

The Adult Wellness Report 1999



By

Leonard L. Gibbons, Dr.P.H., R.D.
Health Promotion Coordinator
The Ministry of Health and Family Services
Government of Bermuda

The Adult Wellness Report 1999

It has been estimated that improved control of behavioural risk factors, such as tobacco use, alcohol intake, drug use, lack of exercise and poor nutrition could prevent ½ of all premature deaths, 1/3 of all cases of accidental disability and ½ of all cases of chronic disability (*Guide to Clinical Preventive Services: Report of the U.S. Preventive Service Task Force*). This statement underscores the fact that many of the poor health outcomes we experience in life are the result of our own lifestyle choices. Further, if we take the necessary steps towards changing the behavioural risk factors that lead to premature disease, disability and death we will reap the benefits of a healthier, happier, and longer life.

To adequately address the health behaviours that contribute to ill health among Bermudians, we began with a wellness survey of the adult population. This health assessment tool will provide us with the baseline data necessary to establish health goals and objectives. Health assessment is step 1 in a 5-step process (Assessment, Targeting, Intervention, Tracking and Outcomes) aimed at assessing health risks, increasing awareness and educating and promoting voluntary behavioural change to improve the health and wellbeing of the people of Bermuda.

The adult wellness survey addressed the following areas:

- Major health concerns in Bermuda
- Obesity and weight control
- Physical activity and health
- Wellness and occupational health
- Health interest/readiness to change
- Eating habits and health implications
- Stress, health and coping skills
- Addictions, dependencies and health
- Health status and health perceptions
- Preventive counseling services
- Woman's health
- HIV/AIDS and sexual practices

Because interviewing every person in Bermuda is not economically feasible, a scientifically selected telephone sample was interviewed. This report includes feedback from 1,056 adults' aged 18 and older. This random sample (by telephone codes) involved telephone interviews at private dwellings between the months of July and September of 1999. The data file was weighted by race to match the distribution by race in the 1991 Census of Population and Housing.

The Ministry of Health and Family Services, other health agencies, insurance groups, businesses, community groups, schools and health professionals can make good use the findings from this study. This information can be used to assist agencies in creating policies, formulating health objective, setting priorities and designing health programmes, educational tools and media campaigns that will educate, motivate and support the people of Bermuda as they strive to live well and live healthy at the same time.

Executive Summary

1. Top 10 Health Concerns

In our efforts to improve the health practices of Bermudians it is important to address the health needs and concerns as identified by the community at large in addition to the priority areas identified by health professionals and other experts.

We included the distribution of the respondents in the following areas of health concern:

(1) AIDS/Sexual diseases-58%, (2) cancer-49%, (3) drugs/alcohol abuse-43%, (4) diabetes-25%, (5) heart disease-22%, (6) obesity & food related diseases-20%, (7) stress-12%, (8) health care cost-7%, (9) smoking-5% and (10) the environment-5%.

2. Obesity

Obesity is an important risk factor in a number of major health problems – diabetes, hypertension, coronary heart disease, cancer (colon, rectum & prostate in men and gallbladder, breast, uterus and ovaries in women), gout, osteoarthritis and more. Given the health consequences of obesity and the high percentage of Bermudians (1 in every 3 adults) with this health concern, we should include obesity as a major health priority.

- 1 in every 3 adults in Bermuda is obese
- 1 in every 2 adults is above a healthy body weight
- 1 in every 2 adults is also attempting to lose weight

The percentage of adults with obesity increased as they ate more of following foods or increased the frequency at which they ate between meals: (1) fast foods, (2) fried foods, (3) soda & sweetened drinks, (4) baked goods, (5) refined grains and (6) high fat dairy products.

The percentage of adults with obesity was lowest for those who practised one or more of the following eating habits: (1) consuming low fat dairy products, (2) eating 5 or more servings of fruit & vegetables/day, (3) eating mostly whole grains, (4) eating breakfast everyday, (5) eating 1 to 3 serving of beans/day and (6) being a vegetarian.

3. Physical Activity

Inactivity is a risk factor associated with premature death, coronary heart disease, colon cancer, diabetes, hypertension, osteoporosis, weight gain, a decreased ability to cope with stress, lack of muscle tone, more colds and other health problems. Given the health consequences of being inactive and the high percentage of Bermudians (1 in 3 adults) who do not engage in any form of physical activity, we should include the promotion of physical activity as an important indicator of health and wellness.

- 1 in every 3 adults does not engage in any form of physical activity
- 1 in every 4 adults who exercise (walk, run, cycle, dance etc.) do this form of activity 3 or more times a week
- 1 in every 4 adults does vigorous exercise 4 or more times a week
- The highest percentage of obesity was among the physically inactive or those who exercised for 2 or less days a week
- The highest percentage of obesity was among those watched 4 or more hours of TV per night
- The lowest percentage of obesity was among those with an active lifestyle or those who exercised for 4 or more times/week (30+ minutes per session)
- The lowest percentage of obesity was among those who viewed less than 1 hour of TV per night

4. Wellness and Occupational Health

The work environment can play a significant role in either promoting or hindering healthy lifestyle choices and behaviours. Well designed wellness programmes have resulted in improved employee health status, reduced cost from workers compensation and insurance, fewer on-the-job accidents, greater employee satisfaction, greater productivity, improved corporate image and decreased absenteeism. In this study, wellness at work was linked to lower stress scores and better weight control. We need to increase the level of worksite wellness programmes from the present level of 16 percent among working adults. More than 80% of employees expressed an interest in a work sponsored wellness programme.

Job Satisfaction

- Nearly 1 in every 4 adults (23%) was dissatisfied with their work life
- Job dissatisfaction was linked to higher stress scores
- Job satisfaction was linked to lower stress scores

Precautions Against Job Related Health Hazards

- 1 in every 4 adults (26%) believe their employers do not take enough precautions against work related health hazards
- Working with health hazards was associated with higher stress scores
- A lack of health hazards on the job was linked to lower stress scores

Health Hazards at Work

In this survey we identified 17 different occupational health hazards. The top 8 identified health hazards needing attention where: (1) bad air, (2) excessive heat or cold, (3) eye strain, (4) poor work space or not enough, (5) strain from a poorly designed workspace or long periods of standing or sitting, (6) not enough safety training, (7) too much noise, and (8) excessive litter or mess. The numbers of adults who identified hazards needing

attention ranged from 28% for bad air (fumes or poor ventilation) to 12% for health hazards six, seven and eight.

Work Sponsored Wellness Programmes

- 16% of respondents indicated a job wellness initiative
- Employees on jobs with a wellness programme had lower stress scores
- Employees on jobs without a wellness programme had higher stress scores

Participation in Job Wellness Programmes

- Employees who participated in a wellness program had the lowest stress scores
- Non-participating employees had the highest stress scores

5. Readiness to Change Health Habits

Motivation can be defined as a state of readiness to change. To effectively motivate others to make lifestyle changes, we must match our interventions with the readiness level of the individuals or population we desire to influence in a positive way. Below we identified health interest where adults can be targeted through health programmes.

In this section we looked at 19 health interest areas. The top 5 areas where people indicated an intention to change within the next 12 months include: (1) weight loss, (2) improve eating habits, (3) begin an exercise programme, (4) stress management, and (5) join a health club. For each health area 20% or more of the adults responded favourably.

6. Eating Habits and Health Implications

Dietary excess and imbalance is associated with coronary heart disease, cancer, stroke, diabetes, atherosclerosis, high blood pressure, obesity, dental diseases, osteoporosis and gastrointestinal diseases. It is now clear that diet contributes in substantial ways to the development of these diseases and that modification of diet can contribute to their prevention and control. Given the finding that 1 in every 4 adults or more could benefit by changing their eating habits, healthy eating should be a health promotion priority.

One in every four adults (25%) or more could benefit by eating breakfast daily, increasing their consumption of whole grains, fruit, vegetables, beans and water intake. The same numbers of adults could benefit by eating less between meals and decreasing their consumption of high fat dairy foods, high fat meat, baked goods, salty foods, soda and sweetened drinks.

7. Stress, Health and Coping Skills

Many people describe stress as something that happens to them – the problems or concerns they have to deal with. However, it is how we respond to the stressors of life that determines if we will rise to the occasion or become all unraveled and reap the negative consequences (mental, physical & social) of prolonged stress overload. Given

the level (1 in every 4 adults) of stress overload (an indication of poor coping skills) in the adult population and the negative consequences of prolonged stress overload, it is important to include emotional health as a major health promotion priority.

- One in every four adults (25%) may be experiencing stress overload
- Stress overload was highest in people who used TV and/or alcohol to cope
- Stress overload was lowest in those who used prayer, talking to someone and/or exercise to cope with stress
- The higher the level of educational attainment or income the lower the level of stress overload scores
- Having a good social support system of family or friends, being married and living in a household of five or more individuals was associated with lower stress scores
- The lack of a social support system, being single and living alone was associated with higher stress scores

8. Addiction, Dependencies and Health

An addiction has been defined as a love trust relationship with a substance, individual or process that gives the illusion that real needs are being met through a mood change. Healing takes place when the illusion is replaced with the real thing – need fulfilment. We should give priority to nurturing the people of Bermuda by meeting their physical, social, mental and spiritual needs from an early age and thus reduce the likelihood that they will be attracted to the illusions that leave them empty and unfulfilled.

Alcohol

Given the intake of alcohol within the drinking population (2/3 drink 3 or more drinks at a time) and the health risk (hemorrhagic stroke, decreased immune function, accidents, several cancers, osteoporosis, gastritis, brain shrinkage, PMS, confused thinking, depression, an increase in risky behaviours, heavy drinking and more) increased with even moderate drinking (1 to 2 drinks a day), strategies for reducing the consumption of alcohol among adults should be promoted.

Adults who Drank Alcohol in the Past Month

- 2 out of every 3 (67%) adults drank 1 or more drinks of alcohol in the past month
- 21% drank less than 1 drink in the past month or no longer drink alcohol

Average Alcohol Intake on Drinking Days

- On drinking days more than 2/3 (77%) of alcohol consumers drank 3 or more drinks at one time

Alcohol Abuse based on the CAGE Questionnaire

- We suspect that 12% of the population are abusers of alcohol
- 11% of the population are strongly indicated as being abusers of alcohol

- Almost ½ (44%) of the adults who were strongly indicated as being abusers of alcohol had moderate to high stress overload scores
- Only 21% of adults with no indication of alcohol abuse had moderate to high stress overload scores

Number of Binge Drinking Occasions

- 1 in every 2 (56%) adults who drank alcohol binged (5 or more drinks/occasion is considered heavy drinking) at least once in the past month
- 1 in every 5 (21%) adults who drank alcohol in the past month binged 2 or more times
- As the number of binge drinking occasions increased the percentage of individuals with moderate to high stress overload scores increased

Mood Altering or Sleep Enhancing Drugs

- 6% of adults reported using these drugs daily
- 11% of adults reported using these drugs several days a week
- 7% of adults reported using these drugs a few times a year
- The regular use of drugs to affect moods, relax or improve sleep habits was associated with high numbers (69%) with stress overload scores
- Only 19% of the non-users had moderate to high stress overload scores

Smoking

Given the many health problems associated with smoking (several cancers, emphysema, asthma, chronic bronchitis, heart disease, insomnia, early wrinkles, shortness of breath, back problems, hypertension, diabetes, peptic ulcer and more) and the findings that 17% of adults still smoke and another 28% are exposed to second-hand smoke everyday, smoking cessation should be an important public health priority.

