Relative loss stokes distress in older men

Elderly men who lose a family member other than their wives report considerable increases in emotional distress and depression within six months of the relative's death, whereas elderly women weather comparable losses in good psychological shape, according to a new study. The bereavement hits hardest among widowers who do not belong to a church or temple, the researchers report.

Psychologists Judith M. Siegel and David H. Kuykendall at the University of California, Los Angeles, recruited 825 men and women aged 65 or older from a California health maintenance organization. The majority of volunteers in this predominantly Caucasian sample were married, female, in good health and members of a church or temple. Among the 117 participants who had lost a relative in the past six months, the most common loss was a sibling or sibling-in-law, followed by a nephew or niece, cousin, parent or parent-in-law, uncle or aunt, child, and grandchild.

The researchers measured depression with a questionnaire focusing on the frequency and severity of 20 symptoms during the preceding week, including appetite loss, hopelessness about the future, sleep difficulties, crying spells and feelings of loneliness. Most interviews were conducted by phone.

Overall, Siegel and Kuykendall found that elderly men reporting the recent death of a relative experienced markedly more depression than did men who noted no familial deaths. Moreover, widowers were more depressed by such a loss than were married men, and men who did not belong to a church or temple were more depressed by their loss than were men with church or temple membership, the team reports in the October JOURNAL OF CONSULTING AND CLINICAL PSYCHOLOGY.

The nine recently bereaved widowers with no church or temple affiliation — a measure of social contacts used in the study — suffered the most depression. In fact, each of these men scored above the standard cutoff for clinical depression established with the same questionnaire in studies of the general adult population, suggesting that the emotional distress of grieving substantially interfered with their daily functioning, Siegel says.

All other participants scored below the cutoff, with elderly widows and married women displaying statistically insignificant increases in depression following the death of a relative, she notes.

In light of the new findings, Siegel suggests that churches, temples and community organizations consider developing aggressive outreach programs offering emotional support to widowed men after the death of a family member.

Studies by others of recently widowed adults have indicated that men suffer more emotional problems after the loss of a spouse than do women. The reasons for the gender gap in bereavement remain unclear, but Siegel contends that women apparently have more social ties that help ease distress when a relative dies. Men may have fewer close ties outside their marriage than do women; when widowed, they may also rely more heavily on family members for help with shopping, meals and housekeeping, she suggests.

She notes, however, that her study showed a curious rise in depression scores among married women with no church or temple membership compared with all women who had experienced a recent loss. Perhaps these women anticipate extensive emotional support from their husbands in the wake of a relative's death, only to find that the husbands fall short of those expectations, she speculates.

The California study did not establish how close each participant was to his or her deceased relative. Moreover, Siegel acknowledges that affiliation with a church or temple may reflect spiritual beliefs that ease distress after a loved one's death. Further studies are needed, she says, for a more accurate assessment of social ties among the bereaved elderly.

— B. Bower

Proton spin plays key role in smash hits

Like mass and electrical charge, spin is one of the fundamental properties used to characterize subatomic particles such as protons. High-precision measurements now reveal that a proton's spin seems to have a surprisingly strong effect on the outcome of violent collisions between protons.

"We find that there are very large spin effects in very violent proton-proton collisions, where two protons bounce off each other," says Alan D. Krisch of the University of Michigan in Ann Arbor. "Our data make it quite clear that there are large spin effects . . . where [most theoretical models] had said there should be no spin effects."

The results highlight important details of proton behavior that theoretical physicists cannot yet explain on the basis of quantum chromodynamics, the current theory describing proton structure and behavior. They also confirm earlier experiments that suggested similar spin effects (SN: 7/7/84, p.5).

"These are tough experiments to do," Krisch says. "With our new measurements, we have much smaller errors and many more data points."

At the simplest level, a proton can be pictured as a tiny ball spinning about an axis. Normally, the axes of a collection of spinning protons would point in random directions.

Krisch and his collaborators measured the results of firing a beam of high-energy protons at a special, stationary target in which virtually all the protons are polarized, or spinning in the same direction. "It's a marvelous target," Krisch says. "Its proton-spin polarization — 96 percent for reasons no one yet understands — was the highest level ever achieved in any high-intensity, particle accelerator experiment."

The research, performed at the Brookhaven National Laboratory in Upton, N.Y., showed that when protons having an energy of 24 billion electron-volts smash into a stationary target of polarized protons, about 50 percent more of the incoming protons are deflected to the left than to the right. Theoretical arguments predict that equal numbers should scatter to the left and right. Moreover, as the collision energy increases, any spin effects that exist should become increasingly negligible.

"Our new high-precision data make it difficult to assume that this disagreement between theory and experiment will disappear because the [result] is a statistical fluctuation," the researchers conclude in a paper submitted to PHYSICAL REVIEW LETTERS. "Perhaps one should now try to gain some new theoretical understanding of strong interactions [nuclear forces] that is consistent with this and other large and unexpected spin effects."

Indeed, Krisch argues that proton spin experiments point to serious flaws in current theory. Others disagree.

"Some of the claims . . . that these experiments violate QCD [quantum chromodynamics] are gross overstatements," says Francis E. Close of the University of Tennessee in Knoxville. "They show interesting phenomena, but this is the sort of dynamics that quantum chromodynamic theory isn't equipped to handle yet."

"QCD has many successes, which you can't ignore," adds Charles Y. Prescott of the Stanford (Calif.) Linear Accelerator Center. "The theory's inability to explain the Brookhaven results is a problem for QCD but not necessarily a failure."

The team plans to repeat its proton-scattering experiments at even higher collision energies when a powerful particle accelerator in the Soviet Union is completed in 1993. "We'll be doing the first experiment at the new accelerator," Krisch says. "We'll do exactly what we just did at Brookhaven, first at 400 billion electron-volts, then later at 3 trillion electron-volts." Those experiments should establish whether the unexplained spin effects disappear or persist at higher energies.

— I. Peterson