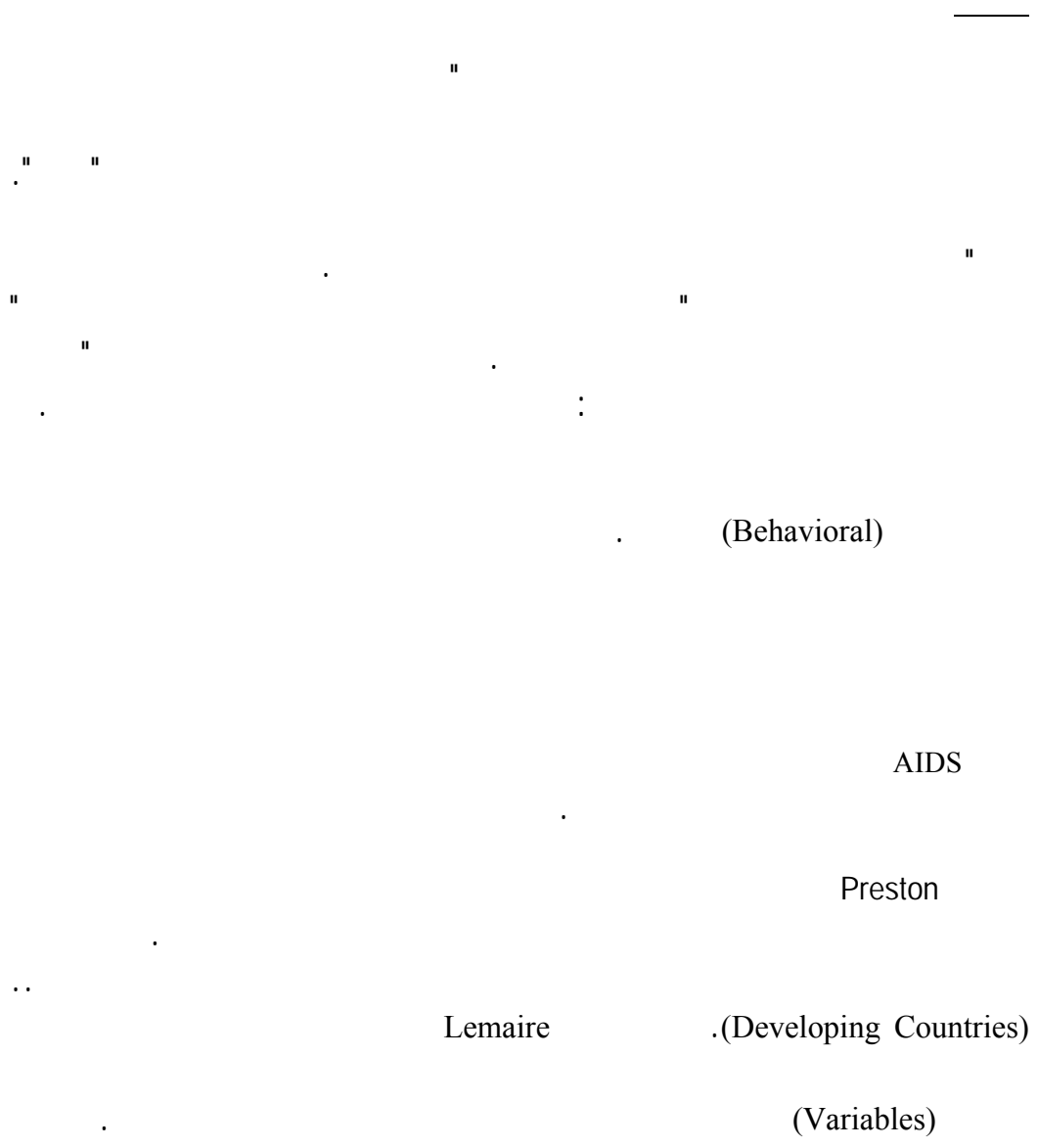


(Why Do Females Live Longer Than Males)

North American Actuarial Journal, October 2002



"Female Advantage"

" () Kalben () Nathanson () Waldron
Kalben "
() Wingard .
"

Advantage

(Madigan & Vance)

"

"

" () Graney

%
 %
 -
 -
 -
 :
 () Nadrajah
 "
 :
 :
 (Genetic) () Graney
 "
 "X" Chromosome "X"
 Defective
 "
 () Waldron
 Androgens
 Testosterone
 Estrogens (LDL)
 "Menopause"
 :
 Hamilton & Mestler
 (Castrated)
 "
 :
 "(Waldron 1991)

"

() Das Gupta Bhat

.