Current Smoking Habit

- 17% of adults currently smoke cigarettes
- 38% of adults have quite smoking
- Looking at just the adults who have ever smoked tobacco, 2/3 (69%) have quite the habit, 26% smoke every day and 5% report smoking some times or rarely
- Moderate to high stress overload scores were present in 20% of former smokers and 37% of current smokers

Cigarettes Smoked on an Average Day

- 40% of smokers smoke 11 to 20 cigarettes
- 39% smoke 6 to 10 cigarettes
- 21% smoke 1 to 5 cigarettes
- Moderate to high stress overload scores were present in 27% of individuals who smoked 1 to 5 cigarettes and 44% of those who smoked 11 to 20 cigarettes a day

Attempts to Quit Smoking in the Past 12 Months

- 44% of current smokers have attempted to quit smoking (1 or more times) in the past 12 months

Frequency of Exposure to Second-Hand Smoke

- 4 out of 5 adults (82%) are exposed to second-hand smoke at least once a week
- 28% of adults are exposed to second-hand smoke every day

Caffeine Containing Drinks

While caffeine containing drinks are considered safe by most people, it is important to keep in mind that coffee, tea and cola drinks can cause nervousness, irritability, coping problems, PMS symptoms, insomnia, muscle twitching, elevated temperature, irregular heart rhythms and heartburn. In our efforts to promote a healthy community it is important to consider if caffeine-containing drinks are contributing to any of these unpleasant symptoms.

Average Intake of Coffee, Tea and Cola

- 1 in every 2 adults (47%) drinks coffee or tea every day
- 1 in every 4 adults (24%) drinks caffeine-containing soda every day
- Moderate to high stress overload scores were present in 22% of non-drinkers of coffee, tea or cola and 31% of those who drank 3 or more servings of coffee, tea and/or cola a day

9. Health Status and Health Perceptions

Health status is a quality of life indicator. It influences home life, job performance, social interactions and the ability to live life to the fullest. In this survey, 1 in 3 adults rated their health as fair to poor. At least 30% of adults' report using prescription drugs every day. Given these findings and the fact (for most of us) that what we do with our bodies and what we put into our bodies has more to do with our state of health than our genetic inheritance, it is vital that we bring to the forefront the link between lifestyle practices and both disease outcomes and recovery from illness.

Physician Indicated Health Problems

In this survey we reported on fifteen-health problems. The 6 most frequent health problems were: (1) allergies, (2) asthma, (3) migraine headaches, (4) tension headaches, (5) depression and (6) anemia. The number of adults responding in these six areas ranged from 21% for allergies to 10% for depression and anemia.

Rating of Health Status

- 1 in every 3 (1/3) adults rated their health as fair to poor
- 2 in every 3 (2/3) adults rated their health as very good to excellent

- Freedom from stress overload scores was identified in 70% of participants who rated their health as excellent, 64% of participants who rated their health as very good and 53% of participants who rated their health as fair/poor

Today's Health Compared to a Year Ago

- 1 in 4 adults (27%) saw themselves better in health today compared to a year ago
- 63% reported no change while 10% reported a worse state of health than a year ago
- About 22% of the adults who viewed themselves about the same had moderate/high stress overload scores while 40% of the participants who saw themselves worse off had this same range of stress scores

Physical Health in the Past Month

- More than 2/3 of adults (73%) reported no days of poor physical health
- 7% indicated 5 or more days of poor physical health
- 7% indicated 3 to 4 days of poor health
- Five or more days of poor physical health (i.e. physical health or injury) was associated with the highest number (45%) with stress overload scores

Mental Health in the Past Month

- More than 2/3 of adults (71%) reported no days with poor mental health (stress, depression & emotional problems)
- 10% indicated 5 or more days of poor mental health
- 7% indicated 3 to 4 days of poor mental health
- Three or more days of poor mental health was associated with the higher numbers (40.5% to 58.2%) with stress overload scores

Days of Physical Limitation in the Past Month

- 80% of adults did not miss a day from work or other activities due to poor physical or mental health
- 5% indicated 5 or more days of physical limitation
- 4.3% indicated 3 to 4 days of physical limitation
- Three or more days of physical limitation (i.e. unable to work or do other physical activity) due to poor physical or mental health was associated with the higher numbers (52.2% to 65.3%) with stress overload scores

Prescription Drugs

- At least 30% of adults used prescription medications every day
- 7% of adults used 3 or more different medications a day
- 1 in 4 adults (23%) reported using 1 to 2 different prescription medications a day
- 40% of the adults who took three or more different medications a day had moderate to high stress overload scores while only 22% of the non-users had this same range of stress scores

Non-Prescription Drugs

- 21% of adults used non-prescription medications every day
- 41% of the adults who took two or more different non-prescription medications a day had moderate to high stress overload scores while only 23% of the non-users had this same range of stress scores

10. Preventive Counseling Services

Regular preventive exams are an essential part to a healthy lifestyle. They become even more important after the age of forty. In our efforts to promote preventive counseling services it is important to address the finding that 30% or more of adults could benefit from receiving the following services: (1) blood sugar and cholesterol checks, (2) prostate exams in men, and (3) education of patients by health professional on the importance of exercise and eating habits in lowering the risk of a number of health problems.

Physical Exam

- At least 80% of adults have had a physical in the past 2 years
- 1% of adults have never had a physical exam

Blood Pressure (BP) Check & Reading

- At least 89% of the participants have had a BP check in the last 1 – 2 years
- Most (95%) of the participants indicated that their last BP reading was normal

Blood Sugar Test & Reading

- 2 out of 3 (64%) adults have had their blood sugar taken in the past 2 years
- Most (96%) of the participants indicated that their last blood sugar reading was normal

Blood Cholesterol Test & Reading

- Approximately 70% of the participants have had their blood cholesterol taken in the past 5 years
- 4 in every 5 (83%) adults indicated that their last blood cholesterol reading was normal
- Just over 2% reported a high cholesterol level at their last cholesterol reading
- 15% did not know or were not sure of their blood cholesterol level

Prostate Exam

- Approximately 40% of the men 40 and older have never had a prostate exam

Education on Eating and Health from a Health Professional

- Nearly 1 in every 2 adults (42%) has not received education on eating practices that could lower their risk of health problems

- Of those who received education 32% received advice in the past 12 months

Education on Exercise and Health from a Health Professional

- 1 in every 3 (34%) adults has not received education on how exercise could lower their risk of health problems
- Of those who received education 40% received advice in the past 12 months

11. Women's Health

More than 70% of women are regularly participating in preventive exams that test for specific cancers in women. While we applaud most women for their effort toward disease prevention, we must support and motivate those who have not taken these preventive measures.

Women Who Ever Had a Mammogram

- Most (90%) women 40 and older have had a mammogram
- ½ (53%) of all women 18 and older have had a mammogram

Length of Time Since Last Mammogram

- 3 in every 4 women (77%) 40 or older have had a mammogram in the past year
- 1 in every 4 women (23%) had a mammogram over a year ago

Women Who Ever Had a Clinical Breast Exam

- Most (92%) women 40 and older have had a clinical breast exam
- 87% of all women 18 and older have had a clinical breast exam

Length of Time Since Last Breast Exam

- 4 in every 5 (83%) women 40 or older have had a breast exam in the past year
- 2 in every 3 (74%) women 18 and older have had a breast exam in the past year

Women Who Ever Had a Pap Smear

- Most (95%) women 18 and older have had a Pap Smear

Length of Times since Last Pap Smear

- About 3 in every 4 (73%) women 18 or older have had a Pap Smear in the past year

12. HIV, AIDS and Sexual Practices

High-risk behaviours contribute the major burden of HIV and AIDS cases in the world today. In this study 21% of adults indicated that they changed their sexual behaviour (in the past year) based on their knowledge regarding HIV. This result supports the role of health promotion and education in influencing health behavioural change. The role of health professionals in educating their patients must be encouraged given the finding that 1 in every 2 adults reported no education or information regarding sexual practices or family planning.

Professionals, Patients and Sex Education

- 1 in every 2 (55%) adults has not received any education or information from their doctor as it relates to sexual practices or family planning

Have You Ever Been Tested For HIV?

- 1 in every 2 (52%) adults indicated that they have been tested for HIV

What was the Main Reason for Your Last HIV Test?

- About 41% of adults indicated other or unstated, 27% pregnancy, 12% to find out if they had HIV and 12% related to the hospital or surgery

Changes in Sexual Behaviour in the Past 12 Months due to Increased Knowledge Regarding HIV

- About 21% of adults indicated they changed as result of increased knowledge regarding HIV
- 29% of the participants did not answer this question on sexual behaviour change

Changes Related to Sexual Partners and Abstinence in the Past 12 Months

- 29% of adults decreased their number of sex partners or became abstinent
- 40% of the participants did not answer the question on sex partners
- 45% of those who responded to abstinence in the past 12 months were still abstinent
- 70% of the participants did not answer the question on abstinence

Changes Related to Condom Use in the Past 12 Months

- 23% of adults reported they always use a condom for protection
- 39% of the participants did not answer the question on the use of condoms

The 5 Leading Causes of Death and Top 10 Health Concerns

The most common priorities for health promotion are the leading causes of death and the changeable risk factors associated with them. The five leading causes of death in Bermuda (1997 data) are circulatory diseases (165), cancer (129), communicable diseases including 14 with AIDS (34), Diabetes (22) and external causes of injury and poisoning (19). These leading causes of death are related to one or more of the top 10 health concerns of adults and the associated risk factors – the logical areas for health promotion programmes and initiatives. Teen sex & pregnancy 5% (49), asthma 4% (47) and high blood pressure 4% (46) were the three health concerns following environmental health.

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Risk Factors	AIDS/sexual diseases 58% (630)	Cancers 49% (527)	Drugs/alcohol abuse 43% (466)	Diabetes 25% (269)	Heart disease 22% (243)	Obesity, food & disease 20% (212)	Stress/distress 12% (130)	Health care & insurance cost 7% (75)	Smoking 5% (59)	Environment 5% (57)
Behavioural factors										
High blood pressure					•			•		
High cholesterol					•			•		
Poor dietary practices		•		•	•	•	•	•		
Obesity		•		•	•		•	•		
Lack of exercise		•		•	•	•	•	•		
Stress/poor coping skills		?	•		•	•	•	•	•	
Smoking		•	•		•		•	•		•
Marijuana			•				•	•		
Alcohol misuse	•	•	•		•	•	•	•		
Drug misuse	•		•		•		•	•		
Sexual practices	•	•						•		
Biological factors		•	•	•	•	•		•		
Environmental factors										
Radiation exposure		•						•		
Workplace hazards		•			•		•	•		•
Environmental contaminants		•			•			•		•
Infectious agents		•						•		
Social factors*	•	•	•	•	•	•	•	•	•	
Lack of medical access		•		•	•			•	•	
Educational factors										
Lack of knowledge, skills & or motivation to take action	•	•	•	•	•	•	•	•	•	•
Misleading info. & media	•	•	•	•	•	•	•	•	•	•

* *Social factors* - This residual category of risk factors includes a variety of less well defined lifestyle factors and conditions of living related to social relationships, social support & connectedness, social pressures, and socio-economic status.

