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The present investigation was concerned with the study of menarche and its relation to demographic factors and religious awakening. The source of information about menarche was also considered.

Five hypotheses were postulated. They are as follows:

1. There is no difference between the age of menarche and the climatic conditions in which the girls were reared.

2. There is no difference between the age of menarche and the seasonal rhythm.

3. There is no difference between the age of menarche and the places of residence of the girls.

4. There is no relationship between the parents as sources of information received by the girls about menstruation and the persons as the source influencing conversion.

5. There is no relationship between the age of the girls' conversion and their age of menarche.

The subjects consisted of 629 questionnaires obtained in the spring of 1968 from white female college students enrolled in the freshman and sophomore physical education classes at Bob Jones University, Greenville, South Carolina.

Data from the questionnaires were punched on I.B.M. cards and computed to obtain totals, percentages, and averages.

Pearson product-moment coefficients of correlation were computed to show the relationships posed in the five hypotheses.

The conclusions drawn were as follows:

1. There was no relationship between the girls' ages at menarche and the climatic factors of the regions from which they came. A coefficient correlation of 0.01 supported the hypothesis.

2. The average age of the 395 girls who recalled the exact date of menarche was highest for those who had their first menses in January (13.1 years) and lowest for those who experienced menarche in July (12.4 years). The greatest number of the girls reached menarche in the summer. A correlation coefficient of -0.02 supported the hypothesis.

3. There was no relationship between the girls' menarche and the place of their residence in large cities, small towns or farms. With a correlation of -0.02, the hypothesis was supported.

4. No relationship existed between the girls' sources of information about menarche and the sources influencing their conversion. Sixty per cent of the information about menarche was received by the girls from their mothers. The coefficient correlation of 0.11 was significant. The level of confidence was .05 per cent.

5. The average age of menarche of 629 girls from the various regions of the United States was 12.34 years. A coefficient correlation of .16 was found between the 326 girls who reported both the exact age of menarche and the age of conversion.

A STUDY OF MENARCHE AS IT RELATES
TO AGE AND CERTAIN GEOGRAPHICAL
FACTORS

by

Gertrude Mae Fremont

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CHAPTER I

THE PROBLEM

Interest in the menarche as a criterion of female pubertal development was mentioned in literature two-thousand years ago; however, it has been only in the last one-hundred years that the age of menarche and the associated factors affecting it have been given serious study. Starbuck (1901) reported two studies of menarche of American women that were done by Roberts and Kennedy in 1885. The average age of menarche was 14.7 years in Roberts' study of 575 girls and was 13.7 years in Kennedy's study of 125 girls. Englemann (1902) was one of the first investigators to study extensively menarche in North American women. His comprehensive study of nineteen thousand women in the early 1900's set the stage for further research into this area. In his study in 1900 Englemann found the average age of girls' first menses to be 13.8 years and he referred to such influencing factors as temperature, climate, race, nationality and the social and educational classes.

From the research reviewed it seemed that in the last sixty-five years the average age of menarche for girls was lowered from 14.7 years (Starbuck, 1901) to 12.4 years (Golub, Menduke, and Lang, 1963; Larsen, 1965). Better

diets, improved environments and heredity appear to be contributing factors according to Greulich (1944).

From the early part of the century, the literature on adolescence seemed to indicate that conversion also might be related to the age of adolescence and more specifically to the age of puberty. Hurlock stated around the turn of the century that "it was formerly believed that religious awakening was a function of pubescence and grew out of the sexual impulse. Both . . . came at approximately the same time." She further stated "there is no evidence to show that the relationship is one of cause and effect (1967, p. 395)." Related studies by Starbuck at approximately the same time suggested a spiritual awakening period often followed the menarche. It is with some of these questions in mind that the following study was undertaken.

Objectives

The primary objective of this study was to determine the relationship between menarche and such factors as ages of the girls and their place of residence. Also of primary concern was the girls' age of menarche as it relates to their age of religious awakening.

A secondary objective was to determine the source of the information that these girls receive about menarche and to determine the instrumental factors leading to their conversions.

Limitations

The subjects for the present study were white female students enrolled in the physical education classes of Bob Jones University during the spring semester from January 1968 to May 1968. Girls, only, were considered since they have a definite discernible criterion, the menarche, to determine the time of reaching pubescence. All of the participants in the survey experienced religious conversion prior to filling out the questionnaire, and only those who could remember a time of conversion were used in the study. Since Bob Jones University is a Christian non-denominational school taking the fundamentalist position, conversion is an experience which has meaning and significance in the minds of its students.

Definitions

For this study the following definitions have relevance:

Adolescence. The period from the beginning of puberty to the attainment of maturity. It is that time during which the individual develops in physical and psychological functions. It is both a span of time and a way of life.

Puberty. The period during which the reproductive organs become capable of functioning and the person develops secondary sex characteristics. For the female its onset is marked by the beginning of menstruation.

Menarche. The first menstruation in the human female.

Religious Awakening. A period of increased interest in religion sometimes resulting in a change of attitudes and beliefs.

Conversion. A decisive turning from sin to God by recognizing and admitting one's sinful condition and making a decision to accept Christ as personal Saviour.

Basic Assumptions

The investigator assumes that for girls menarche is an event of such significance that the date can be recalled at a later time.

Menarche is one of the physical changes which occurs at the onset of puberty.

Certain recognizable factors contribute to the time of the first menarche.

Conversion is an event of such significance that the date may be recalled.

Hypotheses

The hypotheses of this study are as follows:

1. There is no difference between the age of menarche and the climatic conditions in which the girls were reared.

2. There is no relationship between the average age of the girls' menarche and the seasonal rhythm.

3. There is no difference between the age of menarche and the places of residence of the girls.

4. There is no relationship between the parents as sources of information received by the girls about menstruation and the persons as sources influencing conversion.

5. There is no relationship between the age of the girls' conversion and their age of menarche.

CHAPTER II

REVIEW OF LITERATURE

One of the primary marks of the beginning of adolescence is the beginning of puberty or sexual maturing. At puberty the reproductive organs begin to reach functional maturity. In girls this reaching of maturity is marked by menarche or the beginning of menstruation. It is not true that girls reaching menarche are able to conceive. Kinsey (1953) reported that there was a considerable body of data indicating a period of adolescent sterility following menarche with ovulation occurring only sporadically, if at all, during the first few years after the menarche. Menarche is merely a convenient line of demarcation indicating a significant beginning and is a useful discernible tool in classifying girls as either pre-pubescent or pubescent.

