

## Women's Aging Benchmarks in Relation to Their Health Habits and Concerns

### ABSTRACT

**Objective:** To identify aging benchmarks for women and to examine relationships between women's perceptions of aging and their health behaviors and concerns.

**Method:** More than 1,000 primarily white women completed paper-and-pencil and Internet surveys of demographic, attitudinal, and health-behavior information.

**Results:** Aging benchmarks correlated significantly with women's education and employment levels, reported health status, and health behaviors including exercise, dieting, and breast augmentation surgery. Those who worried about aging were significantly more likely to diet but not more likely to exercise.

**Conclusion:** More research is needed to understand how perceptions influence women's ability to impact the aging process.

**Key Words:** Women, perceptions of aging, aging benchmarks, self-rated health, health behaviors

### INTRODUCTION

Some medical professionals regard aging as an untreatable disease process, whereas others approach it as a normal biological condition that can be managed. <sup>1</sup> This duality of deterioration and growth shows in this comment by Butler, former director of the National Institute on Aging:

From the biological perspective, aging is a predictable, progressive, universal deterioration of various physiological systems, mental and physical, behavioral, and biomedical. ... At the same time there is clear evidence, though more elusive and more difficult to measure, of concurrent psychosocial growth in capacities for strategy, sagacity, prudence, in age.<sup>1</sup>

In part because of this duality, people experience the aging process in highly variable ways, and researchers in the 1990s turned increasingly to qualitative measures to elucidate this variability.<sup>2</sup> Although American culture offers women massive amounts of information on how to stay young, it provides little information on how to age successfully. Many young women worry about their fading youth and question if they will still have value and worth as they age.<sup>3</sup>

In fact, the concept of "aging well"—signifying effective coping with aging regardless of adversity—has appeared in the literature only recently.<sup>2</sup> Because so little scientific literature addresses these issues, most of the existing research to date has occurred within a popular realm.

Researchers have, however, investigated the relationship of self-rated health to a variety of factors for more than 20 years. Follow-up to studies begun in the 1970's showed that poor self-rated health predicted survival and functional limitation up to 20 years later.<sup>4</sup> In other studies, self-rated health was related to affect but not to age<sup>5</sup> and correlated with a variety of factors including chronic disease<sup>6</sup>, obesity<sup>7</sup>, disability<sup>8</sup>, walking difficulty<sup>9</sup>, life

satisfaction and trust<sup>10</sup>, and likelihood of remaining in the workforce<sup>11</sup>. Self-rated health was higher than expected in older people.<sup>7</sup> In addition, it improved in women as they aged<sup>9, 12</sup>, even when the women actually experienced an increase in chronic diseases and a decrease in function<sup>13</sup>.

Even this small body of literature provides little comparative data on women's views of aging<sup>14</sup>. The oft-used term middle age has few distinct structural markers, and there is no agreed-upon chronological definition of middle age.<sup>2</sup> This absence of data provides the impetus for the basic research questions of the present study.

The perception of the aging process itself is subjective, as demonstrated by a recent survey revealing that the older the respondents, the greater the age they viewed as old.<sup>14</sup> Another survey found a large percentage of men and women in their seventh decade considered themselves to be middle-aged; nearly 45% of persons aged 65–69 considered themselves to be middle-aged<sup>15</sup>. These surveys demonstrate the extraordinary variability in perceptual benchmarks.

As members of the Baby Boom generation reach their middle years, many still hold onto the idea of being youthful past the age of 50 years as if they were “frozen in time.”<sup>16</sup> Women of this generation may reject stereotypes of aging to describe themselves as “Niftier Fiftier,” a phrase coined by Popcorn in her groundbreaking marketing work.<sup>17</sup>

Attitudes and perceptions can influence women's experiences of aging. Many researchers have demonstrated that perceived health status correlates strongly with other measures of health.<sup>18</sup> Recent research suggests that secondary control strategies, (e.g., expecting less of oneself) may become increasingly important later in life as one's ability to change the environment declines.<sup>19</sup> For example, the attitude of optimism has been positively associated with participation in health-promoting behaviors, health outcomes, and even longevity.<sup>20</sup>

Health status is also affected by a woman's level of education, level of career advancement, and self-care.<sup>16</sup> Women working as laborers and in non-technical fields suffer from poor internalized images and obesity as they age, leaving them especially susceptible to heart disease and other health problems.

