

# Life-Style and Death Patterns of the Missouri RLDS Church Members

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**Abstract:** Members of the Reorganized Church of Jesus Christ of Latter-Day Saints (RLDS) are dissuaded from the use of tobacco, alcohol, and hot drinks. A well-balanced diet is also stressed. This study compares the 1972–78 mortality experience of the Missouri RLDS with three other population groups. The findings show Missouri RLDS experiencing age-adjusted death rates which are 22.6 per cent lower than rates for Missouri non-RLDS Whites; 19.6 per cent lower than the non-RLDS of Independence, Missouri; and 14.4 per cent lower than Utah residents. The RLDS display lower death rates than the two Missouri comparison groups for each of seven selected causes—particularly lung cancer, pneumonia/influenza, and violent deaths.

Comparisons between the Missouri RLDS and

Utah residents show an inconsistent pattern, with Utah residents having non-significantly lower death rates for lung cancer and ischemic heart disease, but with the Missouri RLDS having significantly lower rates for pneumonia/influenza and violent deaths. These inconsistencies are of interest because 72 per cent of Utah's population belong to the Mormon Church which advocates life-styles similar to the RLDS. If these disparate mortality patterns persist under a more direct comparison between the Missouri RLDS and Utah Mormons, they could provide the opportunity to assess the impact of similar life-styles in separate settings. (*Am J Public Health* 1981; 71:1350–1357.)

## Introduction

Several studies have documented specific religious and social groups as having a significantly lower risk of dying from certain diseases. These groups have been of particular interest due to their distinctive life-style characteristics. The analysis of their mortality experience may lead to identifying personal habits which protect against certain mortality risks or uncovering clues to the etiology of diseases, thereby aiding in the development of sound preventive strategies.

Two such religious groups have been the Mormons in Utah and the Seventh-Day Adventists in California. Both the Mormons and Seventh-Day Adventists display exceptionally low cancer and heart disease rates.<sup>1–6</sup> These groups prohibit the use of alcohol and tobacco among their members. The two religions also stress the importance of well-balanced diets including grains and fruits.

The Missouri members of the Reorganized Church of Jesus Christ of Latter-Day Saints (RLDS) constitute another useful group for analysis. RLDS members are dissuaded from the use of tobacco, alcohol, and hot drinks. This religion also encourages well-balanced diets with whole grains, fruits, vegetables, and moderation in the eating of meat.

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The present study analyzes RLDS mortality differentials for all deaths rather than being restricted to a selected number of causes. The life expectancies and death rates for Missouri resident RLDS members are compared with those of three other groups: 1) non-RLDS White Missourians, since the Missouri RLDS are virtually all White; 2) non-RLDS in Independence, since over 40 per cent of the Missouri RLDS members live in the Independence area; and 3) Utah residents, since over 70 per cent of Utah's population belong to the Mormon Church and thus advocate life-styles similar to the RLDS. These comparisons are restricted to adults 25 years old and older.

## Methods and Materials

### Data Files

A computer tape was prepared which contained all deaths among Missouri residents and all deaths recorded in Missouri from 1972 through 1978. Each of these 371,409 deaths was classified with respect to membership in the RLDS Church.

The determination of RLDS membership was made from the World Church files in Independence, Missouri. When a person becomes a member through baptism (usually at age 8), a record is sent by the local church recorder to the World Church. Information supplied includes name, date of birth, place of birth, parents' name, parents' place of birth, parents' birth date, and other church specific information. The local recorder also updates these records whenever there is a change in status such as name or address change,

marriage, divorce, or death. A person who has moved is not officially a member of the new congregation until his membership has been transferred by the former local recorder to the World Church and then to the new congregation.

If a person is an inactive member, the recorder may not know of the change in address. The move to a new congregation usually is determined sooner or later due to notification by relatives or friends, returned church correspondence, attendance at the new church, or some other means. If a person has moved and the local recorder cannot determine the new address, the person is often placed in a nonresident file of the next higher jurisdictional level called a district or stake.

The Church maintains an annual membership file on computer tape. The tape is updated monthly to add new members, make changes in status, and delete those who have died or left the Church. Although deceased members are not retained on this tape, the Church was able to determine from manual files those who died. This information was used to create a tape of known RLDS deaths for the study period.