Interest in the menarche as a criterion of development was first mentioned by Hippocrates and Aristotle. They both agreed that fourteen was the year in which menarche was most frequently reached (Dennis in Carmichael, ed. 1960). However, few scientific studies of the menarche were conducted until the early 1900's. Horrocks (1960) reported some early studies on puberty in women done by a group of Frenchmen during the first half of the nineteenth century.

He stated that Robertson in England was the most prolific writer on the subject and published comparative data on the advent of puberty in various cultures. In 1831 Robertson established by direct questioning the advent of puberty in a large sample of women and found the average age of menarche to be 13.7 years with a range from 11 to 20 years of age.

Englemann (1902) in a review of early studies before 1900 reported that Robertson's work in England was followed by work of de Boismont in France, 1842, and Krieger in Germany, 1869. He also reported that the question of the time of puberty was one of the leading questions elaborated upon at the International Medical Congress of Paris in 1867 and Emmet was one of the first investigators to study American women.

Starbuck (1901) referred to two American studies made in 1885 by Roberts and Kennedy. Starbuck also reported a study of 119 girls whose average age of menarche was 13.8 years. Roberts found the average age of menarche in 575 cases to be 14.7 years with the year of the greatest frequency at 14. Kennedy reported the average age of menarche to be 13.7 years in 125 cases of American girls. Starbuck concluded that American women had an earlier menarche than the European stock from which they had sprung. He further concluded that the mothers' average age of menarche on this continent was 14 years and the average age of menarche in Europe was 15.5 years (Starbuck, 1901).

Englemann (1902), one of the early men to study the subject of menarche in America, published the results of his collection of data on 19,404 North American women, including 1,048 Indians and Eskimos. His study represented various phases of temperature and climate, various races and nationalities, and various social and educational classes.

In the United States Englemann (1902) studied 2,734 school and college girls and found the mean age of menarche to be 13.8 years. In another study of 1,360 college girls the mean age of menarche was 13.5 years. Popenoe (1928) studied 351 young women and ascertained that 13.2 years was the mean age of menarche. Gould and Gould (1932), in their study of 1,037 women from Louisiana, found the mean age of menarche to be 13.7 years. At the University of Cincinnati a study by Mills (1937) reported the mean age of menarche of the 1,069 university freshman girls studied from 1930 to 1935 was 13.3 years.

In a 1940 study (Ito, 1942) of 2,138 white girls at Los Angeles City College, it was reported that the mean age of menarche was 12.9 years. Kinsey (1953) found the mean age of menarche of 3,292 college women to be 13.00 years. A more recent study of 298 junior high girls in Philadelphia by Golub, Menduke and Lang (1963) ascertained the mean age of menarche to be 12.4 years. Four-fifths of the girls reported their menarche was between 11 and 13 years.

Larsen (1965) in a study of college students and their

source on menstrual information found the mean age of menarche of 261 students was 12.4 years. It appeared from the data presented that in the last eighty years the average age of menarche of American white women has been lowered from 14.7 years as determined by Roberts in 1885 (Starbuck, 1902) to 12.4 years as found in Larsen (1965). A summary of the comparison of the ages American women reached menarche is presented in Table 1.

TABLE 1
MEAN AGE WHEN WOMEN REACHED MENARCHE

INVESTIGATOR	REGION	DATE	NO. OF CASES	MEAN
Roberts	United States	1885	575	14.7
Kennedy	United States	1885	125	13.7
Starbuck	California	1897	119	13.8
Englemann	North America	1902	2,734	13.8
Popenoe	United States	1928	351	13.2
Gould & Gould	Louisiana	1932	680	13.6
Univ. of Cincinnati		1930-35	1,069	13.3
Haffner & Ito	Los Angeles City College	1940	2,138	12.9
Kinsey	United States	1953	3,292	13.0
Golub, Menduke & Lang	Philadelphia	1963	298	12.4
Larsen	Washington	1965	261	12.4

Better diet, improved environments, and heredity seemed to be contributing factors in this earlier development of the girls' menarche (Greulich, 1944). Warm climate was thought to be a prime factor, but as far back as the middle of the nineteenth century Roberton's (Horrock, 1960) studies later verified by Meuller in 1932 of Javanese girls (Greulich, et. al., 1938) indicated that factors in nutrition and a generally favorable environment rather than climate were the decisive factors for an early menarche. Englemann (1902) in his extensive study observed absolutely no effect upon the time of pubertal development which might be ascribed to climatic influence. Novak (1931) in summing up the studies on climate and its effect on the time of menarche mentioned significant statistics from several studies including Englemann's 624 cases from the Arctic zone where the average age of menarche was 14.6 years, compared to Campbell and Roberton's study of 1,593 cases in the tropics where the average age of menarche was 15.8 years. Fluhmann (1936) indicated that a consideration of reports from many localities failed to produce convincing evidence that climate has any significant effect on menarche. Mills (1937) was one of the researchers who indicated that climate might have an effect on menarche. He stated that in tropical warmth menses does not begin earlier than in the cooler temperate regions but that growth and pubertal development are most accelerated in the stimulating, stormy, temperate

regions and were most retarded in the moist heat of the tropics. He concluded "that no where on earth do girls mature so early as they do in the central part of North America (Mills, 1937, p. 56)." Greulich, (1944) in his review of the literature concluded that climate had little effect on the age of menarche. Greulich stated that a considerable body of evidence indicated that good nutrition and a generally favorable environment tend, within limits, to hasten menarche and that, conversely, an inadequate diet, severe illness, or other unfavorable environmental conditions tend to retard it.

The writer was able to find only one study done in North America which related to menarche and months and seasons of the year. Engle and Shelesnyak (1934) studied 250 girls in a New York orphanage. Of the 250 girls, 74 or 29 per cent of the girls experienced menarche during the winter months while only 45 or 18 per cent of the girls experienced menarche during the summer months. These figures demonstrated a seasonal incidence in the onset of the first menses. The average age of menarche was 13.53 years with an extreme range of 11.04 years to 16.31 years.

Valsik (1965) in a review of foreign studies on seasonal rhythm of menarche concluded that the "location of the dwelling place and particularly its elevation above sea level, affects the seasonal rhythm of menarche." Girls in the cities and from high mountainous areas tend to show a

winter peak of menarche while girls from the country and low lying areas show a summer peak of menarche. "The climatic factor is not very important for the frequency curves for large cities are in good agreement despite their lying in different climatic regions (Valsik, 1965, p. 87)." The same was also true for the rural areas. The place of residence of the girls in elevation above sea level was important since the median age of girls at menarche increased at the rate of approximately three months for every hundred meters of altitude. Valsik further stated that "the difference in the age of girls has undoubtedly some effect on the date of menarche, younger girls commence more often in the first half of the year, the older girls more frequently later (1965, p. 87)." Although the above review was of European studies it yielded information similar to the Engle and Shelsnyak (1934) study on place of residence, that is, girls from the city tend more frequently to experience menarche in the winter months.