Obesity and Weight Control

An inactive lifestyle and poor dietary practices and eating behaviours are major contributors to obesity, preventable illnesses and premature death. Obesity is defined as body weight 20% or more above ideal range or a healthy level for age and sex. For example, if an individual's healthy weight is 100 pounds and they weigh 120 pounds, they would be considered obese. Overweight is defined as a body weight 10% to 19% above ideal body weight. Body Mass Index (BMI) is one among several methods used to estimate weight status. For most individuals (besides children, pregnant women, the frail elderly or serious body builders) BMI is a good indicator of how fat or lean you are. Based on the World Health Organization, a BMI of 19 to 24 is considered healthy (lowest risk of health problems), a BMI between 25 to 29 is considered overweight and a BMI of 30 or higher is considered obese (highest risk of health problems).

Obesity is associated with increased risk of the following health problems. Type II diabetes, hypertension, high levels of blood fats including total cholesterol and LDL cholesterol, coronary heart disease, cancer (colon, rectum and prostate in men and gallbladder, breast, uterus, and ovaries in women), gall bladder disease, gout, osteoarthritis and complications during pregnancy or surgery.

For obese individuals who are dealing with one or more of the following psychosocial factors - emotional eating, a negative body image, discrimination and stereotypical responses by the non-obese population - the journey towards a more healthy weight is often made more difficult or never achieved. It is therefore important to assess for and address these factors if present in addition to exercise and eating practices aimed at reducing body weight to a healthy level.

Obesity in Bermuda

- 1/3 of adults are obese - 38.7% males (BMI \geq 27.8) and 31.5% females (BMI \geq 27.3)
- 57% of adult are overweight and obese (BMI \geq 25)
- 1/3 (32.4%) of U.S. adults are obese - 33.3% (range = 23.0 to 39.6) of males and 31.4% (range = 21.9 to 38.4) of females (1998 data)

Obesity and Health Outcomes

The obese when compared to those of ideal body weight, had significantly higher levels of the following health concerns. While these findings cannot prove a cause and effect relationship in the comparisons addressed, this study supports the conclusions of other scientific studies – a connection exists between excess body fat and poor health status. Poor physical health often leads to decreased ability to cope with life's daily stressors.

- Present health rating of fair to poor
- Present health rating of somewhat worse to much worse than a year ago
- Trouble coping (sometimes or often) with current stress load and ulcers

- Moderate/high stress overload and doctor indicated depression & tension headaches
- Doctor indicated stroke and coronary heart disease
- Higher number of days with poor physical and mental health in the past 30 days
- Higher number of days lost from work or other activities due to poor physical or mental health in the past 30 days

Although the results for doctor indicated diabetes was insignificant, 31% of individuals in this group were obese compared to 20% of the respondents who reported no doctor indication of diabetes.

Weight Control Practices

Attempting to Loose Weight

- ½ of the respondents are trying to loose weight
- 73% of those attempting to loose weight are overweight
- 41% of those not attempting to loose weight are overweight

Attempting to Maintain Present Weight Status

- 64% are trying to maintain their present weight
- 39% of those attempting to maintain weight are overweight
- ½ of those not attempting anything are overweight

Exercise and or Calorie Reduction for Weight Loss

- 54% are using exercise with a low calorie or low fat plan
- 21% are using a low calorie or low fat plan alone
- 25% are using exercise alone
- 46% do not use exercise with a calorie reduction plan
- 52.4% of U.S. adults do not use exercise with calorie reduction (range 43.4 -70.3%)

Professional Advice about Weight Control in the Past 12 Months

- 30% of respondents received professional advice about weight control
- 79% of respondents receiving professional advice are overweight
- ½ of those not receiving professional advice are overweight

Physician Prescribed Weight Loss Pills in the Past 2 Years

- 17.4% of respondents who received professional advice received weight loss pills
- 64.3% of those who received weight loss pills are overweight
- 81.4% of those who received professional advice but took no weight control pills are above ideal body weight

Recommended Strategies

- Identify and address barriers to change such ignorance concerning the health consequences of being overweight, a history of repeated failures, the belief that it cannot happen to me and the belief that change is more costly than the status quo
- Encourage health professionals to play a leading role in educating, empowering, and motivating patients to assume more personal responsibility for their health by adopting lifestyle practices that prevent disease and promote health
- Limit the role medication in the management of excess body weight
- Educate that lifestyle change is fundamental to lifelong success and that quick fix approaches lead to repeated failures, discouragement and psychological distress
- Focus on a healthy weight level, health benefits, good eating habits, a support system, regular moderate exercise, tools for managing stress and emotional eating, self-control, record keeping, setting goals and the as ABCs of behavioural change
- Note the important role of medical doctors in encouraging their patients to seek additional help if needed to establish and maintain healthy lifestyle practices

Eating Habits and Obesity

The participants included in this section indicated that they followed these *eating patterns for 10 or more years*. Hence, this data identified probable cause and effect associations between long established eating practices and healthy weight outcomes or obesity.

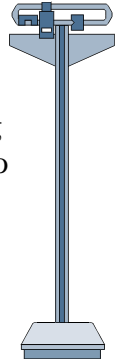
Recommended Strategies

Highlight the following findings on dietary habits and obesity:

- As the frequency of eating between meals, fast foods, fried foods, soda & sweetened drinks, baked goods, refined grains and high fat dairy products increased the percentage of obesity increased
- Being a meat eater and having breakfast 5 or less days/week was also associated with a higher level of obesity
- Eating breakfast daily, rarely or never eating between meals, having fried or fast foods, beans & baked goods 3 times/month or less and no soda or sweetened drinks was associated with a low percentage of obesity
- A mixture of low & high fat dairy products, 5 or more servings of fruit & vegetables/day, eating mostly whole grains, 1 to 3 serving of beans/day and being a vegetarian was also associated with a low percentage of obesity
- You can use the BMI chart on page 6 to estimate the weight status of most adults
- In terms of eating habits and weight control the Eating Habits and Weight Status table (based on the adult wellness survey) on page 7 can be used as a guide to promote healthy body weight
 - Set realistic goals and take the necessary steps to move from the far right column of eating habits associated with increased obesity to the far left column of eating patterns that lower the risk for obesity and obesity related health problems
 - Decide which of the 10 eating practices you can live with and make steps towards improving those areas

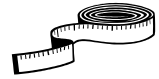
WHAT'S YOUR BMI?

Your body mass index (BMI) is your weight (in kilograms) divided by your height (in meters) squared. Here's a chart that does the work for you. Just locate your height along the left-hand column. Then slide your finger to the right along that row until you come to the number closest to your weight. At the top of that column is your BMI. For instance, if you're 5'5" and 140 pounds, your BMI is 23. If you want to compute your exact BMI, you can multiply your weight (in pounds) by 703 and then divide it by your height (in inches) squared.



Health Risk for diabetes, hypertension, arthritis, endometrial cancer and gallstones in women, and diabetes, hypertension and arthritis in men, increase as BMI levels increase. The risk of diabetes can start increasing at a BMI as low as 22 in women and 25 in men. (Sources: *Annals of Internal Medicine*, *Cancer Epidemiology Biology & Prevention*, *Obstetrics & Gynecology*, *Hypertension and Circulation*.)

Note: The following BMI chart may not be appropriate for children, pregnant or breastfeeding women, the frail elderly or serious bodybuilders with large muscles. Waist & hip measurements are another method of assessing increased risk of heart disease, high blood pressure and diabetes. Your goals should be a *waist-to-hip ratio* below 0.95(men) or 0.85 (women).



BODY MASS INDEX (BMI)

Source: World Health Organization

	19	20	21	22	23	24	25	26	27	28	29	30	35	40
HEIGHT	WEIGHT (Pounds)													
4'10"	91	96	100	105	110	115	119	124	129	134	138	143	167	191
4'11"	94	99	104	109	114	119	124	128	133	138	143	148	173	198
5'0"	97	102	107	112	118	123	128	133	138	143	148	153	179	204
5'1"	100	106	111	116	122	127	132	137	143	148	153	158	185	211
5'2"	104	109	115	120	126	131	136	142	147	153	158	164	191	218
5'3"	107	113	118	124	130	135	141	146	152	158	163	169	197	225
5'4"	110	116	122	128	134	140	145	151	157	163	169	174	204	232
5'5"	114	120	126	132	138	144	150	156	162	168	174	180	210	240
5'6"	118	124	130	136	142	148	155	161	167	173	179	186	216	247
5'7"	121	127	134	140	146	153	159	166	172	178	185	191	223	255
5'8"	125	131	138	144	151	158	164	171	177	184	190	197	230	262
5'9"	128	135	142	149	155	162	169	176	182	189	196	203	236	270
5'10"	132	139	146	153	160	167	174	181	188	195	202	207	243	278
5'11"	136	143	150	157	165	172	179	186	193	200	208	215	250	286
6'0"	140	147	154	162	169	177	184	191	199	206	213	221	258	294
6'1"	144	151	159	166	174	182	189	197	204	212	219	227	265	302
6'2"	148	155	163	171	179	186	194	202	210	218	225	233	272	311
6'3"	152	160	168	176	184	192	200	208	216	224	232	240	279	319
6'4"	156	164	172	180	189	197	205	213	221	230	238	246	287	328

HEALTHY BODY WEIGHT

Low health risk



OVERWEIGHT

Increasing health risk

OBESSE

High health risk

Eating Habits and Weight Status

Low Percentage of Obesity <i>(Obesity decreased from left to right)</i>			High Percentage of Obesity <i>(Obesity increased from left to right)</i>	
Eat more of these foods or eating patterns 			Eat less of these foods or eating patterns 	
Breakfast eating	Every day <i>17% obese</i>			5 or less days per week <i>30% obese</i>
Eating between meals	Rarely <i>4% obese</i>	Occasionally	Almost every day	Don't eat regular meals <i>50% obese</i>
Fast foods <i>(Hot dogs, French fries, fried chicken, hamburgers, soda etc.)</i>	3 times per month or less <i>9% obese</i>	1 to 2 times per week		3 to 7 times per week <i>49% obese</i>
Fried foods	3 times per month or less <i>11% obese</i>		1 to 6 times per week	1 to 2 times per day <i>36% obese</i>
Cans of soda	Don't drink soda <i>18% obese</i>		1 can per day	2 or more cans per day <i>33% obese</i>
Cups of sweetened drinks	No sweetened drinks <i>16% obese</i>		1 cups of drink per day	2 or more cups of drink per day <i>38% obese</i>
Baked goods <i>(Cakes, cookies, pastries, pies etc.)</i>	3 times per month or less <i>13% obese</i>		1 to 6 times per week	1 to 4 times per day <i>30% obese</i>
Dairy products <i>(1 servings = 1 cup milk, 1 slice of individually wrapped cheese or 2 ounces of proceed cheese)</i>	Low fat milk products (Skim milk, cottage cheese, low-fat ice-cream etc.) <i>22% obese</i>	Mixture of low and high fat (Less in this group were obese than in low fat milk group due to other low fat eating habits.)		High fat milk products (Whole milk, regular ice cream, cream cheese, cheddar cheese etc.) <i>27% obese</i>
Fruit and vegetables <i>(1 serving = 1 banana, 1 orange or 1/2 cup)</i>	5 or more servings per day <i>9% obese</i>		3 to 4 servings per day	2 or less servings per day <i>30% obese</i>
Beans and legumes <i>(1 serving = 1/2 cup)</i>	1 to 3 servings per day (1 cup of beans = one 2 oz serving of meat) <i>7% obese</i>		2 to 6 servings per week	1 servings per week <i>19% obese</i>
Grains <i>(1 serving = 1 slice of bread, 1/2 cup of rice ,pasta or macaroni)</i>	Whole grains (Whole wheat bread & macaroni, brown rice, oatmeal etc.) <i>18% obese</i>	Whole grains and refined grains		Mostly refined grains (White bread, rice, pasta, macaroni etc.) <i>32% obese</i>
Vegetarian or meat eater	Vegetarian (No meat, fish, or chicken in the diet) <i>7% obese</i>			Non-vegetarian (Meat, fish or chicken in the diet. 1 serving = 2-3 oz or the size of a deck of cards) <i>21% obese</i>

Activity Level and Obesity

Regular moderate exercise is a good predictor of long term success at weight control. Furthermore, exercise can: (1) prevent and or treat health problems associated with obesity; (2) improving psychological state (depression, anxiety, mood and self-esteem) which can directly influence eating habits; (3) positively influencing the quality of diet and; (4) help in controlling appetite.