Data on women's exercise patterns vary. The Centers for Disease Control and Prevention reported that 60% of adults do not exercise enough to maintain their health<sup>21</sup>; however, other studies of more than 3,300 women indicate from 60% to 72% consider themselves physically active.<sup>22, 23</sup>

Older women tend to be less active than younger women are, and they may feel they do not have the energy or the time to exercise regularly. Women tend to exercise less after having children, although this effect has not been found for fathers. Women who exercise may stop doing so if they feel it is not helping them achieve their goal of weight loss.<sup>24</sup> The present study will address exercise and diet as they relate to aging.

Women comprise the majority of health care consumers.<sup>25</sup> Societal commentators suggest commercial marketers exploit and manipulate women's obsession with youth by selling products and services to reverse the aging process.<sup>17</sup> This pressure further compounds women's tendency to be driven by external forces rather than their bodies' health needs.

This is important because the percentage of people over age 65 is projected to double—to 1 in 4—by the year 2030. The fastest growing segment of the population is the 85+

age-group, and most of these elders are women.<sup>26</sup> Because marketing women's health care has become such a big business, women need to become especially astute consumers.<sup>24</sup>

Women, particularly older women, tend to deny or ignore their health concerns. They inaccurately perceive their risks in that they most fear diseases that will not necessarily kill them and report little concern for diseases that are major causes of mortality. Women aged 65 and older are more than twice as likely to die of heart disease than to die of cancer, and more women die of heart disease than men each year.<sup>26</sup> Nonetheless, 61% of women in one study cited cancer as their most feared disease, and only 9% cited heart disease.<sup>15</sup> Women do not realize heart disease is the number one killer of women, that smoking can lead to heart disease, and that stress can make them sick; their main worry is cancer.<sup>27</sup> The American Heart Association indicates only 8% of women know that heart disease is a threat to their lives.<sup>28</sup>

In reality, women have many health problems. The National Women's Health Information Center noted that women identified their major health conditions as AIDS, osteoporosis, Alzheimer's, urinary incontinence, obesity, arthritis, and mental illnesses including major depression, anxiety, and phobic disorders.<sup>26</sup> The Cooper Institute for Aerobics Research surveyed all patients examined at the Cooper Clinic between 1970 and 1999 to study the relationships among physical activity, physical fitness, health, and function.<sup>29</sup> The 4,372 women who responded had an average age of 57.4 years and reported their major health problems as hypertension, osteoarthritis, breast cancer, and diabetes. Secondary concerns were heart attack, stroke, angina, and colon cancer. These studies demonstrate women's tendency to deny or underestimate their risk of disease.

This tendency of women to ignore their health has been attributed to various causes: (1) lack of information or lack of support from the medical community,<sup>30,31,32</sup> (2) physician disinterest in women after their childbearing years,<sup>31</sup> (3) the belief that women's medical concerns are psychosomatic,<sup>31</sup> and (4) caregiver assumptions that women will experience inevitable symptoms of aging that need no support or treatment.<sup>30</sup>

Concerns that women's health issues were being ignored prompted the rise of the women's health movement in the 1960's, which helped establish woman-centered reproductive services, health centers, and networks. This movement also protested the exclusion of women from clinical studies of heart attack and breast cancer.<sup>31</sup>; Not until 1993 did Congress direct the NIH to establish guidelines for the inclusion of women and minorities in clinical research.<sup>34</sup>

Despite women's denial of common health dangers, many evidently feel they can be active agents in creating their own lives.<sup>2</sup> The National Council on Aging found that women who reported they were active and healthy also felt that they could control how they aged. They also expected to live 5 years longer than did those who were not active. This population felt they could influence their health with weight lifting and understood the efficacy of vitamins. Overall, this population reported themselves to be in excellent or good health more frequently than did inactive adults (86% vs 66%). An earlier survey of 1,200 women aged 45-64<sup>15</sup> found they generally understood that diet and exercise were important aspects of prevention and management of diseases such as osteoporosis, heart disease, and diabetes.