Lintz and Markow (1923) in a study of 800 women concluded that environment (city or farm) had little influence on the age of menarche. The average age of menarche was 13.5 years for girls from farms, small towns and medium-sized towns. Fourteen years was the average age for those girls from the large cities. Gould and Gould (1933) advanced the idea that city girls matured earlier than girls from the rural areas. Mills (1937) also indicated that city girls matured earlier than rural girls.

Heredity was also indicated as a causative factor in the variations in the menarche. Fluhmann, in a review of studies on this factor, reported:

An observation which seems to have been authenticated both in Europe and the United States is that daughters of the present generation have an earlier menarche than their mothers. This is particularly of interest in view of the relation of the onset of menstruation to general body growth, and the finding of Boas that the stature of the children of 1921 was increased over that of the children of 1888. These studies also demonstrate that a tendency of the mothers to menstruate early or late is repeated to some extent in the offspring, and are thus in keeping with the contention that the age of attainment of puberty is hereditary character. . . . (Fluhmann, 1936, p. 374).

In 1928 Popenoe reported that 200 mothers had an average age of menarche of 13.6 years and their 351 daughters had an average age of menarche of 13.2 years. The correlation between mothers and daughters was 0.40 and between sisters in the same family was 0.39.

In 1932 a study was made of the age of first menstruation of 357 mothers and their 680 daughters. All the participants were chiefly from Gulf Coast states and the daughters were students from Louisiana State University and Newcomb College in Louisiana. Gould and Gould (1932) reported that the average age of the mother's menarche was 13.99 years and the average age of the daughter's menarche was 13.61 years. There was a general tendency to the effect that the mother's early or late menarche was repeated in their offspring.

The age of reaching menarche is variable, dependent upon many factors, but the general averages in the various studies indicated a continuing earlier menarche with each generation. The reports of the studies indicated that improved nutrition and a generally favorable environment are the main factors affecting the earlier onset of menarche.

The sources of information about menstruation have been reported in several studies. Angelino and Mech (1955) in a study of 67 college women on first sources of sex information reported that 48 respondents or 70 per cent received information about menstruation from their mothers. They did not receive any information from their fathers. It was ascertained that peers provided information for 14 girls or 20 per cent. Larsen (1961) questioned 732 females including girls and women of various ages. Respondents were divided into three age groups: those under twenty years who comprised two-fifths of the total, those twenty to thirty-nine years, who comprised approximately one-third of the total group, and those forty years and over who made up one-fourth of the group. Mother was the principal source of information in all three groups, and her importance increased with the younger generation. Of the teenagers, 84 per cent received their information from their mothers, as compared with 68 per cent of the two older generations. In the younger group, 15.6 per cent received their information from peers, and 15.6 per cent received their information from

classes and informal groups. Teaching films provided the source of information for 14.3 per cent. Resource people (teachers, M.D.'s and R.N.'s) provided 12 per cent, and books and pamphlets provided 11 per cent of the source for menstrual information.

Henton (1961) in a study of 133 white girls reported 76 per cent received information from their mother. Calderwood (1963), reporting on a study of ninth grade boys and girls of 24 families in a family life course indicated that the girls took the "facts of life" matter-of-factly; the girls' communication with their parents was advanced; and discussing sex with their mothers was fairly easy. In a later study of 261 female college students Larsen (1965) reported that 222 girls or 85 per cent of those responding to the question received their information about menstruation from their mothers. The source of information for 52 girls or 20 per cent was provided by the peers. Nineteen girls or 7.2 per cent received their information from classes and informal groups, nine girls or 3.4 per cent from books and pamphlets, eight girls or 3.0 per cent from resource people and seven girls or 2.7 per cent from siblings and other relatives.

From a study of 110 high school boys and girls who attended a conference in Detroit, Couch (1967) found that most of the participants thought that a parent or at least someone "very close, like a brother or sister," should be

the first to impart to children information about sex and reproduction. Kirkendall and Calderwood (1967) listed some generalizations about sources of information and stated that girls obtained more sex education, which included menstrual information, from parents than did boys and more information from mothers than from father.

Speculation as to the relationship of conversion and puberty arises because conversion has been found to occur most frequently during the adolescent period. The average age of conversion seems to parallel very closely the attainment of pubescence. Hall, in 1881, first advanced the idea that adolescence was the prime age of conversion. He wrote:

I know of no attempt to demonstrate that adolescence was the age of religious impressionability in general, and of conversions in particular, prior to the second of twelve public Harvard lectures which I gave in Boston, February 5, 1881 which was in good part based on data I had collected by correspondence, by study of the records of the Fulton Street (New York) noon prayer-meetings, and upon the analogy between the changes normal at this age and these specific religious experiences. This conclusion was briefly restated in an article printed some two years later in the Princeton Review (Hall, 1904, p. 292).

Hall had correspondence with some of the leading evangelists at the end of the nineteenth century and he reported that D. L. Moody believed that most conversions of young people in his revival meetings occurred between the ages of ten and twenty with no difference in age between the sexes. Hall further stated that other evangelists and Christian workers of the time gave similar reports including the fact that the

large majority of Methodist ministers were converted before age eighteen (Hall, 1904).

Specific scientific studies on conversion were first done at the end of the nineteenth century. Starbuck (1901), one of Hall's students, made a thorough study of conversion. In a study of women attending two W.C.T.U. conventions in California in 1897, Starbuck found 254 cases in which individuals could accurately date their ages of conversion. In charting these ages of conversion from five to 25, he found a rise in frequency starting at age ten with peaks at thirteen and sixteen and an average age of 14.7. Starbuck concluded:

Conversion does not occur with the same frequency at all periods in life. It belongs almost exclusively to the years between 10 and 25, the number of instances outside that range appear few and scattered. That is, conversion is a distinctively adolescent phenomenon . . . One may say that if conversion has not occurred before 20, the chances are small that it will ever be experienced (1901, p. 28).

In another of the conclusions of his study he stated:

We may safely lay it down as a law, then, that among females there are two tidal waves of religious awakening at about 13 and 16, followed by a less significant period at 18 (Starbuck, 1901, p. 34).

