Lifestyle and Life Span of Seventh-Day in Minahasa Conference

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Abstract: Seventh-day Adventists health principle that promotes healthy lifestyle proved to increase health and life expectancy beyond most populations. In recent years, SDA members’ death rate increased, thus the lifestyle and life span (age of death) depiction was surveyed to answer the problem. This descriptive research examines lifestyle and life span of Adventists in Minahasa Conference that died 10 years recently with over 21 years of age. Samples were 20% of churches established before 2007 using simple random sampling technique. Data were obtained using questionnaires filled by families or church elders of the members that passed away. The main purpose was to describe the depiction and correlation of lifestyle and life span. All respondents (n=191) participated. Lifestyle depictions highest results: pesco-vegetarians (45.0%); clear water consumption (51.3%); exercise seldom (40.3%); 3-6 hours of sleep daily (49.2%); no smoking history (81.2%); 70-79 years (24.6%) average age of deaths. Significant correlation of lifestyle and life span: positive with diet r=0.271, p<0.05; beverage r=0.258, p<0.05; sleep duration r=0.243, p<0.05; negative with smoking history r=-0.202, p<0.05. Healthy lifestyle of the SDA members proves to increase life span. The mortality rate increased for not all members practiced it. Therefore, health promotion is needed to maintain healthy lifestyle.

Keywords: age of death, lifestyle, life span, Minahasa, Seventh-day Adventist

INTRODUCTION

Seventh-day Adventist Church annual statistics report showed an increase in the mortality list without cause of the members with a range of 2010 to 2015 years. The upsurge is actual from 0.18%, i.e. the number of 383 deaths from 207,284 members in the beginning of the year (Seventh-Day Adventist General Conference, 2010) to 0.22%, i.e. the number of 442 deaths from 202,816 members in the beginning of the year (Seventh-Day Adventist General Conference, 2016) from the total members of Adventists in Indonesia. Although it is clear that the cause of death possibilities includes many factors, but in accordance with the incidents which the authors perceived during this past period of time, some found that most death incidents of the Adventists were caused by some chronic diseases, including cancer, stroke, and diabetes mellitus. This raises the question about what caused the occurrence of circumstances which do not relate to the research and expectations based on the principle of the adherents of this religion.

Seventh-day Adventist Church or commonly referred as Adventist is part of Protestant Christianity holds on the belief in the coming of Christ to Earth which is near and believes that Saturday as the Sabbath (Knowles, 2006). About 40% of the members are vegetarians, and most are lacto-ovo vegetarians. Vegetarian diet is not required but recommended for the Adventists. Snacks in between meals, chili, alcohol, tea and coffee are not recommended (Brown, 2014).

The issue of an increase in the Adventists mortality rate is inversely proportional to claims from earlier studies reflecting that Adventists have higher life expectancy and health quality than most of the population. Each Adventists diet are slightly different but as an organization, Adventists promote vegetarian diet for optimal health (SDA Pioneer, 2015). Research conducted by the Fraser in California, US, reveals that Adventists has a higher life span at any particular age and life expectancy for men and women compared than non-Adventists (Fraser, 2003). Fraser with his other research in California, US and UK found a moderate decrease in all-cause mortality of vegetarians, compared with the rest of the population in the community. (Fraser, 2009). According to the research of Huang & Wahlqvist, from
seven studies included in the analysis of all-cause mortality was found to be 9% lower in vegetarians than non-vegetarians. (Huang & Wahlqvist, 2012).

Based on the issue and background stated above, the author was motivated to establish the research in one of the areas in the central part of Indonesia with high Adventist population entitled: "Lifestyle and Life Span of The Seventh-day Adventists in Minahasa Conference 2017".

**MATERIALS AND METHODS**

This research uses the widest method category of the non-experimental research design, the survey method. In this case, the researcher used descriptive survey research method (non-experimental) using the questionnaire as the measurement tool for lifestyle as the independent variable and life span (age of death) as the dependent variable that are collected in the same time.

The population examined in this study are adherents of The Seventh-day Adventist Church in North Sulawesi with a total of 545 churches according to the data of the year 2015.