Education level also impacts longevity. College-educated women have been found to live an average of 3 years longer than women with a high school education or less.<sup>35</sup>

A quick review of American women's magazines reveals that dieting has become a way of life for many women. Eating disorders are epidemic, and society has spawned a weight-loss cult that recruits young girls at an early age, striking 5%–10% of women.<sup>31,36</sup> Young expectant mothers may even risk their unborn infants' health with excessive dieting while pregnant.<sup>31</sup>

Cosmetic surgery is the fastest growing medical specialty in the United States,<sup>36</sup> increasing at a rate of 10% each year. Although women as young as 16 are having breast enlargements, the most common age for cosmetic surgery is the 30–50 age-group, which accounts for 40% of procedures. The most common procedure is liposuction.<sup>37</sup> Some observers theorize that a woman's preoccupation with her size and appearance may relate to efforts to be seen rather than become "invisible."<sup>3,31,34,36</sup>

This review indicates women's ambivalence, confusion, and denial about their bodies and their health behaviors. It underscores the need for research into the relationship between women's views of their aging process, their health risks, and their health behaviors.

## METHOD

### Participants and Procedure

One thousand women from all 50 United States and 5 other countries volunteered to participate in this research without compensation. In general, the sample comprised women who were healthy and physically active. The average age of respondents was 41 years, with a range from 12 to 86 years. This population was highly educated, with 14% postgraduate, 54% college graduate, 24% high school graduate, and 7.6% technical education.

Participants were mostly employed, with nearly 42% in professional positions, 15% housewives, 14% support staff, and 11% students. Of those who provided information on ethnicity, the following breakdown emerged: 94% were white, 2.2% were African American, 1.4% were Hispanic, 1.3% were Asian, and 1.1% were Native American or other. In sum, although there was substantial variability, the typical respondent was a white woman around age 40, who is college educated, married, and working as a professional. Compared to the average woman characterized by the 2000 United States Census, the sample in the present study is more likely to be married (61% vs 51%), more likely to have a college degree (54% vs 30%), and somewhat more likely to be employed (66% vs 61%). Our sample was much more likely than the national average to work as a professional (42% vs 18%) and less likely to work in a clerical or support role (14% vs 24%).

Paper-and-pencil inventories were given to a variety of women (including women in civic organizations, health clubs, and those recruited from local universities in southwest Missouri). Participants were given a brief overview of the research and asked to complete and return the forms in addressed, stamped envelopes. Six in 10 women use the Internet to look for health information, so the WomenSpk.com Web site was developed as an additional survey forum. A snowball technique was used in which participants were asked to encourage other women to visit the Web site to take the survey. In addition to recruitment by participants, "Web surfers" found the site when searching key words including "women," "aging," "health," "attitudes," and "perceptions." Interestingly, participants from universities and organizations responded most often to the key words "survey" and "questionnaire."

The Web site explained the purpose of the research and invited visitors to complete the survey instruments electronically. No attempt was made to screen the Web-based participants. Results were downloaded into a spreadsheet for statistical analysis. The paper-and-pencil and Web-based surveys were compared to each other statistically across demographics. No significant differences were found between the groups to suggest they should be analyzed separately.

## Instruments

Because researchers have heretofore discovered little about women's attitudes and perceptions of aging and their relationships to health behaviors, this preliminary study sought to map the terrain in a descriptive and explanatory fashion. These results can then be used to establish patterns of correlations with health behaviors and health risks. Therefore, a self-report survey, the O'Reilly Women's Aging Inventory was developed in keeping with generally accepted practices for health attitude scale construction.

The conceptual model arises in part from the principal author's 20+ years of clinical practice. Additionally, items were generated through research reviews, interviews, clinical and personal observations, and focus groups of subject matter experts in formal and informal discussions.

A jury of experts (including clinical psychologists, educators, businesswomen, marketing specialists, health and fitness professionals, and many representatives of the target audience) reviewed and edited the items, suggesting changes for clarity. Items were revised in keeping with jury recommendations and with those of small groups who took the test.

The final aging inventory survey was trimmed to 45 questions. Criteria for item selection included easy reading level, clarity, and simplicity. Open-ended questions were included to encourage a greater range of responses and less conformity to a response set. The expert panel concluded that the final items covered the subject areas with some overlap reflecting the interrelationships among perceptions of aging benchmarks, aging concerns and health behaviors. The survey has a Flesch Reading Ease score of 75.3 (standard documents aim for a score of 60 to 70, with a higher score being easier to read). The Flesch-Kincaid Grade Level score<sup>41</sup> of 5.2 indicates a fifth-grader can understand the survey. In addition to the aging inventory, attitudinal and demographic items obtained information including age, marital status, ethnicity, profession, employment, education level, health status, health concerns, exercise frequency, method of weight management, use of plastic surgery, and church membership. All participants signed a release indicating their informed consent.