In 1923 Athearn directed a comprehensive analysis of the religious education of Protestants in Indiana. One of the studies entailed sending questionnaires to 3000 churches in each of five religious denominations, namely: Methodist-Episcopal, Baptist, Congregational, Presbyterian and Disciples. Names were secured of 6,194 persons who had

joined the church during a twelve-month period from December 1, 1920 to November 30, 1921. The names were secured from forty-three states in the union. There was a total of 3,488 females responding from age five to ninety-five. The median age of the females joining the church was 14 years, the mode 13 years and the mean 18.05 years. Using only 2,814 females between the ages of 5 and 24.90 years, the median was 13 years, the mode 13 years and the mean 13.6 years. Athearn (1923) also studied 2,072 Indiana Sunday School teachers. Of the 1,207 females in the study the median age for joining the church was 14.4 years. The most frequent ages were 12, 13 and 14 years. It should be noted that church membership is not synonymous with conversion; however, fifty years ago conversion was concurrent with church membership in most churches.

In 1929, Clark found in his study of the "religious awakenings" of 769 females that the average age of conversion was 11.94 years, with the modal peak at twelve years. The above total contains three types of experience, the definite crisis type, the emotional stimulus and the gradual awakening, with the latter type being predominant. The average age of conversion of the thirty-one definite crisis-type cases was 14.3 years.

In a study of 5,000 college students in Christian colleges from all parts of the nation, McQuilkin (1953) found the average age of conversion for both boys and girls

from non-Christian homes to be sixteen. Approximately ten years was the peak age for those students from Christian homes. The study did not report the average for females or a combined average.

In a study done in the South, Drakeford reported:

A survey of adult leaders in the Southern Baptist convention showed the average age of conversion to be 13.2 years for women Observations by professional workers in Southern Baptist churches lead them to believe that most conversions take place in the 10 to 11 year age bracket (1964, p. 260).

Personnel in the department of a Billy Graham Crusade held in 1965 reported the following: "The age of puberty does reflect a relatively high percentage of conversions. Of the females who went forward in the crusade meeting, twenty-four per cent were in the 12-14 year age bracket (Communique, 1965)."

From the above studies the indications are that early adolescence is a time when frequency of conversion is very high. The reduction in the average age of conversion from 1900 to the present may be significant when compared with the average age of pubescence. Starbuck (1901, p. 45) noted that "conversion and puberty tend to supplement each other in time, rather than coincide, but they may, nevertheless, be mutually conditioned." In his detailed study of 119 conversion cases that could accurately pinpoint the time of their menarche Starbuck found that the average age of menarche was 13.8 years. Twenty-eight persons were converted before the

year of menarche, sixteen were converted during the year of menarche, and sixty-one were converted after the year of menarche. Starbuck (1901, p. 44) wrote: "In the case of females conversion occurred almost twice as often after puberty (13 years)." From his data on growth he concluded that the similarity between the height, weight, and conversion figures "suggests the law which we shall hold tentatively that during the period of most rapid body growth is the time when conversion is most likely to occur (1901, p. 38)."

Clark (1929) indicated that conversion was only a part of the general adolescent ferment which accompanied the biological changes of puberty. He found that no causal relationship had been established between puberty and conversion. Ferm (1959) suggested that although adolescence is a period of great susceptibility to religious conversion, it is not necessarily a phenomenon of adolescence. The available literature indicated that there is little relationship between conversion and menarche although conversion frequently does occur around the time of menarche.

CHAPTER III

METHODS AND PROCEDURES

A result of contact with adolescents over a period of ten years caused the researcher of the present study to become interested in the subject of menarche and its relation to conversion and certain demographic factors. The pubertal period represents an important period in the life of adolescents and menarche in the female represents a significant event at this time.

The Subjects

The data for this study were obtained in the spring of 1968. The subjects were made up of a group of North American white females enrolled in the freshman and sophomore physical education classes of Bob Jones University in Greenville, South Carolina. The age range of the girls when the questionnaire was administered is presented in Table 2.

The range of ages of the 629 girls responding to the questionnaire was from 17 years to 25 years with 565 girls of 89 per cent in the 18, 19, and 20 year age bracket. Six girls or .93 per cent were 17 years of age and six girls or .93 per cent were 24 and 25 years of age.

The girls were from 45 of the 50 United States. Arkansas, Montana, Rhode Island, Utah and Vermont were not

represented. The ten states with the greatest number of respondents were Pennsylvania 59, Ohio 58, Michigan 52, Florida 37, California 35, Indiana 34, South Carolina 33, Illinois 30, New York 30, and North Carolina 30. Fifty-six of the girls were enrolled in the School of Fine Arts, 88 in the School of Business, 299 in the School of Education, 73 in the School of Religion and 107 in the School of Arts and Sciences.

TABLE 2
AGE RANGE OF GIRLS BY NUMBERS AND PER CENT

AGE	NUMBER OF GIRLS	PER CENT
17	6	.93
18	176	27.80
19	261	41.14
20	128	20.34
21	32	5.00
22	15	2.26
23	11	1.70
24	4	.62
25	<u>2</u>	<u>.31</u>
	629	100.00

The Questionnaire

A questionnaire (Appendix A) was developed to obtain

information about menarche and its related factors. In order that the questionnaire be inclusive, concise and clear, several questionnaires were studied. The questionnaire used by Roy B. Zuck and Gene A. Getz (1967) for general background information of youths being studied was evaluated for response items. The questionnaire in relation to sources of information about menarche used by Virginia Larsen, (1961) a physician, was studied and gave some usable ideas for the formulation of the questionnaire for the present study. From these questionnaires and literature read, the present questionnaire was organized and compiled. The questionnaire was formulated so that the respondent through the process of recall might make a single choice by checking the selected response. The accuracy of recalled age of menarche has been studied by Livson and McNeill (1962). They studied 43 women who, at the age of thirty recalled the menarche and for whom the actual age was contemporaneously recorded. They concluded that the findings of one-half a year of underestimation was solely a by-product of whole-year reporting, and did not indicate an error in recall. Both menarche and conversion are of such significance that accurate recall should have been possible in the majority of respondents.

The questionnaire used in this study was pretested and revisions were made. For the pretest, the compiled questionnaire was administered to 26 girls in a college

junior child development class at Bob Jones University. None of these girls were in the group used for the present study. After an evaluation of the responses to the questionnaire answered by the students minor changes were made. It was then ready for use.

