.

The good news is that the vast majority of participants were correct in reporting the purpose of the medication! Ninety percent of those using a cardiovascular drug and eighty-five percent of those using a non-steroidal anti-inflammatory medication correctly reported the purpose for the medication. What were the characteristics of those participants who were less accurate in reporting the purpose for a medication? Those inaccurately reporting the purpose of cardiovascular medications were more likely to be younger, to be males and to have less income and education. In addition, those who had been taking cardiovascular medications for a longer time period were more likely to understand the purpose of the medication.

With regard to those taking nonsteroidal anti-inflammatory medications, older individuals and those who had been taking the medication longer were more likely to correctly report the purpose for taking the medication. Those taking the medication who were less likely to understand the purpose were younger, had poorer memories and had been taking the medication for a shorter time period. In summary, older adults who had been taking a cardiovascular or anti-inflammatory medication for a longer period of time were more likely to correctly report the purpose of the medication than younger adults who had been taking the medication for a shorter time period.

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Perceptions of One's Work Place

Certain characteristics of the work place have been found to be related to worker satisfaction and may be related to cognitive functioning. The relationship between the characteristics of one's job and cognitive ability is probably *reciprocal*. That is, adults with certain skills are likely to be interested in and recruited into jobs requiring those skills, but also these jobs are likely to further enhance and maintain these abilities. For example, a position that requires one to troubleshoot problems arising in manufacturing or customer service probably requires someone who is flexible and able to take multiple viewpoints. At the same time working in a position requiring this skill also likely increases one's flexibility.

What types of characteristics of the workplace are related to worker satisfaction and perhaps to enhancing cognitive skills? Three characteristics of interest are: **Autonomy**, **Control**, and **Innovation**. Autonomy involves the extent to which an employee is able to make independent decisions and to be self-sufficient in their work. Control involves the extent to which an employee's work is governed by rules, restrictions and strict procedures. Finally, Innovation involves positions that require change, variety and novel approaches.

SLS participants were asked to describe their current jobs in terms of these characteristics - autonomy, control, and innovation. Retired participants described their last job. What were the characteristics of employees that perceived these type of characteristics in their jobs? Interestingly, both younger workers and the oldest workers perceived their jobs to have less autonomy, more control, and less innovation. Employees in the midpoint of their work life reported having the most autonomy and innovation and less controlled. It is likely that young workers had not gained work experience required for positions involving autonomy and innovation. On the other hand, older adults may have been stuck in less challenging jobs at the end of their work life or they may have experienced burnout or disengagement.

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