Physical Activity in the Past Month

- 67% yes
- 33% no (Approximately 1/3 of adults do not exercise)
- 27.7% of U.S. Americans on average are inactive (States range from 17.1 to 60.6%)

Nightly Hours of TV Viewing

- 6% No TV
- 6% less than 1 hour
- 20% 1 to 1 ½ hours
- 22% 2 to 2 ½ hours
- 23% 3 to 3 ½ hours
- 23% 4 or more hours

Frequency of Aerobic Exercise in the Past Month

- 15.4% 4 or more times/week
- 9.1% 3 times/week
- 75.4% 2 or less times/week

Length of Exercise Sessions

- 7% less than 30 minutes
- 93% longer than 30 minutes

Frequency of Regular Vigorous Exercise

- 25% 4 or more time/week
- 34% 2 to 3 times/week
- 24% 1 or less times/week
- 17% never

Recommended Strategies

Highlight the following information related to activity level and obesity:

- Inactivity, 3 or more hours of TV per night, 2 or less sessions of aerobic exercise per week, no vigorous exercise and exercising less than 30 minutes per session was associated with highest percentage of obesity
- Exercise in the past month, viewing less than 1 hour of TV per night, 4 or more times of aerobic exercise (vigorous or non-vigorous) and exercising for longer than 30 minutes per session was associated with the lowest percentage of obesity
- Highlight the fact that engaging in vigorous, continuous exercise is not necessary to reap health benefits
- 30 minutes or more (not necessarily all at once) of moderate-intensity physical activity on most, preferably all, days of the week will provide substantial health benefits
- Intermittent activity such as walking up the stairs instead of taking the elevator, walking instead of driving short distances, doing calisthenics, or pedaling a stationary cycle while watching television also confers substantial benefit
- Include flexibility and muscular strengthening exercise (several times/week) which can improve performance of daily activity and lesson the likelihood of developing back pain and disability, especially among the senior population
- Engage all sectors of the community (media, business, sporting & health clubs, other groups, churches etc.) in efforts to inform & promote physical activities that are enjoyable and engage sedentary individuals
- Assist communities in setting up and promoting physical activity groups (walking, dancing, cycling, hiking, softball, volleyball etc.) that get inactive people involved
- The Activity Pyramid (by the Institute for Research and Education) is an easy to follow guide to help people become more physically active
- The Physical Activity and Weight Status table (based on the adult wellness survey) and the examples of moderate physical activities on page 11 can help in setting goals that move from inactivity and its related health problems to a more active lifestyle
- To increase motivation: (1) focus on benefits (see page 12), (2) think of activities that you enjoy and schedule time for that activity, (3) keep track of time spent sitting and think of ways to work in 5, 10 or 15 minute walks, (4) choose a supportive partner, (5) join an exercise group, (6) monitor your behaviour, (7) set goals and (8) reward yourself for achieving short and long-term goals

- For weight control strive towards a goal of 30 minutes to one hour of aerobic exercise each day
 - Using walking as an example (it is safe for most people) begin at 15 minutes and gradually work up to the goal of 30 minutes to 1 hour/day
 - If you have difficulty doing 15 minutes at one time, try three five-minute sessions and give yourself a week or two at each level before you advance by adding 5 minutes to your exercise session

According to the *Journal of the American Medical Association*, Vol. 273. No. 5, most adults can start a moderately intense physical activity programme. Men older than 40 and women older than 50 who plan a vigorous program (such as running or racquetball with intensity of 60% or more) or who have either a chronic disease (i.e. heart disease, diabetes or limiting arthritis) or risk for factors for chronic disease (such as high blood pressure, obesity, heavy smoking or high blood cholesterol) should consult their physician to design a safe, effective program. Examples of moderate amount of exercise are on page 11.

Recommended Policies Related to Physical Activity

- Change building codes to require easy-to-find and inviting stairways
- Require developer and planners to provide exercise facilities so that access is convenient for all
- Provide attractive footpaths, walking and jogging trails, and cycling paths that would encourage people to transport themselves by their own power
- Require physical activity programs that are readily available to all schools, work sites and community groups
- Pass tax legislation that would encourage products and services that promote physical activity

Physical Activity and Weight Status

Low Percentage of Obesity <i>(Obesity decreased from right to left)</i> Increase these levels of activity <div style="text-align: center;">◀ ◀ ◀</div>			High Percentage of Obesity <i>(Obesity increased from left to right)</i> Decrease these levels of inactivity <div style="text-align: center;">▶ ▶ ▶</div>		
Any activity in the past month	Yes Keep it up! <i>13% obese</i>				No It's time to get moving! <i>37% obese</i>
Hours of TV per night	Less than 1 hour per night <i>0% obese</i>	1 to 1 ½ hours per night	2 to 2 ½ hours per night	3 to 3 ½ hour per night	4 or more hours per night <i>31% obese</i>
Frequency of aerobic exercise in the past month	4 or more times per week <i>5% obese</i>	3 times per week			2 or less times per week <i>17% obese</i>
Frequency of vigorous aerobic exercise	4 or more times per week <i>7% obese</i>	2 to 3 times per week	1 time per week or less		Never <i>36% obese</i>
Length of exercise sessions	30 minutes or longer <i>12% obese</i>				Less than 30 minutes <i>37% obese</i>

Examples of Moderate Amounts of Activity

The activities at the top of this list are less vigorous, and therefore require more time to reach a moderate level. As you go down the list the activities become more vigorous, and thus require less time to achieve a *moderate intensity of effort.

- Washing & waxing a car for 40-60 minutes
- Washing windows/floors for 45-60 minutes
- Playing volleyball for 45 minutes
- Playing touch football for 30-45 minutes
- Gardening for 30-45 minutes
- Wheeling self in wheelchair for 30-45 minutes
- Walking 1 ¾ miles in 35 minutes (20 min/mile)
- Basketball (shooting baskets) for 30 minutes
- Bicycling 5 miles in 30 minutes
- Dancing fast (social) for 30 minutes
- Pushing a stroller 1 ½ miles in 30 minutes
- Raking leaves for 30 minutes
- Walking 2 miles in 30 minutes (15 min/mile)
- Water aerobics for 30 minutes
- Swimming laps for 20 minutes
- Wheelchair basketball for 20 minutes
- Basketball (playing a game) for 15-20 minutes
- Bicycling 4 miles in 15 minutes
- Jumping rope for 15 minutes
- Running 1 ½ miles in 15 minutes (10 min/mile)
- Stairwalking for 15 minutes

* A moderate amount of physical activity is roughly equivalent to physical activity that uses approximately 150 Calories (kcal) of energy per day or 1000 Calories per week.

Physical Activity and Health Benefits

Plato once said, “Lack of activity destroys the good condition of every human being while movement and methodical physical exercise save and preserve it.” The Center for Disease Control and Prevention (CDC) has estimated that sedentary living causes about 1/3 of deaths due to coronary heart disease, colon cancer, and diabetes. Since inactivity is a major cause of premature death, activity is the way of prevention.

Exercise is a powerful medicine quite unlike any pill available. Regular physical activity can be effective in both preventing and treating a wide variety of ailments that plague mankind. The greatest health benefits come when sedentary people begin and maintain a regular programme of moderate physical activity. To avoid the pitfalls of the sedentary life, every adult should work towards 30 minutes or more of moderate intensity physical activity (not necessarily all at one time) on most, preferably all days of the week. The following benefits of a regular exercise programme were reviewed by Dr. David Nieman, FACSMA in his book *The Exercise Health Connection*. A strong consensus or most scientific findings support the following benefits of regular physical activity:

- Improves life expectancy
- Improves heart and lung fitness
- Prevention of heart disease (CVD)
- Treatment of heart disease (CVD)
- Lowers triglycerides and raises HDL-cholesterol
- Prevention of high blood pressure
- Treatment of high blood pressure
- Prevention of Type 2 diabetes
- Treatment of Type 2 diabetes
- Prevention of colon cancer
- Helps build and maintain healthy bones and muscles
- Prevention of weight gain and helps maintain weight loss
- Reduces feelings of depression and anxiety, while improving mood state and self-esteem
- Improvement in sleep quality
- Improves fitness while pregnant and health during menopause
- Improves the life quality of older adults, patients with disease (asthma, HIV-infected, diabetes and arthritis), and people of all ages

The following benefits of regular physical activity are supported by some scientific data, but much more research is needed:

- Improves success in quitting smoking
- Prevention of breast, uterine and prostate cancers
- Prevention and treatment of low back pain
- Treatment of osteoporosis
- Prevention of the common cold and improving overall immunity
- Prevention of stroke
- A reduction in unhealthy habits in children and youth
- Improves birthing experience and health of fetus
- Treatment of obesity and improvement in diet quality

Wellness and Occupational Health

The work environment can play a significant role in either promoting or hindering healthy lifestyle choices and behaviours (*Wellsource Health Assessment and Prevention Systems*). Corporate culture (norms, policies, attitudes and management style) can significantly impact on the effectiveness of wellness programmes. Work schedules childcare policy, incentives and cafeteria selection all impact on the effectiveness of the health promotion programme. The employees attitudes towards their job, family and friends can have as much impact on their health care utilization as health status factors like blood pressure, weight, smoking, alcohol consumption and cholesterol.

Social support is an advantage of corporate health promotion. Having a support system can greatly enhance the success rates of adult behaviour change programmes. When individuals see their co-workers successfully changing their behaviours and gaining the benefits, they believe they can achieve similar results by joining.

Convenience is also an important factor in the success of worksite wellness. By providing health promotion programmes and exercise classes at work, allowing flexible work schedules, and providing childcare, businesses can increase the convenience of these programmes and therefore participation rates.

Research shows that a well-designed wellness programme will result in the following benefits. (*Information from Washington State Department of Health was used as a resource in this section*):

- Improved employee health status
- Reduced costs from workers compensation and insurance
- Fewer on-the-job accidents
- Reduced human resource development costs including decreased turnover and replacement costs
- Greater employee satisfaction
- Improved corporate image
- Greater productivity, including decreased absenteeism

Research has identified the following keys to successful wellness programmes:

- Wellness works best when multiple approaches and activities are employed
- There is little evidence that any one specific intervention will provide significant benefit to a group of employees
- The return to the employer is greater than the investment with approximately 50% of employee participation in a wellness programme
- Benefits begin immediately for employees who participant in a wellness programme
- Action programmes (Blood Pressure, Cholesterol, Exercise and healthy work place policies) bring much higher immediate and long term health benefits than passive approaches (poster distribution, brochures and newsletter articles)

- You will be more successful if you first assess the health status and needs of the group, and then select wellness activities based on the identified issues and needs
- Knowledge and awareness of health issues must be combined with mastery of skills which empower employees to take care of themselves and decrease reliance on the health care system
- Wellness programmes need not to be high cost to be effective. Contain cost by joining with other businesses, contracting with outside providers, securing services on-site or off-site, and cost sharing between employers and employees
- The right kind of incentives will increase and sustain participation during the life of a wellness programme

Employers can cut costs and improve employee health by creating a corporate culture that rewards healthy living, motivates employees to improve their health and provides the interventions and education to make it possible. It's a win-win proposition.