The target population includes the Adventist Churches in Minahasa Conference which have been formed until the year of 2007 with the amount of 40,122 members in the beginning of the year from 177 churches according to the year of 2007 report (Seventh Day Adventist Church, 2007, p. 20).

Sampling is a very important technique in a research. A good research design provides information on the treatment and control that will be applied to the selection of the sample and population (Singh, 2010). The sample is a 'part' of the 'phenomenon', namely the population. Samples taken for this study is 20% of the total target population (n=35), by taking the record of the mortality list of the church members during the last 10 years i.e. from the year 2007 to the beginning of the year 2017 which was obtained from the Church Secretary of every churches.

Samples were taken using one-stage cluster sampling, a form of random cluster sampling in which a particular group of people that includes some elements are chosen randomly from all groups in the population. After a group is selected, all of the elements in the group are included in the sample. (Johnson & Christensen, 2013, p. 261).

Data was collected by selecting the churches that are part of the population, made list of the total churches in Minahasa Conference which have formed until the year 2007, namely amounted to 177. The list of the churches later cut into small pieces of paper and then selected randomly to reach 20% of 177, which is a total of 35 churches. Members of the churches that have died during the last 10 years from 35 churches were selected as the sample in this research. List of the members who have died during the last 10 years from the selected churches were retrieved from the Church Secretary. The nuclear family or the Church Elder who have lived together or well acquainted with the data source individuals were the respondents.

Samples in this research have the inclusion criteria as follows:

1. The individual’s age of death is above 21 years
2. The individual have nuclear family or Church Elder living together or well acquainted with the him/her when he/she was still alive.

Samples in this research have the exclusion criteria as follows:

1. The individual died due to an accident
2. There was not found any family members living with individuals when he/she was still alive
3. Data about the individual was not remembered by the family member as well as the Church Elder.
Lifestyle that was referred to in this research is a collection of habits on how humans live focusing on the same purpose, measured using a questionnaire which consists of 5 questions. The life span (age of death) that was referred to in this research is a period or duration of existence of life which extends from the start of a certain time until the end of life, measured using a questionnaire which consists of 1 question.

The instrument used in this research is a questionnaire adapted from Adventist Health Studies-2 by Loma Linda University, California.

The research began under the permission from the Dean of the Faculty of Nursing. Data collection process was executed upon the permission from the Minahasa Conference Regional President where the research was carried out. Respondents involved in data collection had firstly been given explanation regarding the research objectives clearly, then subjected to approval by signing the inform consent when respondents are willing and want to join in the research, and then made contracts with the researcher to participate in the research. The questionnaires were then given and filled by the respondents according to the agreed time.

After the data was obtained through the questionnaire, the results were reviewed or sorted to make sure it was complete, clear, relevant, and consistent, feasible or not to be included in the research. The data was documented manually then coded, i.e. turning the data in the form of letters into numerical data in order to facilitate the analysis, then documented into a computer program. The data entered was then checked back to avoid the possibility of errors in coding, incompleteness, and so on.

Data to answer the first and the second identification problem are processed into the frequencies and percentages to compare the value of variant groups of data obtained.

Data to answer the third identification problem analyzed with bivariate analysis on two variables concerned (Notoaatmodjo, 2012, p. 183). The variable in this study was analyzed using Pearson r correlation.

RESULTS

I. Minahasa Conference Adventist Lifestyle Description

A. Type of Food Description

<table>
<thead>
<tr>
<th>Table 1.1 Type of Food Description</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-vegetarian</td>
<td>50</td>
<td>26.2</td>
</tr>
<tr>
<td>Semi-vegetarian</td>
<td>42</td>
<td>22.0</td>
</tr>
<tr>
<td><strong>Pesco-vegetarian</strong></td>
<td><strong>86</strong></td>
<td><strong>45.0</strong></td>
</tr>
<tr>
<td>Lacto-ovo</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Total vegetarians</td>
<td>9</td>
<td>4.7</td>
</tr>
<tr>
<td>Total</td>
<td>191</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Data Analysis
Data in Table 1.1 shows that the frequency and percentage of people that consume rice, vegetables, fruits, beans, fish, without white and red meat, or namely pesco-vegetarian is the highest, with the frequency of 86 people (45.0%), followed by 50 (26.2%) non-vegetarians that consume meat, then 42 (22.0%) semi-vegetarians that do not consume red meat, 9 (4.7%) total vegetarians that do not consume meat and dairy products at all, and 4 (2.1%) lacto-ovo vegetarians that do not consume meat but consume dairy products.