#### Identifying RLDS Deaths

Deaths among Missouri RLDS members are identified by a two-stage matching process outlined in Figure 1: a search of a computer tape of all Missouri RLDS deaths reported to the Church from 1972 through 1978; and a search of a Missouri 1978 membership tape to identify any deaths the Church had not yet discovered.

The linking of the RLDS death tape with the Missouri death tape was aided by computer programs which listed each RLDS death together with several possible matches from the Missouri death file. The actual match was then selected through visual inspection and was based on name, sex, and date of birth.

Those RLDS deaths which failed to match with this procedure were searched against an alphabetical listing of all 371,409 Missouri deaths over the 1972–1978 period, in order to check various spellings for last and first name.

The matching process allowed us to identify 2,031 RLDS deaths on the Missouri death file. The unmatched 149 cases of RLDS deaths were returned to the Church for additional identifying information, such as aliases, exact date of death, and the area from which the death was reported; the additional information enabled us to match another 16 cases.

Table 1 documents the reasons for the 133 unmatched RLDS deaths. Several of the deaths on the RLDS tape actually occurred before 1972, and one case was found to have been processed in error. These 50 cases were thus excluded from consideration in this study.

Forty-six deaths were recorded in areas outside of Missouri. These areas were contacted and 45 deaths were positively identified; only one involved a Missouri resident.\*

\*The certificate for this death was filed in Missouri after the official closing date for that year. As a result, this death is excluded from official Missouri counts.

**TABLE 1—Matched and Unmatched Deaths from RLDS Death Tape**

Unmatched Deaths	Number
Died before 1972	49
Processed in error	1
Died out-of-state	45
Insufficient information	28
Apparent misses	10
TOTAL	133
Overall Match Rate	
Matched	2,047
Total possible	2,085
Per cent matched	98.2

This leaves 38 cases unaccounted for: 28 did not appear on the Missouri file under the name contained on the Church records, and there was insufficient information available to determine whether these were out-of-state deaths or occurred before 1972. Another ten cases represented apparent misses. For these cases the Church reported the exact date of death and the Missouri area from which the death was reported; yet, the Missouri file showed no such death record.

In summary, of the 2,085 RLDS deaths having possible matches, 2,047 were identified in the Missouri death file, an overall match rate of 98.2 per cent between the two files.

A 1978 RLDS membership tape was also searched to identify any additional deaths which the Church had not yet discovered. Computer programs, similar to those used with the RLDS death tape, were run to list possible matches from the Missouri death tape. As before, actual matches were selected through visual inspection and were based on name, sex, and date of birth. These procedures revealed another 86 deaths among RLDS members which had not yet been reported to the Church.\*\*

The final results found 2,133 deaths classified as RLDS and 369,273 deaths classified as non-RLDS. The combined total falls three short of the original total of 371,409. This is due to the removal of three duplicates found during the matching processes. Two of the duplicates were found among the RLDS deaths and one among the non-RLDS. The lowest boxes in Figure 1 show the relevant subsets for the study after additional restrictions for age and residence are made for analytical purposes.

#### RLDS Population Estimates

A 1975 Missouri membership tape was obtained from the Church to provide RLDS resident population estimates for the mid-point of the 1972–78 period. Since mid-year estimates were desired, 157 members who died after July 1, 1975 were restored to the population total. Moreover, there were 445 people on the tape with an unknown membership

\*\*There were also 38 cases which had questionable matches with the Missouri death file. Additional information was obtained from the Church to reconcile these questionable matches, and all 38 cases were verified as still living.