The following topic areas comprise the elements of a comprehensive wellness programme. Additional information on these areas of wellness are provided in other sections of the Adult Wellness Report:

- | | |
|------------------------------------|--|
| • Health Risk Appraisal | • Injury Prevention and Ergonomics |
| • Physical Activity | • Alcohol and Other Drugs |
| • Tobacco Prevention and Cessation | • Clinical Preventive Services and Self-Care |
| • Stress Reduction | |
| • Nutrition | |

For the latest information on promoting healthier lifestyles at the workplace or in your organization, contact the Wellness Councils of America. Their address is as follows:

Wellness Councils of America
 9802 Nicholas St., Suite 315
 Omaha, NE 68114
 Phone: (402) 827-3590
 Fax: (402) 827-3594
 E-mail webmaster@welcoa.org
 Internet <http://www.welcoa.org/>

Health Risk Appraisals

Research had shown that health risk appraisals are an effective tool for promoting healthy behaviours in the work place. The aggregated results can provide employers with an accurate picture of health issues and interest of the group and provide an excellent base for designing targeted wellness strategies that will yield the most benefit. Health risk appraisals are available in a range of formats from written forms filled out by employees and interpreted by a qualified professional, to an on-site personal interview.

Recommended Strategies

- Schedule regular written health risk assessments by qualified professionals and provide feedback to employees on suggested intervention to lower health risk
- Use the aggregate data to design an effective wellness program for a specific group
- Create incentive programmes that link participation, changes in health practices and/or changes in health outcome with the rewards given

Examples of incentive programmes include the following:

- Participation in assessment rose from 40% to 98% when the city of Glendale, AZ gave a \$150 - \$300 health insurance deductible
- The city of Birmingham, AL required employees to participate in a health assessment in order to qualify for their benefit programme
- Honeywell gives a \$200 Life Saver award at the end of the year if they “pass” health screenings for certain risk factors including cholesterol, blood pressure, blood glucose, weight, smoking, and cancer
 - Those who fail the Honeywell health screening can re-test at a later date
- Southern California Edison gives “Good Health Rebates” of \$10 per month for passing on five risk factors for cardiovascular disease. In addition, they provide a “Preventive Health Account” of \$150 a year to be used as credit towards health promotion programmes if the spouse also enrolls in the programme.
- Sara Lee gives water bottles, T-shirts and calorie counters for participation in programmes such as health risk appraisals and exercise classes
- One Bakery gave three levels of T-shirts for a fitness program starting with “Fitness Buns” for joining, “Super Buns” for a fitness score of 60-79 and “Assume Buns” for a fitness score of 80 or higher
- You can reimburse employees for programme costs if all sessions are attended, given out special certificates of completion at a banquet, offer an off day benefit or get several departments competing for the most weight loss or highest fitness level

In one exercise programme the participants were divided into teams and had to provide \$40 to enroll. Each time a participant did not meet their weekly contract, 50% of that money was forfeited to members of other teams in which everyone had met their contract for that week. The team with the most money at the end of 6 months received an extra \$150. The incentive resulted in 97% adherence in all five teams. A comparison group without incentives experienced only 19% adherence to the exercise programme.

Before you decide on an incentive plan, hand out questionnaires or organize a focus group to determine what it will take to motivate the employees to get involved. Get them involved from the beginning and they will likely stick with the programme. Make sure and include options for employees with disabilities.

High Risk Criteria - Consider including questions that address most of the following high-risk areas when determining the content of a health risk assessment tool. These high-risk criteria have been associated with higher corporate health care cost. Further,

addressing many of these health risk areas though job sponsored wellness has resulted in reduced medical claims and other health and job related benefits.

• Smoking	➔	Current Smoker
• Physical Activity	➔	No regular exercise or Not reported
• Medication/Drug Use	➔	Frequently, Sometimes or Not reported
• Absence due to illness	➔	5 days or more
• Drinking alcohol	➔	More than 21 drinks per week
• Life Satisfaction	➔	Not too happy or Very unhappy
• Job Satisfaction	➔	Very Dissatisfied or Dissatisfied
• Physical Health	➔	Fair to Poor
• Serious Medical Problems	➔	Yes or Not Sure
• Stress Signals	➔	3 or more stress signals
• Systolic Blood Pressure	➔	Greater than 140 mm Hg
• Diastolic Blood Pressure	➔	Greater than 90 mm Hg
• Cholesterol	➔	240 mg/dl or Greater
• Body Weight	➔	More than 20% Overweight
• Chronic Bronchitis/Emphysema	➔	Yes or Not Sure

Risk Factors and Percent Higher Annual Health Cost

The percent higher annual health costs have been determined for the following single risk factors. Depression -70%, stress -46%, high blood sugar -35%, obesity -21%, smoker -21%, high blood pressure -12% and lack of exercise -10%. See JOEM, Oct. 1998 for study details.

The percent higher annual health costs have also been determined for multiple risk factors when compared to someone with no risk factors.

1 risk factor = 1.8 times the cost compared to 1 for no health risk
 2 – 3 risk factors = 2.8 times
 4 – 5 risk factors = 3.7 times
 6 + risk factors = 8.1 times

See Yen, et.al, AJHP, 1991 for study details.

You can make use of other questions from the adult survey if you choose to create or modify a health risk assessment (HRA) tool for a particular workplace or organization. On the other hand, there are a number of HRA already on the market. Following is a list of ten commercial HRA vendors that are identified in the Society of Prospective Medicine (SPM) Handbook of Health Assessment Tools, 1999. You can contact them and request samples of their HRAs, personal and group reports and marketing materials.

We've included the number of questions, the average completion time and the grade level for each questionnaire.

Health Quotient	(503) 279-9010	24 questions	10 minutes	grade 8
Health Risk Appraisal – U of M	(734) 763-2462	51 questions	10 minutes	grade 7
Health Path	(650) 454-3577	78 questions	15 minutes	grade 8
Health Steps	(651) 454-3577	31 questions	5 minutes	grade 5
Health Monitor	(800) 884-5044	64 questions	9 minutes	grade 6
Health Management System	(800) 467-3005	54 questions	13 minutes	na
MedAppraisal About Health Survey	(407) 741-4756	30 questions	10 minutes	grade 9
Building A Healthier You	(617) 357-9876	36 questions	20 minutes	grade 6
ASAP	(940) 565-9399	86 questions	17 minutes	grade 6
Health Check	(617) 338-1766	na	10 minutes	na

Physical Activity

Leading a physically active life provides many significant health benefits. Among them is a reduction in heart disease, obesity, diabetes, osteoporosis, stroke, stress, accidents, injuries and employee absenteeism.

Recommended Strategies

- Arrange group discounts at exercise facilities
- Promote group physical activity programs such as walking, running, biking or swimming clubs
- Provide access to athletic equipment, aerobic classes, fitness training and martial arts
- Institute a flex-time policy to encourage physical activity, such as extended lunch periods to accommodate exercise classes, or off-peak commuting schedules for employees who walk or bicycle to work
- Design buildings that encourage physical activity such as access to showers, lockers, bicycle racks and safe and friendly access to stairs (as opposed to elevators)
- Issue written policies that encourage physical activity
- Provide access to classes and educational materials that stress the health benefits of physical activity
- Provide educational materials, classes and instruction on appropriate use of exercise equipment and gear

The following Internet site may be helpful

<http://www.fitnesslink.com>

Tobacco Prevention and Cessation

Tobacco use is a major cause of preventable deaths – heart attack, stroke, chronic heart disease, high LDL & low HDL cholesterol, cancer (lung, mouth, throat, stomach, breast, urinary), emphysema, asthma, hypertension, acute bronchitis, diabetes, peptic ulcer and more. Smokers miss more work and seek more medical care than non-smokers. In

addition to protecting people from environmental tobacco smoke, a smoke-free work place also contributes to an increase rate of smoking cessation.

Recommended Strategies

- Institute and enforce a written policy that establishes a smoke-free work place
- Provide access to smoking cessation programmes and self-help material
- Prohibit on-site tobacco sales, advertising and promotion
- Make use of local prevention agencies like the National Drug Commission

The following Internet sites may be helpful

<http://www.lungusa.org>

<http://www.tobaccofreekids.org>

<http://www.cdc.gov/tobacco>

<http://tobacco.arizona.edu>

Stress Reduction

Stress reduction contributes to increased employee productivity, and reduced accidents, injuries and absenteeism. An effective stress reduction programme will include identification and modification of the root causes of stress. Exercise, meditation and relaxation are all effective methods for reducing stress.

Recommended Strategies

- Encourage employees to take breaks
- Provide access to classes and workshops that get to the core of work related stress such as conflict resolution, dealing with difficult people and time management
- Institute a flex-time policy to help reduce external sources of stress (rush hour traffic, family scheduling conflicts, etc.) and to promote exercise opportunities
- Provide “quiet rooms” and relaxation tapes
- Adapt workload management policies which address job stress issues such as “lack of control” and “too much responsibility”
- Provide health incentives or rewards such as getting a “well day” off or a bonus for meeting wellness criteria
- Encourage humor, sharing, lightheartedness, recognition and award ceremonies and other activities that help employees to enjoy and take pride in their work
- Provide self help material on stress reduction

The following Internet site may be helpful

<http://www.stress.org/>

Nutrition

Poor dietary practices and eating behaviours contribute to preventable illness and premature death. For better health eat less fat, saturated fat, cholesterol, salt, sugar, refined grains and alcohol, and more whole grains, fruits, vegetables and beans. Research shows that breastfeeding new-born babies reduce childhood illness and the amount of time that parents must be absent from work to care for a sick child.

Recommended Strategies

- Provide an area for food preparation and ensure that healthy food choices are in on-site vending machines, cafeterias and food delivery systems
- Provide access or referrals to nutrition counseling by a certified professional
- Provide access to nutrition classes and seminars on topic including healthy eating and eating disorders
- Distribute messages on healthy eating, including brochures, posters and articles
- Institute a written policy that supports breastfeeding by new mothers who return to work

The following Internet sites may be helpful

<http://www.eatright.org>

<http://www.cspinet.org>

<http://nutribase.com>

<http://spectre.ag.uiuc.edu/~food-lab/nat>

<http://navigator.tufts.edu>

Injury Prevention and Ergonomics

One of the best ways to reduce health care cost is through injury prevention efforts tied to the work place. Both muscular strength and aerobic fitness provide protection against chronic back injury and pain, and in the event of an injury, facilitate more rapid recovery.

Recommended Strategies

- Have a consultant review your work place for safety and follow-up on the recommended safety policies and changes
- Enforce safety policies that protect people from injury such as specifications on lifting
- Provide equipment that is ergonomically designed to prevent pain and injury, including keyboards, chairs, and work station configurations
- Issue reminders to employees to follow recommended rest breaks
- Follow guidelines on exposure to noise and require the use of hearing protectors for employees exposed to noise levels higher than 85 decibels
- Provide education and information on noise levels and hearing loss prevention

- Provide access to workshops and classes on injury prevention and safety
- Encourage early referral to medical treatment for new and chronic injuries
- Provide 15 minutes warm up and stretching to prepare for the work day, and encourage stretching breaks periodically throughout the work day

The following Internet sites may be helpful

<http://www.osha.gov>

<http://www.osha-slc.gov>

<http://www.tifaq.com>

Alcohol and Other Drugs

Alcohol and drug abuses are significant factors in employee productivity, absenteeism and increased use of health care. A drug and alcohol free work place policy should include the employees right to privacy and voluntary self-referral to treatment without penalty.