After the questionnaire was ready, contact was made with the chairman of the girls' physical education department. With the chairman's permission to administer the questionnaire, arrangements were made with the individual instructors.

The questionnaire was administered to 641 women students. Twelve questionnaires were not used because they were not filled in correctly. The remaining 629 questionnaires were used in this study. The females were instructed to state their exact age of menarche, if they were able to remember the exact date, as well as to check their approximate age at the time of menarche. Of the total 629 females in the study, 395 remembered the exact age of menarche. The same instructions were given for the question about the age of conversion. There were 326 girls of the total 629 respondents who reported both an exact age of menarche and the exact age of conversion on the same questionnaire.

The information from the questionnaires was punched on I.B.M. cards and run through the sorter and computer to obtain tabulations of totals, percentages and averages.

Information about the home states was divided into four regions: East, Midwest, South, and West. Information

about the age of experiencing the first menstrual period was given in years and months by those who knew the exact age of menarche. The month of the year when menarche occurred was determined by adding the exact number of months to the birth date. The months were then divided into seasons: winter (December, January, and February), spring (March, April, and May), summer (June, July, and August), fall (September, October, and November).

Pearson product-moment coefficients of correlation were computed on the five hypotheses, age of menarche, and climatic conditions as found in the four regions of the United States, age of menarche and seasons, age of menarche and places of residence, persons providing sources of information about menstruation and persons influencing conversion, and age of menarche and age of conversion.

CHAPTER IV

FINDINGS AND DISCUSSION

The data of menarche and its relation to age, climate, seasons, regions, places of residences and religious awakening were secured from questionnaires administered to 629 white female college students enrolled in the freshman and sophomore physical education classes at Bob Jones University. The objective of this present study was to ascertain the relationship between the age of menarche and the factors of climatic conditions in which the girls grew up, the seasons of the year, the place of residence of the girls, and the age of conversion. The relationship between the sources of information about menarche and the sources influencing conversion was also studied. Additional information was asked for in the questionnaire. It will be analyzed and reported later. Specific data related to the five hypotheses were as follows:

Hypothesis 1. There is no difference between the age of menarche and the climatic conditions in which the girls were reared.

The total number of respondents was divided into four commonly accepted geographical regions. (Table 3). The average age of menarche for 629 girls who checked their

approximate age within one year for each region was computed as follows: East, 138 girls (21.84 per cent), 12.35 years; Midwest, 224 girls (35.76 per cent), 12.37 years; South, 192 girls (30.76 per cent), 12.32 years; West, 75 girls (11.89 per cent), 12.21 years (Table 3).

TABLE 3
AVERAGE AGE OF GIRLS' MENARCHE BY NUMBERS,
PER CENT, AND GEOGRAPHIC REGIONS

REGIONS	AVERAGE AGE OF MENARCHE	NUMBER OF GIRLS	PER CENT
East	12.35	138	21.84
Midwest	12.37	224	35.76
South	12.32	192	30.51
West	12.21	<u>75</u>	<u>11.89</u>
All Regions	12.34	629	100.00

The coefficient of correlation of -0.01 was low, indicating little relationship; therefore, the hypothesis is accepted since there is a variation of no more than two months between the west and the other three regions. It was interesting to note that since the average age of menarche in the three regions was much the same, the girls in the west matured slightly earlier--two months--than the girls in the other regions. Thirty-five of the 75 girls from the western region were from California, which boasts of "ideal"

weather conditions. The average age of menarche of the 35 girls from California was 11.88 years. The studies presented in the review of the literature denoted that climate had little or no effect on the age of menarche and the present study agreed with these studies. Mills concluded from his studies on climate that "nowhere on earth do girls mature so early as they now do in the central part of North America (1937, p. 56)." The present study agreed with Mills' statement; however, no important differences were found between the regions in the United States.

Hypothesis 2. There is no relationship between the average age of the girls' menarche and the seasonal rhythm.

In examining the seasonal rhythm of menarche in the present study of only 395 girls who recorded their exact age of menarche (see Table 4), it can be noted that the fewest number of girls or 4.8 per cent experienced menarche in November and 4.89 per cent in April. The greatest number of girls, 10.88, 11.79, and 11.40 per cent experienced menarche in June, August, and December respectively. The average age when the 395 girls reached menarche was highest for those who experienced menarche in January (13.08 years). The lowest average age was for those girls who experienced menarche in July (12.42 years).

The total average age of menarche for those who recorded an exact time and for all seasons was 12.67 years

TABLE 4
AVERAGE AGE OF GIRLS' MENARCHE BY
MONTHS, YEARS, AND PER CENT

MONTH	AVERAGE AGE IN MONTHS	AVERAGE AGE IN YEARS	NUMBER	PER CENT
January	157.08	13.08	25	6.30
February	151.95	12.58	25	6.30
March	150.88	12.50	30	7.59
April	152.10	12.66	19	4.89
May	153.25	12.74	38	9.87
June	151.75	12.58	42	10.88
July	149.85	12.42	38	9.87
August	151.84	12.58	47	11.79
September	155.74	12.91	35	8.67
October	152.55	12.66	31	7.74
November	155.31	12.91	19	4.80
December	155.84	12.91	<u>46</u>	<u>11.40</u>
			395	100.00

(See Table 5). Dividing the months into seasons, the fewest number of girls experienced menarche in the spring and in the fall as was evidenced by 22.02 per cent and 21.53 per cent respectively. For the greatest number of girls or 32.15 per cent the first menses occurred in the summer and for 24.30 per cent first menses occurred in the winter. The highest average age for menarche was 12.91 years for 96 girls in the

winter months and the lowest average age of menarche was 12.58 years for 127 girls in the spring and for 87 girls in the summer months.

TABLE 5
SEASONS AND AVERAGE AGE OF MENARCHE OF
GIRLS BY NUMBERS AND PER CENT

SEASON	AVERAGE AGE IN MONTHS	AVERAGE AGE IN YEARS	NUMBER OF GIRLS	PER CENT
Winter	155.5	12.91	96	24.30
Spring	151.88	12.58	87	22.02
Summer	151.29	12.58	127	32.15
Fall	154.46	12.83	<u>85</u>	<u>21.53</u>
All Seasons	152.14	12.67	395	100.00

The coefficient of correlation of -0.02 was sufficiently low to indicate no significant relationship between the two factors in the hypothesis. In the study by Engle and Shelesnyak (1934) of 250 New York girls 74 (29 per cent) of the girls experienced menarche during the winter months while only 45 (18 per cent) of the girls experienced menarche during the summer which seemed to demonstrate a small seasonal incidence in the onset of the first menses. There were 68 girls (37.5 per cent) for which the first menses occurred in the spring and 63 girls (25.5 per cent) for which menarche occurred in the fall. The present study

reported 20 girls were from New York state who indicated their exact age of menarche. Five of these girls or 25 per cent reached menarche in the winter months, six girls or 30 per cent reached menarche in the spring, six girls or 30 per cent had their first menses in the summer and three girls or 15 per cent attained menarche in the fall. The total number of girls from New York state, however, was not large enough to make a significant comparison.