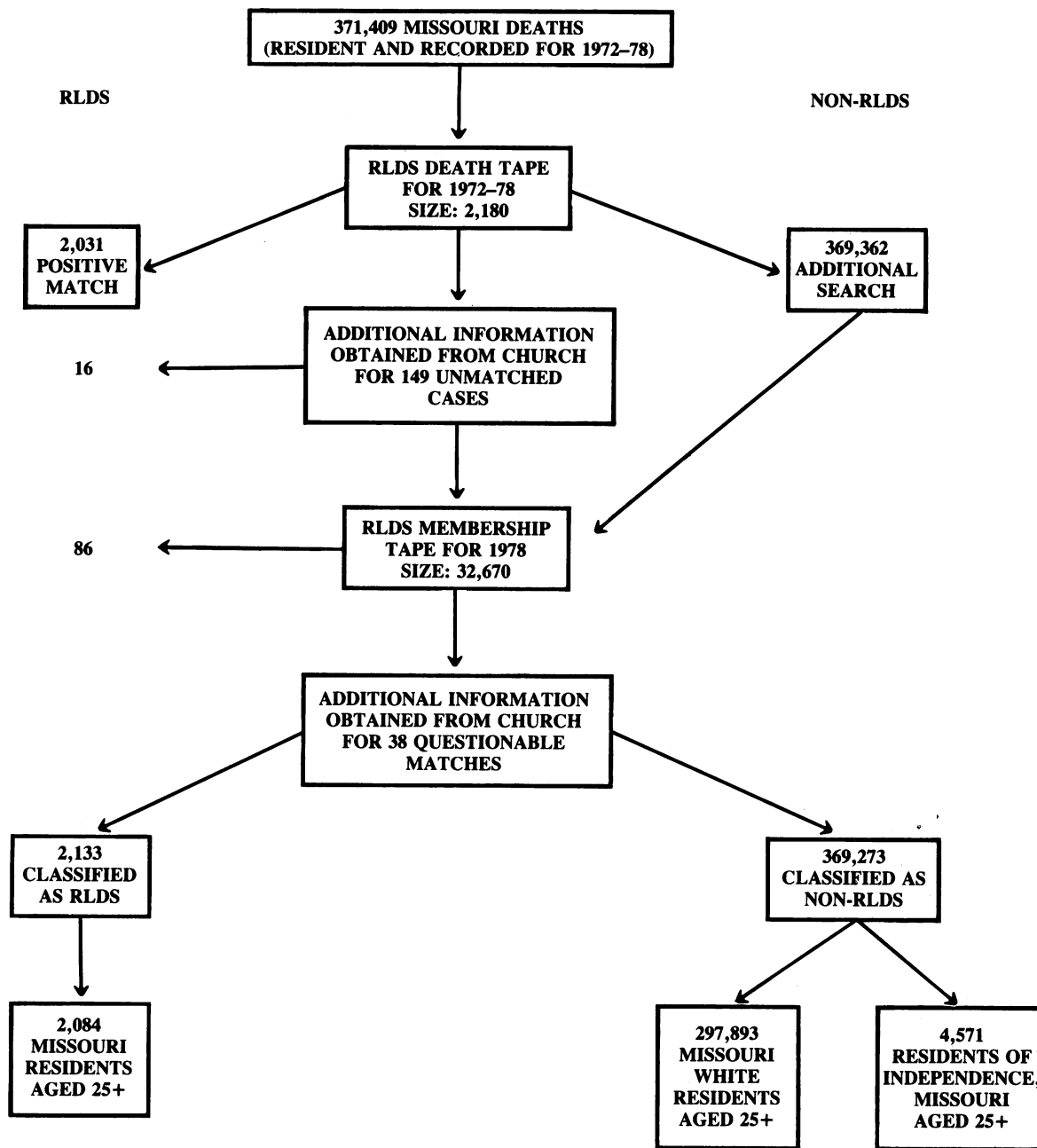


FIGURE 1—Two-stage Matching Process for Identifying Deaths among Missouri RLDS Members

status who were removed from the total in an effort to guard against overstating the RLDS population since they may have moved out of Missouri.

After these corrections were made, the presence of birth date and sex on each membership record allowed the development of RLDS population estimates by age by sex. Similar estimates for Independence were made possible by a congregation identification number on each record.

Table 2 compares those having had their church membership in Independence with those who had resided in Independence for certain 1975 RLDS decedents. It was

found that 90.7 per cent of these decedents both lived and went to church in this city at the time of their deaths. The discrepancies offset one another.\*\*\*

\*\*\*It should be noted that this does not directly measure how well the city of church represents the city of residence for Independence. Table 2 is restricted to deceased Church members and thus does not constitute a representative sample of all members. These comparisons, however, do provide a small measure of confidence in using the RLDS population attending churches in Independence as a proxy for the RLDS resident population for that city.

**TABLE 2—City of Church versus City of Residence for Independence: 1975 RLDS Deaths<sup>1</sup>**

	Number	Per Cent
Church and residence both in Independence	136	90.7
Residence in Independence but not church	7	4.7
Church in Independence but not residence	7	4.7
TOTAL	150	100.0

<sup>1</sup>Missouri RLDS members who died in 1975 but had not been removed from the 1975 membership tape.