Recommended Strategies

- Institute and enforce a written drug and alcohol free work place
 - Include employee education, supervisory training, an employee assistance programme, plus the guarantee of at least one opportunity for treatment
 - Keep services confidential and have treatment available without penalty
 - Make use of local prevention agencies like the National Drug Commission
- Provide access to classes, educational material and seminars, which include topics, such as:
- How to identify problems and make referrals to appropriate agencies
 - How to deal with family or friends who have a substance abuse problem
 - How to prevent alcohol and drug abuse by developing other ways of coping with stress and other problems

The Following Internet sites may be helpful

<http://www.al-anon-alateen.org>

<http://www.drugfreeamerica.org>

<http://www.isleuth.com/sub-abuse.html>

<http://www.niaaa.nih.gov>

<http://www.health.org>

<http://www.recovery.org>

Clinical Preventive Services and Self-Care

Access to preventive services includes immunizations and screening for the early detection of disease. Follow a schedule as outlined by major medical academies such as Preventive Medicine, Family Medicine and the Center for Disease Control and Prevention. Self care has been shown to decrease the cost of acute care visits.

Recommended Strategies

- Allow preventive services to be provided at the work site
- Provide self-care manuals (printed or on computer), and provide classes on the use of the manual
- Promote annual immunization day with access to needed immunizations on site or off site
- Provide and encourage screening for early detection of disease, such as screening for cholesterol, blood pressure, blood glucose and cancer, especially cervical, breast and colon cancer
- Ensure that screening programme includes appropriate referral to follow-up and treatment
- Distribute educational materials and reminders that stress the importance of regular check-ups and immunizations
- Provide access to classes on preventive health topics such as managing chronic diseases, preventing the spread of infectious diseases and managing medications

Recommendations for Adult Preventive Health Exams

- Checks for body weight periodically (BMI & waist hip ratio may be useful), cholesterol (every 5 years) and blood pressure levels (every 1 to 2 years)
- Cancer screening (every 2 to 4 years from ages 40 to 49 and every 2 years starting with age 50)
- Women: Pap test (yearly), breast and pelvic exam (every 2 years), mammogram (every 1 to 2 years from ages 40 to 49, start at 35 for a family history of breast cancer and yearly for 50+ years of age)
- Men: Prostate-Specific Antigen (PSA) (yearly starting at age 50) & Digital Rectal Examination (DRE) (starting at age 40) *Source for DRE: American Cancer Society*
- Test for blood in stool (every 2 years from ages 40 to 49, and yearly from age 50), Sigmoidoscopy (every 5 years from age 50) and rectal exam (every 2 years from ages 40 to 49 with physical and yearly for age 50 and older)
- Immunizations: Tetanus every 10 years, pneumonia once by 65, annual flu shot, hepatitis B for high risk patients and others as needed

Sources: U.S. Preventive Service Task Force and the U.S. Department of Health and Human Services, Public Health Service, 1999

Occupational Health and Stress

Since adults spend a large portion of their time at work, job related stressors will likely impact on personal health, social relationships, job performance, and home-life. High stress overload is associated with stress related health problems and increases in medical cost. Given this fact and the far reaching implications of stress overload, the work place is an ideal location for assessing stress level and providing tools for coping effectively with day-to-day stress. There are a number of potential stressors that converge at the workplace. These stressors have been grouped into the following categories (Note: These areas can be address in a stress management seminar):

- Personal (i.e. poor interpersonal communication, burnout/boredom, substance abuse, money problems, health status change, lack of connection, coping mechanisms)
- Environmental (i.e. light, noise, improper equipment, techno-stress, job hazards/risk, temperature, improper equipment, humidity, job demands – physical, time, mental pressures)
- Organizational (i.e. too much to do, too little to do, role ambiguity or conflict, too much responsibility, over/under qualified personnel, uncertain future, management style, lack of control, accountability)

In this survey we asked questions to address job satisfaction, health hazards on the job, wellness at work, education level, income and industry or sector. We looked for relationships between these areas and moderate/high stress overload.

Job Satisfaction

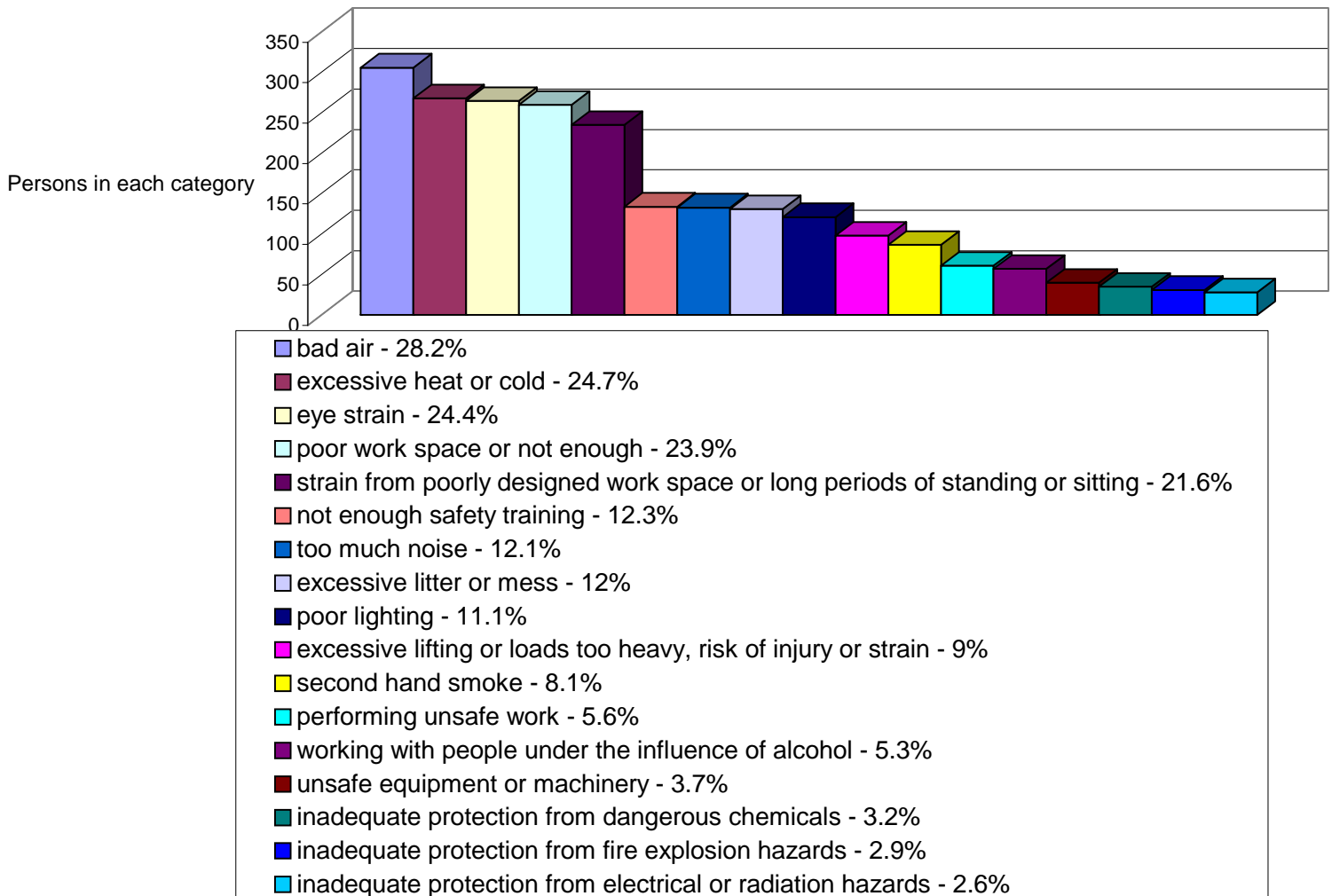
- 23% of the population were dissatisfied with their work life
- 77% were satisfied with their job (55.6% fairly satisfied & 21.2% very satisfied)
- Job satisfaction was linked to lower numbers with stress overload (18.4 to 18.6%)
- Job dissatisfaction was linked to higher numbers with stress overload (41%).
- Freedom from stress overload was identified in 72% of participants who reported very satisfied, 66% of participants who reported fairly satisfied and only 44% of the participants who reported job dissatisfaction

Precautions Against Job Related Health Hazards

- 26% of the population believe their employers do not take enough precautions against work related health hazards
- No job related health hazards was associated with lower levels of stress overload (23%) while the presence of health hazards was linked to higher levels of stress overload (30%).

Workplace Health Hazards Needing Attention

Occupational Health Hazards



Workplace Health Hazards and Stress Overload

The participants who identified the following health hazards experienced significantly higher stress overload than the respondents who did not identify these health hazards in their work place. The percent stress overload is given for each of these two groups.

- Excessive heat or cold (27% Vs 23%)
- Exposure to second hand smoke (40% Vs 24%)
- Too much noise (38% Vs 23%)
- Poor work space or not enough (31% Vs 23%)
- Excessive litter or mess (42% Vs 23%)

- Not enough safety training (30% Vs 24%)
- Excessive lifting or loads too heavy, risk of injury or strain (48% Vs 23%)
- Eye strain (31% Vs 23%)
- Exposure to dangerous chemicals/biological elements (71% Vs 24%)
- Unsafe equipment or machinery – (61% Vs 24%)
- Inadequate protection from electrical or radiation hazards (71% Vs 24%)
- Inadequate protection from fire explosion hazards (71% Vs 24%)
- Having to perform unsafe work (43% Vs 24%)
- Working with people under the influence of alcohol/drugs (65% Vs 23%)

Recommended Strategies

- Highlight the key findings regarding job satisfaction, health hazards and stress
- Focus on the need to assess and address the reasons for job dissatisfaction
- Identify and appropriately address the health hazards on the job, a contributing factor to job dissatisfaction and stress overload
- Note that bad air in the # 1 health hazard referees to fumes, stuffy or inadequate ventilation
- A version of the health hazard questionnaire used in this study could be used to assess health hazards at specific job sites
- Periodically evaluate the effectiveness of interventions aimed at improving job satisfaction and occupational health & safety

Work Sponsored Wellness Programmes

- 16% of respondents indicated a job wellness initiative
- 82% of the respondent's reported no job sponsored wellness programmes
- Job sponsorship was associated with 17% moderate/high stress overload
- Lack of job sponsorship was associated with 27% moderate/high stress overload

Participation in Job Wellness Programmes

- Almost half (45%) of the respondents participate in their employers health programmes
- Programme participation was associated with 8% moderate/high stress overload
- Non-participation was associated with 25% moderate/high stress overload
- 86% of programme participants were free of stress overload signals
- ½ of the non-participants were free of stress overload signals
- 62% of the programme participants were at ideal body weight, compared to 35% of the non-participants

Health Programmes Sponsored by Employers

- The four major areas were health club membership (31.3%), a variety of physical activities & seminars (25.3%), in-house health and fitness programs during work hours (16%) and walking (10.1%).