"

"

(Arnoldd Zhaoxiang, 1986)

"

":

.

.

.

:

Menstruation

"

) (Bouverman 1950) Whalebone Corsets

.(

.

"

.

(Bruston, 1976)

.

.

(Lemaire, 2001)

.

"

:

:

.*

.

.*

:"
:

:

.(degree of urbanization)

.

:"
:

:FA

(Fertility)

.(r= -0.6348)

:"
:

.

.

:"
:

.

.

:"
:

"

:

.

:"
:

"

.

FA

:

$$\begin{aligned} \text{FA} = & 9.9042 - 0.4731 \text{ Log (Persons per Physician)} \\ & - 0.4444 \text{ (Fertility)} \\ & - 0.0179 \text{ (\% of Hindus and Buddhists)} \\ & + 4.9218 \text{ (Soviet Union Dummy)} \end{aligned}$$

:

"

.

.

.

.

"

,

.

.

.

.

.

(Indical Medical Association)

"

Sari

"

"

.(Wall Street Journal, May 9, 2000)

"

"

"

.

.(Arnold + Zhaoxiang, 1986) "

:

.

"

"

(Behavioral Factors)

%

.

References

- Arnold, F., and L. Zhaoxiang. 1986. "Sex Preference, Fertility, and Family Planning in China", *Population and Development Review* 12: 221-45.
- Bowerman, W. 1950. "Annuity Mortality", *Transactions of the Society of Actuaries* 2: 76-102.
- Das Gupta, M. and P. N. Mari Bhat. 1996. "Intensified Gender Bias in India: A Consequence of Fertility Decline". Annual Meeting of the Population Association of America.
- D'Souza, S., and L. C. Chen. 1980. "Sex Differentials in Mortality in Rural Bangladesh", *Population and Development Review* 6: 257-70.
- Graney, M.J. 1979. "An Exploration of Social Factors Influencing the Sex Differential in Mortality", *Social Symposium* 28: 1-26.
- Hamilton, J.B., and G.E. Mestler. 1969. "Mortality and Survival: Comparison of Eunuchs with Intact Men and Women in a Mentally Retarded Population", *Journal of Gerontology* 24: 395-411.
- Kalben, B.B. 2000. "Why Men Die Younger: Causes of Mortality Differences by Sex", *North American Actuarial Journal* 4: 83-111.
- Kitagawa, E. 1977. "On Mortality", *Demography* 14: 381-89.
- Lemaire, J. 2001. "Why Do Females Live Longer than Males?" *Belgian Actuarial Journal* 1: 1-9.
- Madigan, F.C., and R.B. Vance. 1957. "Differential Sex Mortality: A Research Design", *Social Forces* 35: 193-99.
- Nadarajah, T. 1983. "The Transition from Higher Female to Higher Male Mortality in Sri Lanka", *Population and Development Review* 9: 317-25.
- Nathanson, C.A. 1984. "Sex Differences in Mortality", *Annual Review of Sociology* 10: 191-213.
- Preston, S.H. 1976. *Mortality Patterns in National Populations*. New York: Academic Press.
- Retherford, R.D. 1975. *The Changing Sex Differential in Mortality*. Westport, CT: Greenwood Press.
- UN Secretariat. 1988. "Sex Differentials in Life Expectancy and Mortality in Developed Countries: An Analysis by Age Groups and Causes from Recent and Historical Data", *Population Bulletin of the United Nations* 25: 65-106.

Waldron, I. 1976. "Why Do Women Live Longer Than Men?" *Social Science and Medicine* 10: 349-62.

Waldron, I. 1985. "What Do We Know About Causes of Sex Differences in Mortality?" *Population Bulletin of the United Nations* 18: 59-76.

Waldron, I. 1991. "Effects of Labor Force Participation on Sex Differences in Mortality and Morbidity", in *Women, Work, and Health*, edited by M. Frankenhaeuser, U. Lundberg, and M. Chesney, pp. 17-38. New York: Plenum Press.

Williamson, N. E. 1973. "Preferences for Sons Around the World". Ph.D. dissertation, Department of Sociology, Harvard University.

Wingard, D.L. 1982. "The Sex Differential in Mortality Rates. Demographic and Behavior Factors", *American Journal of Epidemiology* 115: 205-16.