### Statistical Comparisons

Life expectancies and death rates for Missouri resident RLDS members are compared with those of three groups: 1) non-RLDS Missouri Whites; 2) the non-RLDS in Independence; and 3) Utah residents.

The analyses are restricted to Missouri residents 25 years of age and older. Overall life expectancies are determined and differences in the relative risk of dying are calculated through ratios of direct age-adjusted death rates with the RLDS rate comprising the numerator and the comparison group rate comprising the denominator. These rates are based on ten-year intervals for age 25–85+ and are standardized to the 1970 Missouri population. The statistical significance of these ratios is determined through the construction of confidence intervals for the ratios of independent rates as outlined by Kleinman.<sup>7</sup> If the interval does not include 1.0, the two rates are significantly different at the 0.05 level.

The Missouri RLDS are virtually all White (only one non-White RLDS death occurred during the entire seven-year study period). Thus, RLDS Missouri resident rates are compared to those of non-RLDS Whites.

Among all Missouri RLDS 25 years of age and older during 1975, 41.1 per cent were members of church congregations located in Independence. Consequently, part of the differences between the RLDS and other Missouri Whites could be a function of geography. The non-RLDS residing in Independence provide a comparison group to protect against this possibility. This comparison group is also similar to the RLDS in racial composition with 98.3 per cent of these deaths classified as White.

The final comparison is made between the Missouri RLDS and Utah residents. Approximately 72 per cent of Utah's population belong to the Mormon Church, and thus are assumed to have life-styles similar to the RLDS. A direct comparison between the Missouri RLDS and Utah Mormons could not be made since mortality data by religious affiliation are not routinely available.

### Results

Table 3 indicates that the average Missouri RLDS member at age 25 can expect to live an additional 53.1 years. This average RLDS life expectancy exceeds that of a Missouri non-RLDS White by 3.2 years. Residents of Independence generally have longer life expectancies than Whites statewide, and this advantage does indeed lower the RLDS life expectancy differential when compared against the non-RLDS of Independence. Yet the differential remains substantial at 2.7 years. The RLDS differential decreases to 1.9 years when compared to life expectancy in Utah.

For both the Missouri non-RLDS Whites and non-RLDS in Independence, the RLDS difference in life expectancy at age 25 is greater for males than for females by approximately one year. This pattern, however, does not hold in the comparison with Utah residents.

**TABLE 3—Average Number of Years of Life Remaining for the Missouri RLDS by Age and Sex with Differences for Comparison Groups 1972–78**

Age (years)	Missouri RLDS Life Expectancy	Life Expectancy Differences		
		Missouri Non-RLDS Whites	Independence Non-RLDS	Utah Residents
<b>Males</b>				
25	49.8	-3.5	-3.0	-1.6
45	31.2	-3.2	-2.9	-1.2
65	15.4	-2.1	-2.3	-0.9
85	5.6	-0.7	+1.0	-0.7
<b>Females</b>				
25	55.9	-2.4	-2.0	-1.7
45	36.6	-2.0	-1.7	-1.4
65	19.3	-1.5	-1.3	-1.3
85	7.0	-1.2	-0.9	-1.7
<b>Total</b>				
25	53.1	-3.2	-2.7	-1.9
45	34.2	-2.9	-2.5	-1.6
65	17.7	-2.0	-1.8	-1.4
85	6.5	-1.0	-0.2	-1.4

**TABLE 4—Age-Adjusted Resident Death Rates<sup>1</sup> per 100,000 (Ages 25+) from Selected Causes for the Missouri RLDS with Comparative Mortality Ratio, 1972–78**