Reasons for Not Participating in Health Programmes

- The major reasons were a lack of time (50.4%) and having their own programme or don't need it (32%). Not being addressed (5%) and cost (4.1%) were also reasons given for not joining a company health programme

Interest in Work Sponsored Wellness

- 83% of respondents would participate in a health and fitness programme if sponsored by their employer
- Those who desire to participate in work sponsored wellness have a higher level of stress overload (29%) than those who do not desire to participant (20%)

Programmes Employees Would Join

- The major programmes participants would join include aerobic/exercise (40%), gym (23%), anything (22%) and walking (6%).

Reasons for No Interest in a Future Programme

- The reasons given are a lack of time (50%), having their own programme or don't need it (33%), too tired after work (9%) and not a priority or interest (8%)

Education Level

- 56% of the population received technical, secondary or primary education, the remaining 46% went through college, university or post-graduate training
- The highest level of education in the 46% of participants was associated with the lowest level of moderate/high stress overload (18 to 20%)
- The lowest level of education was associated with the highest level of moderate/high stress overload (25 to 31.6%)

Annual Income

- As income level increases from 20,000 or less to 80,000 or higher, the level of moderate to high stress overload decreases from a high of 46.4% to a low of 16.7%.
- Freedom from stress overload increased steadily from only 37.5% for an income of 20,000 or less, 53.8% for 20,000 to 50,000, 61.8% for 50,000 to 80,000, 75% for 80,000 to 110,000, to a maximum of 75.8% for an income of 110,000 or more

Industry or Sector and Stress

- Public administration, communications and business were the three sectors or industries with the lowest numbers with moderate/high stress overload (12 to 18%).
- International companies, construction and hotels, restaurants and clubs were the sectors or industries with the highest numbers with moderate/high stress overload (30 to 46%).

Recommended Strategies

- Encourage employers to sponsor wellness programmes as an effective tool for decreasing stress overload in the workplace
- Highlight the findings that employees in Bermuda who participated in work sponsored wellness had less obesity and less stress overload scores
- Talk about the benefits of a well designed and functioning wellness programme
- Inform employers that health club membership, a variety of physical activities & seminars, in-house health and fitness programs during work hours and walking programmes are examples of the major wellness programmes used by employers in Bermuda
- Identify and address the barrier related to time, cost, tiredness and lack of interest
- Underscore the fact that tiredness is often associated with excess mental activity and lack physical activity
- Educate that the benefits of regular physical exercise far out-way the cost or barriers that must be overcome
- Keep before the employers the finding that over 80% of employees expressed an interest in work sponsored wellness programmes
- Note that at least 40% of employees would participate in a aerobic/exercise programme, 23% are interested in the gym, 22% of employees are open to any type of health programme and another 6% would participate in a walking programme
- Note that continuing education and a good income (with effective money management skills) can be effective tools for alleviating life's stressors
- While this population based health interest survey can provide ideas for employers who are contemplating a wellness programme, a health interest survey of the employees in a specific business may be even more helpful
- While it appears that some industries or job sectors are linked to higher levels of stress overload, it is important to assess and address the stress level of individual companies

Readiness to Change Health Habits

In this survey we assessed readiness to change in a number of different health areas. Motivation can be defined as a state of readiness to change, which may fluctuate from one time or situation to another. This state of eagerness can be influenced in a positive direction. According to psychologists James Prochaska and Carlo DiClemente, people pass through six stages in the course of changing a behaviour. These stages are precontemplation, contemplation, preparation, action, maintenance and termination. It is normal for people to go through these six stages several times before achieving a stable change. The divisions of the readiness to change table (page 26) are based on this model of change. Following is an explanation of each stage of change and the strategies that can facilitate moving toward termination, the ultimate goal in behavioural change. These guidelines can be used to promote individual and population wide behavioural changes in the health habits addressed in this survey as well as other lifestyle habits.

1. **Precontemplation** (What problem? I haven't thought about it.) I'm OK the way I am. I'm not ready to change. Maybe it's you who should change. I'm not interested.
(Note: Stage 1 is under not ready in the table on page 26)
Process Strategies: Provide information and feedback to raise awareness, use the media to send out your messages, list benefits of change, discuss the need to change with someone you respect or complete a health risk assessment.
2. **Contemplation** (Not quite ready. I want to but...) I plan to change in the next 12 months. I know I should. I'm not sure I can do it. I need more information.
Process Strategies: Make a list of pros and cons for remaining the same as well as for changing the problem behaviour. This exercise may be enough to tip the balance in favor of change. Read about the problem or need area or talk to someone who made a similar change.
3. **Preparation or determination** (I will soon) I'm making plans to change in the next 30 days. I've tried before and it didn't work, but I'm going to do better this time.
Process Strategies: Write down your goals. Be realistic and don't expect miracles. Keep a log of current behaviours and make a verbal commitment to those close to you. Find the most appropriate, accessible and effective change strategy. (Note: We combined stages 2 & 3 under intend to change in the table on page 26)
4. **Action** (Real behavioural change) I have made changes and I'm working to maintain the changes I've made in the past 6 months. I need all the support I can get. I have built in rewards to help me keep to my plans.
Process Strategies: Get help in formulating your goals, develop a step-by-step plan of action and ask for support from those close to you and make plans to deal with any lapse (temporary slip) or relapse (reverting to the old behaviour).
5. **Maintenance** (Hang on to the change) Changes have benefited me for more than 6 months. I know I need to keep focused and not revert to old behaviours. I know what to do if I start losing motivation.

Process Strategies: Improve and add variety to your programme, maintain a plan for dealing with lapses (momentary slip-ups or learning experiences), chart and reward your progress and continue to seek support from others. (Note: We combined stages 4 & 5 under I have made changes in the past year or longer in the following table)

6. **Termination** (The ultimate goal) I am completely self-motivated now, but I know I can slip and still need support. I believe I can handle whatever comes along.

Process Strategies: Continue to seek support, record progress, help other who desire change and be supportive to friends and family. (Note: The stage of termination was not identified in this survey)

Health Areas and Readiness to Change	<i>Not ready or no thoughts</i>	<i>I intend to change within the next year</i>	<i>I have made changes or did this in the last year or longer</i>	<i>Does not apply</i>
Stop smoking	8.1%	2.9%	6.5%	82.5%
Exercise programme	31.4%	27%	35.3%	6.3%
Join a health club	47.3%	19.6%	19.7%	13.4%
Join walking/jog. Club	55.3%	16.3%	14.3%	14.1%
Weight loss plan	36.1%	30.4%	19.3%	14.2%
Improve eating habits	32.2%	29.7%	29.6%	8.5%
Healthy cooking class	55.2%	14.8%	3.4%	26.7%
Diabetes control	36.9%	17.5%	7.6%	38.1%
Blood pressure control	40.0%	17.9%	31.6%	31.6%
Reduce cholesterol	43.9%	14.8%	13.8%	27.5%
CPR Classes	53.9%	10.8%	15.6%	19.6%
Health/fitness testing	59.2%	8.7%	14.2%	17.9%
Lunch education class	66.0%	3.1%	2.3%	28.6%
Seniors health programme	50.5%	2.0%	2.6%	44.9%
Improve relationship skills	53.8%	9.7%	17.0%	19.5%
Improve parenting skills	39.9%	8.5%	12.7%	38.9%
Reduce/eliminate alcohol	42.0%	16.7%	12.6%	28.8%
Drug or alcohol treatment	14.8%	None	None	85.2%
Stress management skills	56.0%	21.4%	9.6%	13.1%

Eating Habits and Health Implications

Our quality of life and longevity is not primarily due to genetic factors - rather for the vast majority of us it is dependent on two factors: (1) what we put into our bodies, and (2) what we do with our bodies. Dr. Lamont Murdoch of Loma Linda University School of Medicine put it this way: “faulty genetics loads the gun, lifestyle pulls the trigger.”

The approximate annual preventable death and major causes in the United States are (1) tobacco – 400,000, (2) excess weight & inactivity – 300,000, (3) high cholesterol – 253,000, (4) high blood pressure – 171,000, (5) alcohol abuse – 100,000 and illegal drugs 18,000 (*1997 Estimates JAMA, Vol. 270, No. 13 & 18*). Four of these six causes of preventable death are related to dietary choices. Dietary excess and imbalance is associated with coronary heart disease, cancer, stroke, diabetes, atherosclerosis, high blood pressure, obesity, dental diseases, osteoporosis, and gastrointestinal diseases. It is now clear that diet contributes in substantial ways to the development of these diseases and that modification of diet can contribute to their prevention and control.

In this study we assessed the dietary habits of the adult population. Following is a report in table form on these findings and the health implications for the people of Bermuda.

Eating Habits and Health Implications

Eating Practices	Results	Discussion	Recommendations (Highlight results)
<i>Breakfast eating</i>	65% eat breakfast every day 35% eat breakfast 5 day/week or less	<u>Regular breakfast</u> Longer life span, better at weight control, better attitudes & scholastic scores, improved memory & attention span, and better at problem solving & verbal fluency.	Talk about the benefits of breakfast eating and encourage others to make this practice a regular habit. Planning ahead and eating a lighter supper may help in making the change.
<i>Whole grains Vs refined grains</i> Bread, cereal, rice or pasta. <i>Servings of grains/day</i>	40% eat mostly whole grains, 40% eat both whole and refined “enriched” grains and 20% eat mostly refined grains 1% do not eat grains 37% eat 1/day or less 45% eat 2 to 3/day 17% eat 4 to 6/day	<u>Whole grain high fiber diet</u> Lower risk of constipation, hemorrhoids, diverticular disease, heart disease, diabetes & colon cancer. <u>Refined grains</u> 200 to 300 fold loss in phytochemicals. More than 20 nutrients reduced. Only 5 added back. The intake of grains is likely underreported.	Talk about the great grain robbery (loss of phytochemicals, fiber, vitamins and minerals) due to the refining of whole grains and the benefits and ideas for increasing dietary fiber intake. 6 to 11 servings of grains are recommended every day.
<i>Weekly egg consumption</i>	14.4% eat 4 or more eggs/week 10.4% eat 3 eggs/week 47% eat 1-2 eggs/week 28% do not eat eggs	<u>Eggs & cholesterol</u> One large egg contains 213 mg of cholesterol. Minimum standard <300 mg/day; better lowering of CHOL <200mg/day; for rapid lowering of CHOL <100mg/day; and for reversing of arterial build-up < 5mg/day.	Talk about the impact of whole eggs on cholesterol level and how cholesterol can be reduced if indicated based on blood values. Limit the intake of egg yolks to 2 to 3 a week.