Of the 395 cases in the present study 127 girls (32.15 per cent) experienced the first menses during the summer months and 96 girls (24.30 per cent) experienced the first menses during the winter months. The results of the present study were in opposition to the results of the Engle and Shelesnyak (1934) study. The spring and fall seasons were the lowest with 79 girls or 21.5 per cent in each season reaching menarche. The difference may lie in the fact that the study was made in one locale, New York City, whereas the present study involved girls from various parts of the United States.

Hypothesis 3. There is no difference between the age of menarche and the place of residence of the girls.

On the questionnaire seven different places of residence were established. The number of girls from each place of residence and their average age of menarche is presented in Table 6. The overall average age of menarche of the 629 girls was 12.34 years. The coefficient of correlation of

0.02 showed little significant difference in the average age of menarche for the girls and their places of residence; therefore, the findings of this study support the hypothesis.

TABLE 6

PLACE OF GIRLS' RESIDENCE AND THEIR AVERAGE AGE
OF MENARCHE BY NUMBER AND PER CENT

PLACE OF RESIDENCE	AVERAGE AGE OF MENARCHE	NUMBER	PER CENT
Farm	12.42	73	11.61
In open country but not farmers	12.42	93	14.66
In a village or town of less than 2500 population	12.13	51	8.00
In a town of 2500 to 10,000 population	12.32	73	11.61
In a city of 10,000 to 100,000 population	12.38	131	21.51
In a city of over 100,000 population	12.34	73	11.61
In a residence area just outside the city limits	12.40	<u>135</u>	<u>21.00</u>
		629	100.00

In a study of 800 subjects Litnz and Markow reported that girls from farms and small towns had an average age of menarche of 13.5 years, medium-sized towns 13.5 years, and large cities 14.0 years relating no basic difference in sociological setting. In the present study of 73 girls

who were reared on farms 12.42 years was the average age of menarche and of the 93 girls reared in the open country but not on a farm 12.24 years was the average age. The 131 girls that lived in a city of 10,000 to 100,000 population reported an average age of 12.34 years and 12.40 years respectively. These figures indicate there is no significant difference in the sociological setting and menarche.

Hypothesis 4. There is no relationship between the parents as sources of information received by the girls about menstruation and the persons as sources influencing conversion.

The replies to the question about providing the sources of information of menarche and persons influencing conversion were divided into six categories: mother, father, both parents, peers, adult, and other. This information is presented in Table 7. The replies to the question in relation to the source of information on menstruation were as follows: mother 396 (62.95 per cent), father 3 (.48 per cent), both parents 4 (.64 per cent), peers 8 (.28 per cent), adults 15 (24.00 per cent), including elementary school teachers 64, secondary school teachers 20, college instructors 3, adult friend 51, doctor or nurse 1, relatives other than parents 12, and other 67 (10.6 per cent), including church organizations 47, and literature 20.

The replies to the question in relation to persons influencing conversion were as follows: mother 116 (18.42

per cent), father 41 (6.52 per cent), both parents 88 (14.0 per cent), peers 47 (7.48 per cent), adults 274 (43.56 per cent), which included pastor 61, evangelist 62, Sunday school teacher 88, camp personnel 32, relative other than parent 31, and other 63 (10.02 per cent).

TABLE 7
SOURCES PROVIDING INFORMATION FOR MENARCHE
AND PERSONS INFLUENCING CONVERSION

SOURCES AND/OR PERSONS	MENARCHE		CONVERSION	
	NUMBER	PER CENT	NUMBER	PER CENT
Mother	396	63.95	116	18.42
Father	3	.48	41	6.52
Both Parents	4	.64	88	14.00
Peers	8	1.28	47	7.48
Adults	151	24.00	274	43.56
Other	<u>67</u>	<u>10.65</u>	<u>63</u>	<u>10.02</u>
	629	100.00	629	100.00

The coefficient of correlation of 0.11 was significant at the .05 level of confidence and therefore the hypothesis was rejected.

The conclusions of the present study agreed with those of recent studies in the review of the literature related to the sources of information provided for menarche. Angelino and Mech (1955) reported that 70 per cent received

information from their mothers. Larsen (1961) ascertained that 84 per cent of the subjects received their information on menarche from their mothers. In a study the same year by Henton (1961) it was found that 76 per cent of the girls received their information from their mothers. In a discussion by Smart and Smart (1959) mothers felt inadequate to give their girls all the menstrual information they needed to know. It was suggested that the home economics teacher, physical education teacher, the school nurse, and the biology teacher would be the logical ones to teach information related to menstrual education.

Fathers were not recorded as giving any menstrual information to the girls in the Angelino and Mech study (1955). Larsen found that less than one per cent of the girls received information for preparation for the menses from their fathers. The present study concurred with the above studies in that less than one per cent received menstrual information from the father and fewer than one per cent received information from both parents and peers. Angelino and Mech (1955) reported the same results for information received from parents but Larsen (1961 and 1965) ascertained that peers provided information for 16 per cent of the girls in the 1961 study and in the 1965 study.

Hypothesis 5. There is no relationship between the age of girls' conversion and their age of menarche.

The average age of menarche for the 629 girls was

12.34 years. The range for the age of menarche for two girls at age eight to one girl who was 18 years of age. The average age of conversion was 10.73 years. The range for the age of conversion for 276 girls was from age eight or below to 15 girls who were 19 or above. (See Table 8). The average age of menarche and conversion of 629 girls was 12.34 years and 10.73 years respectively with a coefficient of correlation of -0.01.