A variety of question formats were used in the 2 instruments. For example, multiple-choice questions assessed issues such as perceived health status. Subjects were asked to circle one of the choices (Excellent, Good, Average, I have health concerns, or I have major health problems) or to write in a specific health concern. The survey provided a list of ages (25, 30, 35, 40, 45, 50, 55, 60, 70+), and subjects were asked to write in the ages at which they believe a woman is young, middle-aged, aged, and old.

Yes or No questions addressed topics such as exercise frequency, weight management, use of plastic surgery, and fear of growing older. Those who answered in the affirmative used Likert-type scales and provided additional information to elaborate their responses.

## Data Analysis

Data from the survey responses were coded and entered into SPSS 10.0, where they were checked for out-of-range values and prepared for analysis. A variety of statistical procedures were employed in exploring the data set, including basic descriptive statistics, cross tabulations with 2-way chi-square tests, t-tests for independent samples, and one-way ANOVAs, as appropriate to answer the particular research question.

## RESULTS

In all, 1000 surveys (784 from the Internet and 216 paper and pencil) were sufficiently complete for inclusion in the present study.

### Perceptions of Aging Benchmarks

Summary statistics revealed substantial variability in aging benchmarks (Figure 1). The greatest variation in an aging marker occurred for the Old benchmark, with answers ranging from 69.63 years to 79.95 years. The older the woman answering the question, the more likely she was to place the young, middle-aged, and aged benchmarks at more advanced ages ( $r=.165$ ;  $P<.001$ ) ( $r=.248$ ;  $P<.001$ ) ( $r=.166$ ;  $P<.001$ ) respectively. There was no significant relationship between respondent age and placing of the Old marker ( $r=.062$ ;  $P=.067$ ).

An ANOVA revealed that the healthiest and most educated women were significantly more likely to say the Aged benchmark occurs at a later age. For example, postgraduate-level women said the Aged benchmark occurred later (mean age=66 years) than did either high school- or college-educated women (both means were 56 years;  $P=.005$ ). The healthiest group was also more likely to perceive the Aged benchmark to occur later ( $P=.054$ ).

The respondents who perceived themselves to be the healthiest also perceived middle age as occurring an average of 4.5 years later than did those who assented to having health concerns ( $P=.0001$ ). However, respondents who perceived the middle-aged benchmark to occur later were also significantly more likely to mention concerns about problems with bones, muscles and joints ( $P=.087$ ), and eyes and ears ( $P=.102$ ).

### Health Status and Concerns

Members of this sample regarded themselves as quite healthy, with 31% reporting excellent health, 43% good health, 11% average health, and 16% reporting health concerns (Figure 2). Professional and technical workers were more likely to rate themselves in excellent health, whereas the unemployed and retired respondents were most likely to reveal having health concerns ( $X^2(24)=59.96$ ;  $P<.001$ ). Higher levels of education were related to better health status. Postgraduate women were most likely to report being in excellent health, whereas women having a high school or technical education were most likely to admit having health concerns ( $X^2(9)=20.58$ ;  $P=.015$ ).

Women who did not fear aging reported excellent health significantly more often than did women who feared aging (36% vs 25%); further, those who feared aging were more likely to express having health concerns (20% vs 12%;  $X^2(3)=19.25$ ;  $P<.001$ ) than those who did not have such fears. Interestingly, although those who worried about aging were not more likely to exercise regularly, they were significantly more likely to diet ( $P=.001$ ).

Responses to an item specifying a type of worry, namely the ability to care for themselves and their problems today or in the future, also did not correlate with regular exercise. Instead, those who were concerned about ability to care for themselves 20 years hence were significantly more likely to diet than were those who were not concerned ( $r=-.062$ ;  $P=.05$ ). Those who assented to having health concerns were significantly more likely than those with excellent, good, or average health to doubt their ability to care for themselves and their problems in 5, 10 or 20 years ( $P=.0001$ ).

Additionally, there were significant differences ( $X^2(3)=43.97$ ,  $P<.001$ ) in health status between those who exercised and those who did not. Those who reported regular exercise rated their health as excellent significantly more often than did non-exercisers (39.5% vs 22.2%).