Cause of Death (ICDA 8th Revision)	Sex	Age-Adjusted Death Rates	Comparative Morality Ratios		
		Missouri RLDS	Missouri Non-RLDS Whites	Independence Non-RLDS	Utah Residents
All Causes	Total	1310.8	0.774*	0.804*	0.856*
	Male	1700.5	0.753*	0.769*	0.885*
	Female	1057.3	0.823*	0.854*	0.872*
Malignant Neoplasm All Sites (140–209)	Total	260.4	0.787*	0.729*	1.028
	Male	312.3	0.725*	0.662*	1.007
	Female	228.9	0.875*	0.803*	1.081
Trachea, Bronchus and Lung (162)	Total	40.7	0.520*	0.440*	1.097
	Male	70.5	0.491*	0.418*	1.040
	Female	20.5	0.695	0.528	1.694
Digestive Organs and Peritoneum (150–159)	Total	67.7	0.798*	0.790*	0.956
	Male	83.6	0.802	0.784	0.992
	Female	55.9	0.788*	0.781	0.932
Ischemic Heart Disease (410–413)	Total	509.1	0.826*	0.892*	1.016
	Male	710.3	0.838*	0.890*	1.062
	Female	376.0	0.845*	0.914	1.039
Cerebrovascular Disease (430–438)	Total	157.1	0.816*	0.856*	0.896
	Male	174.7	0.811*	0.837	0.959
	Female	148.1	0.839*	0.879	0.875
Pneumonia and Influenza (470–474, 480–486)	Total	37.3	0.737*	0.861	0.691*
	Male	47.5	0.689*	0.898	0.681*
	Female	32.2	0.834	0.863	0.761
Violent Deaths (E800–E999)	Total	62.8	0.690*	0.815*	0.605*
	Male	100.8	0.741*	0.908	0.687*
	Female	32.3	0.611*	0.699*	0.502*

Note: The actual number of deaths for each group by cause and sex is contained in Appendix Table 1.

1) 1975 population used as base—1970 Missouri population used as standard.

\*Statistically significant at 0.05 level.

The RLDS advantage in life expectancy generally decreases with advancing age, although it remains higher at virtually every age and exceeds those of the two Missouri comparison groups by more than two years until age 65.

The age-adjusted death rates for all causes (Table 4) display the same relationship noted by the life expectancies.‡ The Missouri RLDS experience death rates which are 22.6 per cent lower than rates for Missouri non-RLDS Whites; 19.6 per cent lower than the non-RLDS of Independence; and 14.4 per cent lower than Utah residents.

The RLDS display lower death rates than the two Missouri comparison groups for each of the seven selected causes in Table 4—particularly for lung cancer, pneumonia/influenza, and violent deaths.

The single largest difference in the Table shows that the RLDS lung cancer death rate is 56.0 per cent lower than the rate for the non-RLDS in Independence. Independence is

located in Jackson County which has displayed one of the highest lung cancer mortality rates in the United States.<sup>8</sup> The fact that a sizable proportion of RLDS live in this high risk county serves to emphasize their exceptionally low rates.

The causes of death other than cancer display the now familiar pattern in which the initial difference between the RLDS and other Missouri Whites is reduced when the comparison is restricted to the non-RLDS of Independence; yet the differences remain substantial, with the RLDS having death rates 10.8 per cent lower for ischemic heart disease, 14.4 per cent lower for stroke, 13.9 per cent lower for pneumonia and influenza, and 18.5 per cent lower for violent deaths.

The cause of death information generally shows a consistent pattern by sex for the two Missouri comparison groups, i.e., the RLDS advantage tends to be greater for males than females. The exceptions to this pattern include: cancer of the digestive organs where the RLDS advantage is essentially equivalent for both males and females; pneumo-

‡Data on numbers of deaths shown in Appendix.

nia and influenza among the non-RLDS in Independence; and violent deaths among both groups.

Comparisons between the RLDS and Utah residents are of particular interest because of their inconsistencies. As expected from 72 per cent of Utah's population being Mormon, the overall RLDS is reduced substantially when compared to Utah residents. Yet when specific causes are inspected, these relationships are found to vary.

Most of these mortality ratios by cause are not statistically different from one. The values of the ratios for lung cancer and ischemic heart disease, however, are greater than one. Since the Mormons are known to have rates for lung cancer incidence and ischemic heart disease mortality which are significantly lower from Utah as a whole,<sup>1-4</sup> the actual RLDS-Mormon comparison would undoubtedly produce ratios exceeding those in Table 4. It would thus appear that the Utah Mormons enjoy advantages over the Missouri RLDS with respect to lung cancer among women and ischemic heart disease among men. The RLDS, on the other hand, display much lower death rates than Utah residents for pneumonia/influenza and violent deaths.