b. Interpretation
Adventists with pesco-vegetarian diet has the highest percentage from all the other categories. Orlich, along with associates proved in their research about the vegetarian diet patterns and mortality in the Adventist Health Study 2 that the mortality frequency of the vegetarians is lower than non-vegetarians. In the research, they reviewed a discovery linking diet with obesity, metabolic syndrome, hypertension, diabetes mellitus, risk of bone fractures and density, mortality, and cancer incidence generally (Orlich & Fraser, 2014). The results show that most of the members consume fish and do not consume red meat.

2. Types of Beverages Description

<table>
<thead>
<tr>
<th>Table 1.2 Types of Beverages Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Clear water, milk and carbonated drinks</td>
</tr>
<tr>
<td>Clear water and carbonated drinks</td>
</tr>
<tr>
<td>Valid</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

(a. Data Analysis)

Data in Table 1.2 reflects that people that consume only clear water has the highest percentage and amount up to 98 (51.3%) people, followed by 43 (22.5%) people that consume clear water and milk people, then 16 (8.4%) people with clear water, milk, carbonated drinks consumption.

(b. Interpretation)

Analysis of the above data shows that the amount and percentage of members who only consume clear water has the highest value followed by milk, then carbonated drinks consumption. Andress revealed some biblical basis for healthy living patterns, including drinking enough water every day, being temperance and not excessive in living (Andress, 2013, p. 137). The results show that Adventists in Minahasa shows quite temperance in choosing the type of drinks, that the result was found to be in accordance with the of health principles embraced.

3. Exercise Frequency Description

<table>
<thead>
<tr>
<th>Table 1.3 Exercise Frequency Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Never</td>
</tr>
<tr>
<td>Very rarely</td>
</tr>
<tr>
<td>Seldom</td>
</tr>
<tr>
<td>Often</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

(a. Data Analysis)

Based on the data obtained in Table 1.3, it can be seen that the frequency and percentage of 77 (40.3%) people who seldom exercise the is the highest, followed by 49 (25.7%) people who often work out, then 33 (17.3%) people who never exercise, and not much different with the 32 (16.8%) people that work out very rarely.

(b. Interpretation)
Members who seldom work out are more than the members that were often and never exercise. Andress revealed some biblical basis for healthy living patterns, among other things for a living by balancing exercise (Andress, 2013, p. 137). Only few of the members who exercise adequately, that made it not quite in accordance with the health principles embraced.

4. Sleep Duration Description

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 3 hours</td>
<td>4    2.1</td>
</tr>
<tr>
<td>3-6 hours</td>
<td>94   49.2</td>
</tr>
<tr>
<td>7-10 hours</td>
<td>88  46.1</td>
</tr>
<tr>
<td>&gt; 10 hours</td>
<td>5   2.6</td>
</tr>
<tr>
<td>Total</td>
<td>191  100.0</td>
</tr>
</tbody>
</table>

a. Data Analysis
The data in Table 1.4 reflects that the number and percentage of members that sleep for 3-6 hours are the highest, which counts up to 94 people (49.2%), followed by 7-10 (46.1%) members that sleep for hours.

b. Interpretation
Sleep duration 3-6 is the number of hours and the highest percentage, followed by 7-10 hours. Andress revealed some biblical basis for healthy living patterns, among other things for a living by balancing exercise (Andress, 2013, p. 137). Buettner renders proselytes Advent in Loma Linda, California, which sets out the practice of health, among others, Sabbath, and keeping the faith. (Buettner, 2005). The results show that members of the Advent had enough rest time, so in tune with the principles of health embraced.