TABLE 8

AGE RANGE OF GIRLS WHO REPORTED APPROXIMATE
AGE OF MENARCHE AND CONVERSION

AGE IN YEARS	MENARCHE		CONVERSION	
	NUMBER	PER CENT	NUMBER	PER CENT
8 or below	2	.31	276	43.89
9	7	1.01	71	11.27
10	47	7.47	34	5.40
11	85	13.84	33	5.24
12	209	33.22	51	8.00
13	173	27.50	37	5.88
14	69	10.96	28	4.61
15	27	4.29	29	4.45
16	8	1.10	22	3.65
17	1	.15	21	3.33
18	1	.15	14	2.00
19 and above	0	.00	15	2.28
	629	100.00	629	100.00

There were 326 of the 626 girls who reported the exact age of menarche and the exact age of conversion. The average age of menarche of the girls who gave exact dates reported in months was 152.14 months or 12.67 years. The range reported by the girls for the exact age of menarche was two girls at eight years to one girl at 18 years of age. The remainder of the girls fell between these two points. The average age of conversion of the girls who gave exact dates reported in months was 126.14 months or 10.51 years. The range for the age of conversion was from 141 girls age eight or below to 15 girls 18 or above as shown in Table 9. The hypothesis was supported with a correlation of 0.16. The correlation of the 629 approximate ages of menarche and conversion of -0.01 and the correlation of the 326 exact ages of menarche and conversion of 0.16 was too low to indicate a reasonable degree of relationship.

Starbuck (1901) in 1897 reported the average age of menarche of 119 girls was 13.8 years and the average age of conversion to be 14.8 years, a year later. The present study ascertained the average age of menarche of 629 girls was 12.34 years and the average age of conversion was 10.73 years. One wonders if the lowering of the average age of menarche in the last sixty years, from 13.80 years to 12.34 years, about a year and a half, might be related to a better diet and more favorable environment as was suggested by Greulich (1944, p. 28). The lowering of the average age of

TABLE 9

AGE RANGE OF GIRLS WHO REPORTED THE EXACT
DATE FOR MENARCHE AND CONVERSION

AGE IN YEARS	MENARCHE		CONVERSION	
	NUMBER	PER CENT	NUMBER	PER CENT
8 or below	2	.61	141	43.25
9	5	1.53	27	8.28
10	22	6.73	17	5.22
11	46	14.14	25	7.67
12	112	34.25	26	7.98
13	85	26.06	20	6.14
14	32	9.81	12	3.68
15	15	4.60	14	4.26
16	5	1.53	13	3.98
17	1	.37	16	4.91
18 and above	<u>1</u>	<u>.37</u>	<u>15</u>	<u>4.63</u>
	326	100.00	326	100.00

conversion from 14.89 years to 10.73 years, a little more than four years may be related to an increased emphasis on children in evangelistic efforts outside of the church. The change in the last sixty years from the average age of conversion occurring a year after menarche to the average age of conversion occurring a year and a half before menarche would seem to indicate that no relationship was evidenced between

puberty, as defined by menarche, and religious awakening, as defined by conversion, in the present study.

The data revealed some interesting indications about menarche but did not show a relationship between the factors in the hypothesis. Four out of five of the hypotheses concurred with the studies in the review of the literature.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The present study was concerned with the investigation of menarche and its relation to certain demographic factors. Young women's sources of information about menarche were also studied. Religious awakening and its relation to menarche was a further consideration.

Related Literature

A review of the literature revealed that as far back as 1885 American writers were concerned with the study of adolescent girl's first menses known as menarche. The early studies of Robets and Kennedy in 1885 as reported by Starbuck (1901) found the average age of menarche to be 14.3 years and 13.7 years respectively. Englemann (1902) collected statistics on 19,404 North American women from various places of temperature, climate, and various races and nationalities. The early investigators (Starbuck 1901, Englemann 1902) determined the average age of menarche to be approximately thirteen and a half years to fourteen years. Approximately eighty years later the average age of menarche reported by Golub, Menduke and Lang (1963) and Larsen (1965) was approximately twelve and a half years. Investigations have been made during the intervening years on menarche and

its relationship to climate, heredity, seasons, and place of residence. The general information revealed in these studies may be summarized in the statement by Greulich (1944, p. 28) indicating that "good nutrition and a generally favorable environment tend, within limits, to hasten menarche." Menarche in the studies was considered as a reliable, easily identifiable, and easily recalled criterion for puberty in females.

Method of Data Collection

The group studied consisted of 629 questionnaires obtained in the spring of 1968 from female college students enrolled in the freshman and sophomore physical education classes at Bob Jones University, Greenville, South Carolina. Twelve questionnaires were obtained but not used because they were not filled in correctly.

Data Analysis

Data from the questionnaires were punched on I.B.M. cards and the sorter and computer were used to obtain totals, percentages, and averages. Pearson product-moment coefficient correlations were computed on the five hypotheses. The data on the place of residence were divided into the four commonly accepted regions. The month of the year when menarche occurred was determined by adding exact number of months to the birth date. The months were then divided into seasons.

Conclusions

Conclusions were drawn from the data using the total group of 629 girls who responded to all of the questions on the questionnaire and who checked the approximate age of menarche. Relationship between the age of menarche of these girls and climatic conditions and places of residence was derived from the data. Conclusions were also determined about the sources of information on menarche and sources influencing conversion. Of the 629 girls, 395 who reported an exact age of menarche provided data from which conclusions were made in relation to menarche and seasonal rhythm. Data from 326 of the 629 girls who reported an exact age of menarche and an exact age of conversion were compared to determine the relationship between the age of menarche and the age of conversion. The following conclusions were made in relation to each of the hypotheses:

There was no relationship between the girls' age of menarche and climatic factors of the regions from which the girls came. One exception was that the 35 girls who came from California experienced menarche at 11.88 years, about six months earlier than the average age of menarche for girls from other regions in the United States. The coefficient correlation of -0.01 was too low to indicate any reasonable degree of relationship.

There was no relation between the menarche of 395 girls and the seasons of the year in which the menarche

occurred. The average age was highest for those girls who had their first menses in January (13.0 years) and lowest for those who experienced menarche in July (12.4 years). The highest seasonal average was 13 years in the winter months and 12.58 years in the summer months. The greatest number of the girls, 119, reached menarche in the summer. The correlation coefficient of -0.02 did not indicate any significant degree of relationship between menarche and the four seasons: winter, spring, summer, and fall.

No relationship existed between the 629 girls' residence and their menarche. This residence included large cities, small towns, and rural areas. The hypothesis was supported with a correlation coefficient of -0.02.

Relationship was shown between the girls' source of information about menarche and the source influencing conversion. The girls received their first information about menarche in the following ways: 60 per cent from their mothers and very little from their fathers (0.4 per cent) and both parents (0.9 per cent). Peers gave information to 0.9 per cent of the respondents. Other adults gave first information to 24 per cent of respondents. The source influencing conversion was low for the mothers, 18.42 per cent, and high for other adults, 43.56 per cent. The correlation coefficient of 0.11 at the .05 level of confidence was significant.