### Discussion

Lower RLDS death rates can be artifactual if the number of deaths is understated or the population is overstated. Several precautions were thus taken to ensure against these possibilities.

Even if all the RLDS non-matches are actual Missouri resident deaths which were not found in the multi-staged computerized and manual matching processes, these 1.8 per cent missing could not explain differences in death rates generally exceeding 20 per cent. To protect against overstating the RLDS population, Church members with an unknown status were removed in compiling the estimates. Only 1.4 per cent of the RLDS included on the 1975 membership tape were classified in this manner.

Another confounding factor relates to RLDS members changing their states of residence without the Church's knowledge. It is possible for a RLDS member to move into Missouri and die as a Missouri resident without these changes being reported to the Church. Such a member would not appear on the Missouri RLDS membership or death tapes. The opposite situation could also occur with a Missouri RLDS member changing his state of residence and dying in another state. Such a member could mistakenly remain on the Missouri membership tape.

While the magnitude of these recording problems is unknown, one measure of the quality of the RLDS membership files is the number of deceased Missouri members remaining on these tapes. A large number of these cases would indicate a problem with the Church maintaining updated information on its members. Yet there were only 86 Missouri resident deaths found out of a total of 32,670 on the 1978 membership roll. These 86 deaths represent 4.0 per cent of all identified Missouri RLDS deaths over the 1972-78 period, and over two-thirds of these undiscovered deaths occurred in 1977 and 1978. Thus, from this limited measure,

it appears the Church receives updated information on its members in a timely fashion.

Possible explanations for the lower RLDS death rates include genetic predisposition, environmental influences, socioeconomic factors, and life-style practices.

Some of the comparisons in Table 4 can shed light on these hypotheses. The comparison with the non-RLDS in Independence helps to control for environmental influences since many of the RLDS live in this city. This comparison, however, can only be considered as a crude control measure.

The comparisons with Utah become interesting in view of the genetic predisposition hypothesis. In the nineteenth century, the RLDS and Mormons were united as one religious group and came largely from the same western European stock. This similarity in ethnic background could have contributed to a certain degree of similarity in genetic characteristics between the two groups. With the additional likenesses in life-style habits, there would be reason to expect closely equivalent mortality risks. The comparisons between the Missouri RLDS and Utah residents, however, show an inconsistent relationship.

Perhaps some of these differences could be explained by environmental differences between Missouri and Utah. Utah is slightly more urban than Missouri and also has a mean elevation nearly eight times higher than that of Missouri.<sup>9</sup> Utah's higher altitude could partially explain the lower ischemic heart disease rates among residents of this state. Some evidence has suggested higher altitude exerts a beneficial effect on lowering ischemic heart disease mortality.<sup>10</sup>

The urban-rural difference between the two states does not provide much insight into the other mortality differentials. Rural areas generally have higher rates for accidental deaths, but it is the more urban Utah which displays the higher violent death rate.

Another factor affecting these violent death rates could relate to differences in mileage driven, since motor vehicle accidents comprise a large proportion of all violent deaths. National data from the 1960s have shown that while Missouri has an age-adjusted motor vehicle accident rate lower than Utah, the relationship reverses when the death rate is expressed per 100 million vehicle-miles.<sup>11</sup> This suggests a greater number of miles driven in Utah relative to Missouri.

Some patterns within Table 4 may be influenced by the RLDS life-style. Those causes of death that have been linked with smoking all show the expected relationships between the RLDS and the two Missouri comparison groups. These causes are lung cancer, ischemic heart disease, and pneumonia and influenza.

Other RLDS life-style characteristics could be affecting these mortality risks. The role of alcohol has been demonstrated to be a risk factor for ischemic heart disease.<sup>12</sup> Coffee consumption has also been implicated in stroke and ischemic heart disease mortality.<sup>13</sup> The lower RLDS rates for digestive cancer could be influenced by dietary factors—such as moderation in the eating of meat and inclusion of whole grains, fruits, and vegetables into the diet.<sup>14-15</sup>

Inferences of this type must remain tentative. Church membership is not dependent on adherence to any of these

personal health habits, and the extent to which RLDS members practice them is unknown. Nor is it known the extent to which the non-RLDS in Missouri exhibit these same habits. National estimates on the number of smokers, however, demonstrate that over 60 per cent of adult males and 70 per cent of adult females do not presently smoke.<sup>16</sup> Consequently, differences between the RLDS and non-RLDS do not involve a clean comparison between two separate types of life-styles.