5. History of Cigarette Smoking Description

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never smoked cigarette</td>
<td>155  81.2</td>
</tr>
<tr>
<td>Smoked cigarette</td>
<td>36   18.8</td>
</tr>
<tr>
<td>Total</td>
<td>191  100.0</td>
</tr>
</tbody>
</table>

a. Data Analysis
The data in Table 1.5 shows that the number and percentage of members that have never smoked cigarette is higher for 155 (81.2%) members, compared with the number and percentage of people who smoked cigarette, that is, with the amount of 36 (18.8%) people.

b. Interpretation
Members who have never smoked cigarette was found to be significantly higher than those who smoked cigarette. Buettner claims that Adventists in Loma Linda, California, establish "best practices" among others by not smoking. (Buettner, 2005). Andress revealed some biblical basis for healthy lifestyle, including temperance and not living excessively (Andress, 2013, p. 137). According to the results, the Adventists majority don't smoke, makes it in accordance with the health principles adhered.
II. Minahasa Conference Adventist Life Span Description

<table>
<thead>
<tr>
<th>Tabel 2.1 Age of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>20-29</td>
</tr>
<tr>
<td>30-39</td>
</tr>
<tr>
<td>40-49</td>
</tr>
<tr>
<td>50-59</td>
</tr>
<tr>
<td>60-69</td>
</tr>
<tr>
<td>70-79</td>
</tr>
<tr>
<td>80-89</td>
</tr>
<tr>
<td>90-99</td>
</tr>
<tr>
<td>100-109</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

a. Data Analysis
Data in Table 2.1 shows that the highest percentage of the varied Adventists age of deaths died in the age of 70-79 years sums up to 47 people (24.6%), followed by 41 people (21.5%) with 80-89 years age of death, then 40 persons (20.9%) with 60-69 the years age of death.

b. Interpretation
Data analysis specified above shows that the highest percentage of Adventists age of the deaths range from 70-79, and yet some aged up to over 100 years. The life expectancy in North Sulawesi province reached up to 70.99 years of age (BPS province of North Sulawesi, 2017). In the 21st century, the Adventists average mortality was merely 39.65% of population mortality in accordance with the Adventist mortality percentage and the global mortality percentage in the year 2003-2010. (Trim, 2015, p. 2). Buettner claims that Adventists in Loma Linda, California was ranked the best age in life expectancy that reaches up to 10 years longer than the people of California in general. (Buettner, 2005). The results proved that the Adventists life expectancy in Minahasa Conference is aligned with the previous researches although it did not differ significantly with the North Sulawesi province life expectancy.
III. Minahasa Conference Adventist Lifestyle and Life Span Correlations

1. Type of Food and Age of Deaths

<table>
<thead>
<tr>
<th>Table 3.1</th>
<th>Type of Food and Age of Deaths Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE OF DEATHS</td>
<td>TYPE OF FOOD</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>191 191</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

a. Data Analysis

The data in Table 3.1 concerning the correlation between age of death and type of food shows the existence of a significant positive statistical correlation $r = .271$, with $p < 0.05$.

b. Interpretation

Significant positive correlation was found between the age of death and type of food, where it shows that life span is longer in people with less meat consumption and vegetarian approaches. Buettner wrote that a vegetarian lifestyle and nuts consumption can add 2 years of life (Buettner, 2012, p. 133). Andress suggests the biblical basis for healthy living patterns, such as "eat for strength and not for self-satisfaction" (Andress, 2013, p. 137).