There was no relationship between the age of menarche

and the age of conversion. The average age of menarche and conversion of 629 girls was 12.34 years and 10.73 respectively and the correlation coefficient was -0.01 which was too low to be significant. The average age of 326 girls who reported the exact age of menarche and conversion was 152.14 months or 12.67 years and 126.14 months or 10.51 years respectively. Hall's idea in 1881 (1904), and Starbuck's (1901, p. 28) study indicated that conversion was "a distinctively adolescent phenomenon." The present study does not agree with Starbuck and Hall.

Recommendations for Further Study

It is recommended that further studies be done in relation to the age of menarche in North American white women as compared to the menarcheal ages of other races in North America. Comparative factors of the races could be studied to give a greater understanding of environment, heredity, seasons, and nutrition as possible causative factors of earlier menarche.

Research is needed to find the age at which information on menarche should be given to prepare sufficiently young girls for the event. Another part of the study might be to investigate the kinds of literature read by girls as a source of information on menarche. This information would be helpful to persons working with preadolescent girls.

A restudy every two years using the same questionnaire

in the same setting that was administered for this study might be helpful to establish trends in average ages and other related factors.

Finally a study related to nutrition and menarche might be interesting. The literature mentions nutrition as a definite possible contributing factor to the age of first menses, and thus research to investigate the detailed eating habits of North American girls as related to menarche might be beneficial.

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APPENDIX A

QUESTIONNAIRE CONCERNING CONVERSION AND MENARCHE

Please answer the following questions about yourself:

Date _____

Home town _____

Home state _____

Birth date _____

Age in months _____

What is your major area in college?

____ Fine arts

____ Business

____ Education

____ Religion

____ Arts and Science

Please check (x) only one answer to each of the following questions:

1. My family lives

____ on a farm

____ in the open country but we are not farmers

____ in a village or town of less than 2,500 population

____ in a town of 2,500 to 10,000 population

____ in a city of over 100,000 population

____ in a residential area just outside the city limits

2. Age of your first menstrual period? Exact: Years _____
 Months _____ or approximate age within one year, check
 below:

<u>Months</u>	<u>Years</u>
_____ Below 107	(9+)
_____ 108---119	(10+)
_____ 120---131	(11+)
_____ 132---143	(11+)
_____ 144---155	(12+)
_____ 156---167	(13+)
_____ 168---179	(14+)
_____ 180---191	(15+)
_____ 192---203	(16+)
_____ 204---215	(17+)
_____ 216---227	(18+)
_____ 228 or more	

3. From whom did you receive your first information about menstruation?

_____ Mother
 _____ Father
 _____ Both parents
 _____ Elementary school teacher(s) (grades 1 thru 6)
 _____ Secondary school teacher(s) (grades 7 thru 12)
 _____ College instructors
 _____ An adult
 _____ A Peer (person(s) near own age)
 _____ Doctor or nurse
 _____ Church organizations
 _____ Literature provided by parents, teacher, or medical
 profession
 _____ Relatives other than parents
 _____ Other sources: Name _____

4. Age of conversion. Exact years _____ Months _____ or
 approximate age, check below:

<u>Months</u>	<u>Years</u>
_____ Below 107	
_____ 108---119	(9+)
_____ 120---131	(10+)
_____ 132---143	(11+)
_____ 144---155	(12+)
_____ 156---167	(13+)
_____ 168---179	(14+)
_____ 180---191	(15+)

___ 192---203 (16+)
___ 204---215 (17+)
___ 216---227 (18+)
___ 228 or more

5. Where were you converted?

___ Church
___ Home
___ Evangelistic meeting
___ Church related camp
___ Sunday school
___ Vacation Bible school
___ Child evangelism clubs
___ Parsonage
___ College
___ Other places: Where _____

6. Who was the person or agent that influenced you most toward conversion?

___ The home
___ Christian day school personnel
___ The church
___ Sunday school
___ Youth rallies and clubs
___ Church related camps
___ Private devotions
___ Friend(s)
___ College
___ Other: Name _____

7. Who was the person most instrumental in your making your decision that led to your conversion?

___ Mother
___ Father
___ Both parents
___ Pastor
___ Evangelist
___ Sunday school teachers or other church related personnel
___ Friend(s)
___ Church related camp--personnel of
___ A relative other than your parent(s)
___ Self discovery
___ Other persons: Who _____

8. Were your parents Christians during your childhood years? (ages 0-13)

All of the time Part of the time None of the time

<input type="checkbox"/> Mother	<input type="checkbox"/> Mother	<input type="checkbox"/> Mother
<input type="checkbox"/> Father	<input type="checkbox"/> Father	<input type="checkbox"/> Father
<input type="checkbox"/> Guardian	<input type="checkbox"/> Guardian	<input type="checkbox"/> Guardian

9. If "none" is the answer to the above (no. 8) were your parents or guardian Christians during your teen years? (ages 13 and following).

All of the time Part of the time None of the time

<input type="checkbox"/> Mother	<input type="checkbox"/> Mother	<input type="checkbox"/> Mother
<input type="checkbox"/> Father	<input type="checkbox"/> Father	<input type="checkbox"/> Father
<input type="checkbox"/> Guardian	<input type="checkbox"/> Guardian	<input type="checkbox"/> Guardian

10. In what religious faith did you participate before your conversion?

☐ None
☐ Catholic, Roman
☐ Jewish
☐ Adventists
☐ Mormons
☐ Jehovah's Witness
☐ Protestant
☐ Old Catholic, Polish National Catholic and American Church of North American Diocese
☐ Eastern (includes churches of origin of Russian, Greek, Assyrian, etc.)
☐ Other: Name _____

11. If you answered Protestant to number 10 with what group did you affiliate?

☐ A Baptist group
☐ A Methodist group
☐ A Lutheran group
☐ A Presbyterian group
☐ A Brethren group
☐ A Friends group
☐ A Pentecostal group
☐ A Reformed group
☐ A Mennonite group
☐ Other: Name _____

12. After your conversion with what group or body did you affiliate?

- ☐ Baptist
- ☐ Methodist
- ☐ Lutheran
- ☐ Presbyterian
- ☐ Pentecostal
- ☐ Evangelical bodies (Free church of America)
- ☐ Independent Fundamental Churches of America
- ☐ Friends
- ☐ Jehovah's Witness
- ☐ Roman Catholic
- ☐ Other: Name _____
- ☐ No affiliation

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