Even if life-style differences exert the major influence on RLDS death rates, it is unclear which specific life-style traits are lowering particular mortality risks. Although there has been extensive study of the role of tobacco and alcohol as risk factors in certain diseases, the role of dietary habits is less well understood.

In addition, it is untenable to suggest that life-style is the only causal agent producing the differences contained in Table 4. There are no data available to compare the average education and income level of the RLDS with the other groups. Differences in environmental influences can only be controlled for in a crude fashion. The question of genetic predisposition can never be adequately addressed in a population-based analysis. There is also evidence that membership in a religious group alone can have a beneficial effect on health.<sup>17</sup> Thus, it is difficult to single out the independent effect of specific personal health habits from the effects of socioeconomic, environmental, and genetic factors.

The present analysis can aid in the generation of hypotheses which could be tested under more tightly controlled conditions and could assess the impact of these various factors through a more direct comparison between the Missouri RLDS and Utah Mormons. The Utah data imply that the Mormons enjoy an advantage over Missouri RLDS with respect to lung cancer among women and ischemic heart disease among men. The RLDS, on the other hand, experience death rates substantially lower than Utah residents for pneumonia and influenza and violent deaths. It remains unclear whether these apparent RLDS-Mormon differences would materialize if the Mormon rates were separated from the Utah total or what characteristics would be associated with these discrepant patterns.

If these patterns persist under closer scrutiny, a unique inquiry could thus be provided by these two groups who are similar in life-style characteristics and ethnic composition but different in residence and various mortality risks.

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## ACKNOWLEDGMENT

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## APPENDIX

TABLE A-1—Resident Deaths (Ages 25+) from Selected Causes for the Missouri RLDS, Missouri Non-RLDS, and Utah, 1972-78

Cause of Death (ICDA 8th Revision)	Sex	Missouri RLDS	Missouri Non-RLDS Whites	Independence Non-RLDS	Utah Residents
All Causes	Total	2,084	297,893	4,571	46,846
	Male	1,004	160,409	2,496	26,215
	Female	1,080	137,484	2,075	20,631
Malignant Neoplasms All Sites (140-209)	Total	400	56,978	1,029	8,035
	Male	188	31,069	550	4,314
	Female	212	25,909	479	3,721
Trachea, Bronchus and Lung (162)	Total	61	13,311	270	1,194
	Male	43	10,496	205	981
	Female	18	2,815	65	213
Digestive Organs and Peritoneum (150-159)	Total	106	14,732	241	2,201
	Male	50	7,457	123	1,166
	Female	56	7,275	118	1,035
Ischemic Heart Disease (410-413)	Total	820	109,031	1,552	14,843
	Male	415	59,696	872	8,853
	Female	405	49,335	680	5,990
Cerebrovascular Disease (430-438)	Total	260	34,538	487	5,004
	Male	99	14,811	207	2,199
	Female	161	19,727	280	2,805
Pneumonia & Influenza (470-474, 480-486)	Total	61	9,072	116	1,533
	Male	27	4,733	53	837
	Female	34	4,339	63	696
Violent Deaths (E800-E999)	Total	96	15,671	278	3,821
	Male	66	10,470	193	2,610
	Female	30	5,201	85	1,211

### CPHA Annual Conference and Call for Abstracts

The 73rd Annual Conference of the Canadian Public Health Association will be held June 21-24, 1982 at the Explorer Hotel, Yellowknife, Northwest Territories. "Hurdles to Health" is the theme for the meeting. The theme in its three parts—Environment, Lifestyle, and Heredity—will allow the opportunity to examine the impact of these three hurdles on health in Canada and North of 60°, to review present approaches, and to seek new solutions to these long-standing problems.

Abstracts relevant to the theme of the conference other than the three parts, "Environment, Lifestyle and Heredity," will be considered by the Conference Committee. Abstracts must not exceed 200 words, including title, author(s) name(s), institutions, and location. Send one original plus five copies of the abstract. Papers in English or French will be accepted. Scientific presentations will be limited to 10 minutes each, with an additional 10 minutes for discussion.

Abstracts should be submitted by December 31, 1981 to:

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