### **Exercise, Weight Control, and Appearance Management**

In response to the demographic questions regarding exercise frequency, 496 respondents (51%) indicated that they exercised on a regular basis, with a reported average of 3.8 times per week ( $SD=1.61$ ). The modal number of exercise sessions was 3 per week.

The data revealed a significant inverse relationship between perception of early aging and tendency to exercise. That is, those who perceived the aging benchmarks to occur earlier were slightly more likely to exercise regularly ( $r = -.09$ ;  $P=.004$ ).

Those who perceived the Aged and Old benchmarks to occur later were more likely to diet ( $r=.06$ ;  $P=.046$  and  $r=.05$ ;  $P=.039$ , respectively) than were those who set the benchmarks at a younger age. Although only 6% of respondents indicated they had weight concerns, 36% (346/968) indicated they used diets to manage their weight. When asked to list the weight-management strategies they employ, 59% of the 406 valid responses indicated they monitor their eating habits, and only 3% acknowledged using exercise for weight management. Those with health concerns were significantly less likely to indicate they monitored their eating habits to control weight than were those who reported excellent health (67% vs 85%;  $X^2(3)=10.62$ ;  $P=.014$ ).

Of the 954 valid responses to the question about plastic surgery, 10% answered affirmatively. The most frequent category was facial surgery (41%), followed by breast augmentation (30%), breast reduction (12%), tummy tuck or liposuction (9%), spider veins (1%), and other (14%). Interestingly, one of the most significant correlations in this study occurred in relationship to breast enlargement. The younger a woman perceived the Young benchmark to occur, the more likely she was to have undergone breast augmentation surgery ( $r=-.215$ ;  $P=.028$ ).

## **DISCUSSION**

Overall, although women varied in their views of the onset of each of these markers, the least variability occurred for the Young benchmark ( $SD=7.95$  years) and the Middle-aged benchmark ( $SD=9.31$  years). The responses to the health-concerns items were more startling. In the present study, women did not express concern about heart disease or cancer although these are the 2 most frequent killers of women.<sup>16,18</sup> In more than 84,000 women who were followed during the Nurses' Health Study, low risk of cardiovascular disease was associated with adherence to lifestyle guidelines including diet and exercise. However, only 3% of that study population actually qualified for this low-risk category. It is

unlikely that cardiovascular risk is absent from the sample in the present study.

The current study affirms previous findings<sup>15,29</sup> that many women may misperceive their health risks. In fact, participants in the present study, unlike those in a previous study,<sup>26</sup> did not mention concerns about AIDS, Alzheimer's, urinary incontinence, or mental illnesses including major depression, anxiety, and phobic disorders.

This disregard of health concerns may have tremendous impact on our society as the population ages. Although it might not be surprising that respondents in their mid-40s disregard health problems that may not manifest for another 20 years, many participants in the present study were much older. Also, it is troublesome that those who do worry about aging adopt the behavior of dieting rather than exercise to manage their weight. This is an unbalanced strategy because both diet and exercise are essential for long-term health. Indeed, a National Institute on Aging study showed that exercise conferred more health benefits than a dietary approach did.

In the present study, highly educated women on average perceived the Aged benchmark to occur later. This might relate to a number of factors, including the fact that highly educated women actually live longer, that they enter the workforce later, and that they may choose to work to an older age.

About half the subjects in the current study (51%) said they exercise regularly. This is somewhat lower than an earlier survey<sup>21</sup> in which 60% said they exercised regularly. We found that women who rate themselves as healthy also exercise on a regular basis, a finding that confirms earlier reports.<sup>15,35</sup>

### **Exercise, Weight Control, and Appearance Management**

In the weight-obsessed American culture, the results from the current study are puzzling. Although only 6% of current respondents admit a weight concern, 36% say they use diets for weight control, and 59% say they monitor their eating habits. These response groups may overlap, and a future study might investigate how weight-management behaviors relate to obesity as a risk factor for cardiovascular disease.

Social researchers have noted that women's repeated exposure to unrealistic images of beauty in the media drives them to pursue an impossible body type. As one societal observer states: "It's great for capitalism, but terrible for women's self-esteem and body image." It is especially troubling to see that women's concerns about their ability to age successfully may be subverted into dieting rather than behaviors that might more positively affect their aging process.