2. Type of Beverage and Age of Deaths

<table>
<thead>
<tr>
<th>Table 3.2</th>
<th>Type of Beverage and Age of Deaths Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE OF DEATHS</td>
<td>TYPE OF BEVERAGE</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>191 191</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

a. Data Analysis

Based on the data in Table 3.2 regarding the age of death and type of beverage, can be found a significant positive statistical correlation $r = .258$, with $p < 0.05$.

b. Interpretation

Significant positive correlations were also found between the ages of death and type of drinks that proves that life is longer in people who consume clear water without consuming water with color or smell. Andress suggests the biblical basis for healthy living patterns, such as "drink enough water every day" (Andress, 2013, p. 137).
3. Exercise Frequency and Age of Deaths

| Tabel 3.3 Exercise Frequency and Age of Deaths |
| Correlations |

<table>
<thead>
<tr>
<th>AGE OF DEATH</th>
<th>EXERCISE FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.018</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.802</td>
</tr>
<tr>
<td>N</td>
<td>191</td>
</tr>
</tbody>
</table>

EXERCISE FREQUENCY

| Pearson Correlation | .018 |
| Sig. (2-tailed) | .802 |
| N | 191 | 191 |

a. Data Analysis
The data in the Table 3.3 indicates that there is no correlation between age of death and exercise frequency.

b. Interpretation
Correlation between age of death and the exercise frequency was not found. Andress renders the biblical basis for healthy living patterns revealed to balancing life with sports and rest (Andress, 2013, p. 137).

4. History of Cigarette Smoking and Age of Deaths

| Tabel 3.4 History of Cigarette Smoking and Age of Deaths |
| Correlations |

<table>
<thead>
<tr>
<th>AGE OF DEATHS</th>
<th>HISTORY OF CIGARETTE SMOKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>- .202**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.005</td>
</tr>
<tr>
<td>N</td>
<td>191</td>
</tr>
</tbody>
</table>

HISTORY OF CIGARETTE SMOKING

| Pearson Correlation | - .202** |
| Sig. (2-tailed) | .005 |
| N | 191 | 191 |

**. Correlation is significant at the 0.01 level (2-tailed).

a. Data Analysis
Based on the data in the Table 3.4 concerning the age of the death and the history of cigarette smoking, there can be found a significant negative statistical correlation \( r = - .202 \), with \( p < 0.05 \).

b. Interpretation
A significant negative correlation was found between the age of death and history of cigarette smoking that proves that people who don't smoke live longer. On the biblical basis for healthy living patterns also revealed to have temperance in living habits, including to not smoke (Andress, 2013, p. 137). According to Buettner, one of the things that can be done to add the age of living is not to smoke (Buettner, 2012, p. 133).
DISCUSSION

The results show that most Seventh-day Adventists at Minahasa consume fish without white or red meat consumption, had quite temperance in choosing the type of drink, had enough rest time, and never smoke cigarette, proving to be relatively in accordance with the health principle adhered. But only a few members who exercise adequately.

The highest rate for the age of death in the Adventist members age ranges from 70 to 79 years old, and even reached up to over 100 years old. The results proved that the Minahasa Conference Adventists life span have differences in accordance with previous researches.

The results proved that the longer life span was to the less meat consumption and advanced to vegetarian, consuming clear water without water with color or smell consumption, adequate rest, and to those that don't smoke.

Buettner wrote a topic about the longevity secrets from 3 certain parts of the world where humans live significantly longer. One of them was a group of Adventists in Loma Linda, California, which sanctifies the Sabbath day, keeps the faith, and consume nuts, that they live 10 years longer than people of California in general. All these groups establish "best practices" to emulate with not smoking, put family as the main one, is active every day, maintaining social relationships, consuming fruits, vegetables, and whole grain. (Buettner, 2005). Plenty of research shows that longevity depends heavily on lifestyle (Buettner, 2008).

CONCLUSION

Based on the research conducted to the Minahasa Conference Adventists year 2017 about lifestyle and life span, it can be concluded that:

1. The amount of meat consumption, clear water consumption, adequate rest, and temperance to not consume alcohol and not smoking are still applied by the adherents of religious Adventists in Minahasa.
2. More than forty percent Adventists in Minahasa still rarely work out.
3. More than twenty-four percent more Adventists in Minahasa lives longer with ages ranging from 70 to 79 years.
4. Sufficiently evidenced that the lifestyle, in accordance with the teachings which is believed by the Adventists found to be associated with the longer life span, although still not all Adventists applied the taught lifestyle.

REFERENCE