In the current study, 10% reported some form of plastic surgery, with the most frequent procedure being facial surgery. It is interesting that those who place the Young benchmark at the lowest age were most likely to undergo breast augmentation, indicating it may be associated with a concern for retaining their youth.

## CONCLUSIONS

The results of the present study should be interpreted with caution because of several limitations. The use of a self-report instrument created a mono-method bias. The self-selection process also skewed the sample for this cross-sectional study, which does not accurately represent the population at large. This is an ongoing project with plans for future longitudinal study and retesting. Most of the participants volunteered for future retest, interviews, or other participation, underscoring the importance women attach to these issues.

Future studies should use a more ethnically diverse population than this primarily white sample. In addition, the results will be more comparable to national studies and related research if future surveys use the standard self-rated health and self-rated function response categories (Good, Fair, and Poor) and the federal labels for older adults (Older Adult and Oldest Old).

Another limitation of this study is that it did not include women who have little or no education, a major demographic factor that would place them at higher risk for poverty, physical insecurity, disease, and dependence. Future studies should include a higher percentage of women in nonprofessional occupations.

Despite this study's limitations, the dramatic absence of women's reported health concerns in the current study, along with the inclination to diet rather than exercise in response to aging concerns, cries for further research. It should raise an immediate alert for those working to promote women's health. If women are this reluctant to mention a health concern in an anonymous survey, they may also be withholding information from their caregivers. In addition, the health behavior of dieting is clearly less likely than exercise to help women age successfully.

Women buy or influence the purchase of 80% of all consumer goods and services, and they influence 80% of all health care decisions.<sup>17</sup> Although women also comprise 80% of most primary practices (Personal communication, Catherine Grellet, MD, [grellet@ibm.net](mailto:grellet@ibm.net), September 28, 2001), most research to date has focused on women's buying habits rather than their health behaviors.

If social marketing principles are to be used to deliver health messages effectively, health professionals need a deep understanding of differences among population subgroups. , Although gender and age have been accepted as classic variables<sup>35</sup> this study makes clear there are important attitudinal and perceptual differences that create subsets that social marketers may find useful. By gaining a clearer understanding of subgroups in the female health-care market segment, caregivers can better target efforts to educate women about the nature of successful aging and in preventive and maintenance health behaviors.

In spite of its limitations, this study provides useful information about previously unexplored relationships among women's perceptions of aging benchmarks and their health habits and aging concerns.

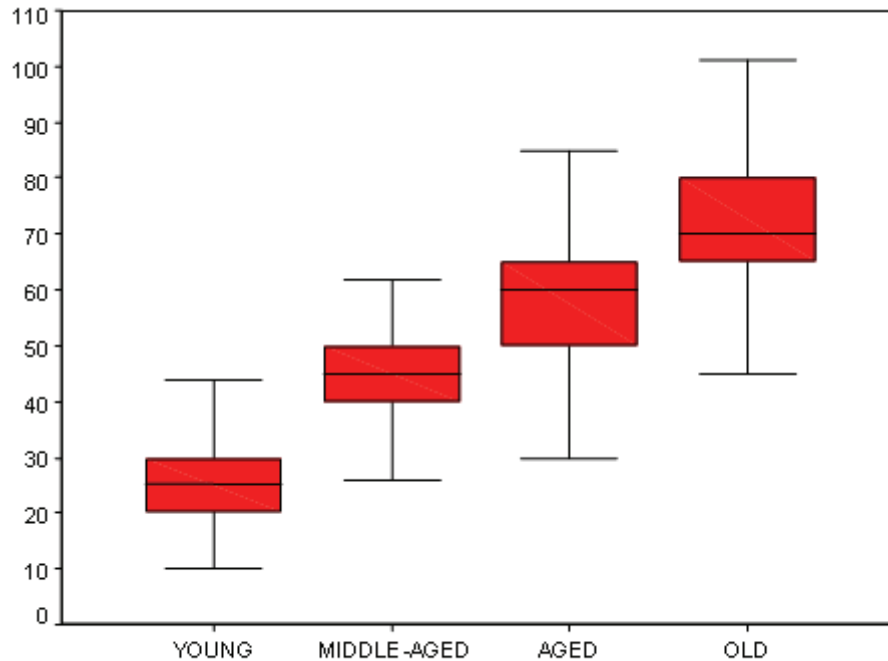


Figure 1: Range of Ages Reported for Each Category

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