Eating Habits and Health Implications

Eating Practices	Results	Discussion	Recommendations (Highlight results)
<i>Dairy choices</i>	29% eat high fat 29% eat high & low fat 33% eat low fat 9% do not consume dairy	The risk for heart disease is greater in people who eat high fat cheese and drink 2% or whole milk when compared to those who eat cottage cheese and drink 1% or skim milk. The high fat choices are higher in saturated fat and cholesterol.	For the prevention and treatment of coronary heart disease or obesity, it is best to consume the dairy products lowest fat and cholesterol. Use the high fat dairy foods less frequently.
<i>Servings of dairy/day</i>	57% consume 2 or more serving/day 37% consume 6/week or less 6% reported never	Nearly 60% of the participants consume the recommended intake of dairy products/day. The remaining consume less than recommended or none. Calcium is one of major nutrients in dairy products.	Those who consume less than the suggested intake of dairy products should consume good sources of calcium such as dark green leafy vegetables, broccoli, beans, figs and tofu with calcium salts.
<i>Servings of non-dairy/day</i>	6% drink 2 or more/day 22% drink 1/day 29% drink 6/week or less 23.6% never & 20% not sure	Non-dairy calcium fortified drinks are an important source of dietary calcium for 6% of adults.	The best options for non-dairy calcium fortified milk or juice contain between 20 to 30% or more of the daily value for calcium intake.
<i>Servings of fruit intake/day</i>	42% consume 2 or more/day 29% consume 1/day 29% consume less than 1/day	It is recommended that we consume between 2 to 4 servings of fruit/day.	A high fruit intake has been associated with less cancer, heart disease, cataracts and lower blood pressure levels.
<i>Servings of high fat meat/day</i> Steak, luncheon meat, bacon, sausage, hot dogs and regular ground beef.	6% 2 or more/day 32% 1/day 9% 3 to 6/week 36% 3/month or less 16% never	As the frequency of high fat meat consumption increases the risk for heart disease and several cancers increase. Cancers of the prostate, colon and endometrium have been associated with high fat meats.	In one study the risk of colon cancer ^ 149% for daily use of beef, pork or lamb when compared to an intake less than 1/month. Prostate cancer risk ^ 250% for red meat 5 or more times/week when compared too less than 1/month. Eat high fat meats less often.
<i>Servings of low fat meat/day</i> Round steak, pork loin roast, tenderloin & chuck roast.	32% 1 or more times/day 7% 3 to 6 times/week 28% 1 to 2 times/week 12% 3 times/month or less & 12% never	Based on fat content, low fat meats are better choices than high fat meats.	Meat eaters should be encouraged to consume more low-fat meat options and less of high fat options.

Eating Habits and Health Implications

Eating Practices	Results	Discussion	Recommendations (Highlight results)
<i>Servings of fish or chicken/day</i>	39% 1 or more times/day 28% 3 to 6 times/week 29% 2/week or less 39% never	Eating chicken without skin or fish has been associated with a lower risk of colon cancer. Eating fish as little as 1/week has been shown to reduce the risk of sudden cardiac death. These lower fat white meats are better than other meat choices from a health standpoint.	Encouraged meat eaters to consume mostly of these low-fat meat options, especially fish in place of other meats such as lamb, beef and pork. However, beans (a plant protein food) are even better for preventing heart disease and cancer.
<i>Eating between meals</i>	16% rarely or never 47% occasionally 31% almost every day 6% don't eat regular meals	Frequent snacking has been associated with increased risk of colon cancer, increased body weight and decreased lifespan.	Inform others about the health implications of frequent snacking and encouraged them to reduce this habit, particularly high calorie "junk foods."
<i>Fast food meals</i> Hamburgers fried chicken, hot dogs, French fries, milk shakes, soda etc.	19% 3 to 7 times/week 43% 1 to 2 times/week 38% 3 or less times/month	A fast food diet increases the risk of a number of diseases including among others, heart disease, hypertension, cancer, obesity and diabetes.	Encourage people to replace fast food meals with healthier low fat choices such as a low fat "veg-burger" in place of a hamburger and pizza with less cheese and extra vegetable toppings.
<i>Baked goods</i> Cakes, cookies, pies, doughnuts and other pastries.	25% 1 to 4 times/day 13% 3 to 6 times/week 40% 1 to 2 times/week 22% 3 times/month or less	Most baked goods are high in total fat, saturated fat or hydrogenated fat, sugar and refined grains. The health risks associated with these foods are the same as for a fast food diet.	Encourage people to eat less of baked goods or replace them with healthier home made or store bought items with far less sugar, total fat, hydrogenated & saturated fat and refined grains.
<i>Fried foods</i>	11% 1 to 2 times/day 16% 3 to 6 times/week 47% 1 to 2 times/week 26% 3 times/month or less	A high fat diet promotes weight gain, obesity related problems, diabetes and several cancers. Excess fat accelerates the growth of cancerous cells. Mediterranean people who use olive oil, a mono-unsaturated fat, have far less cancer than do people who use high amounts of other types of dietary fat.	Encourage people to use more low fat cooking methods like baking, boiling, broiling or using a spray like Pam in place of oil for frying food. A non-stick frying pan can also help in reducing the fat intake.
<i>Salty foods</i> Chips, pickles, soy sauce, & canned soup, vegetables and meat.	27% 1 or more/day 16% 3 to 5 times/week 16% 1 to 2 times/week 10% 3 times/month 21% never 10% don't know	A low salt diet may reduce the risk of heart attacks, hypertension, osteoporosis and stomach cancer. For every 500mg of sodium you lose 10 mg of calcium.	Encourage people to decrease their intake of high sodium processed foods and watch the salt shaker. 2300mg of sodium (1 tsp. of salt) is more than enough for 1 day.

Eating Habits and Health Implications

Eating Practices	Results	Discussion	Recommendations (Highlight results)
<i>Cans of soda/day</i> <i>Cups of sweetened drinks/day</i>	15% 2 or more/day 19% 1/day 66% none 15% 3 or more/day 9% 2/day 17% 1/day 59% none	The wide use of simple sugars (brown, white, honey etc.) has been linked to dental cavities, obesity (and related health problems) high triglycerides, malnutrition and decreased resistance to disease.	Encourage people to decrease their intake of simple sugars while increasing their consumption of naturally sweet fruit and there juices in moderation.
<i>Vegetarian diets</i>	4% lacto-ovo-vegetarian 5% total vegetarian 91% meat eaters	A prudent diet high in whole grains, fruit, vegetables and legumes and modest in fat is associated with less cancer, hypertension, obesity, heart disease, diabetes and stroke. A low-fiber/high fat diet especially red meat is associated with higher rates of chronic diseases.	Encourage people to adapt a more prudent way of eating. Start where you are and work towards higher intakes of plant food in the diet. You can do any of the following: Eat more vegetables, fruit, and low fat white meats or substitute a non-meat protein food for one meal a week.
<i>Servings of vegetables/day</i> <i>Servings of fruit and vegetables/day</i>	10% 3 or more/day 21% 2/day 57% 1/day 12% none 16% 5 or more/day 34% 3 to 4/day 50% 2 or less/day 23.8% in the U.S. eat 5 or more servings of fruit/day	For health reasons it is advised that we consume between 3 to 5 servings of vegetables a day and a total of 5 or more servings of fruit and vegetables a day. Most Bermudians (84%) consume less than 5 servings of fruit and vegetables/day. This low intake must be addressed.	Encourage people to eat more vegetables and fruit. The antioxidants and plant pigments in these foods help to protect us against cancer, heart disease and other degenerative health problems. They also stimulate immune function.
<i>Frequency of dark green vegetables</i> <i>Frequency of dark green salads</i>	22% 1 to 2/day 25% 3 to 6/week 33% 1 to 2/week 12% 3/month or less 1% never 7% don't know/not sure 16% 1/day 19% 3 to 5/week 30% 1 to 2/week 15% 3/month or less 9% never 10% don't know/not sure	Carotenoids, the plant pigments in green vegetables (i.e. kale, turnip & mustard greens, broccoli, collards) are powerful antioxidants that quench free radicals, protect against oxidative damage and stimulates the immune function.	Encourage people to eat more green vegetables. Dark green leafy vegetables are good sources of calcium, iron, vitamin C, beta-carotene and fiber. Spinach although a dark green vegetable, is not a good source of dietary calcium.

Eating Habits and Health Implications

Eating Practices	Results	Discussion	Recommendations (Highlight results)
<i>Intake of carrots</i>	4% 1 to 2 times/day 17% 3 to 4 times/week 49% 1 to 2 times/week 18% 3 or less times/month 3% never	Carrots are rich in the carotenoid beta-carotene. This carotenoid is also found in pumpkins, sweet potatoes, mangoes, watermelon, cantaloupe and strawberries.	Encourage people to eat more of these powerful antioxidants that quench free radicals, protect against oxidative damage and stimulates the immune function.
<i>Servings of beans/day</i>	13% 1 to 3 servings/day 3 to 6/week 42% 1 to 2/week 19% 3 or less/month	Beans are a good source of fiber, protein, iron, calcium, magnesium, zinc and B vitamins. Beans are useful in decreasing elevated cholesterol and blood sugar levels. They decrease the risk for cancers of the prostate, pancreas and colon.	Encourage people to eat more beans, especially individuals with diabetes and heart disease. Eating beans 3 or more times a week has been shown to reduce the risk of colon cancer by more than ½ in people who eat red meat.
<i>Intake of nuts</i>	20% 1 to 3/day 10% 2 to 5/week 34% 1 a week or less 20% never	Regular nut consumption has been linked to a 51% reduction in heart attacks for those who ate nuts 5 or more times/week compared to those who ate nuts 1/week or less. Both almonds and walnuts have been shown to lower cholesterol levels in case control clinical studies. Nuts are a good source of protein, healthy fats and more.	Encourage people to eat nuts in moderation (1 serving = 1/4cup or 2T peanut butter). Remember the fat in nuts is a healthy fat. Walnuts and almonds may be better for you than peanuts. Natural peanut butter is better than brands made with hydrogenated fats.
<i>Cups of water a day</i>	61% 1 to 5/day 28% 6 to 8/day 11% 9 or more/day	A more liberal intake of water resulting in increased blood flow may help to prevent or postpone a stroke or heart disease, high blood pressure and intermittent claudication. High water intake may also decrease gallbladder and kidney stones & urinary tract infections.	Encourage people to drink at least 6 to 8 glasses of water a day. One way to do this is to fill up a water container with this amount of water and make sure you empty it before going to bed.
<i>Daily vitamin supplements</i>	47% yes 53% no 94% multi-vitamins 4% single vitamins 2% both single & multi-vitamins	The preponderance of the evidence points to food and not vitamins as the best source of nutrients. Since many supplements have little or no therapeutic value and may be associated with harmful reactions, it is advisable for most people to leave them alone. A multi-vitamin supplement that meets the RDA is at a safe level.	Groups that may benefit from supplements include among others: pregnancy; 1 vit K dose at birth; iron for heavy menstruation; calcium for osteoporosis or low calcium diet; vit. B12 for the elderly and total vegetarians; heavy smokers, alcoholics and elderly people (and others) who do not eat properly.

Stress, Health and Coping Skills

Many people describe stress as something that happens to them – the problems or concerns they have to deal with. However, the research indicates that it is not what we have to deal with but rather how we deal with it that determines if we will rise to the occasion or become all unraveled. Stressors are pressures from without (change, deadlines, heat, overload, pollution, finances, death, illness, family relationships etc.) and pressures from within (absence of meaning, unfulfilled needs, life scripts or blue prints for thinking, unresolved emotions, perfectionism, fear of failure or success, negative self talk etc.)

Stress is how we respond to these demands that impact upon our lives. Our perception of life's stressors largely determines our responses and the eventual outcome – whether productive or destructive. However, Biogenic Stressors (nicotine, caffeine, amphetamines, and exposure to heat or colds) do not require our perceptions to elicit a stress response. Muscle tension, increased perspiration and elevated blood pressure, heart rate, blood sugar and blood fats are all examples bodily responses to stress.

It is important to note that we all need stressors to live. While little or high demands on or of the job can lead to distress and low performance or burnout, an optimal level of demands appropriately handled results in high performance and feelings of self satisfaction. No matter if a stressor is good or bad, we have the final word. We can learn from and grow through the stressors of life by utilizing effective skills for managing stressors and creating balance in our lives, or use ineffective coping methods and experience stress related disorders.

Key areas in effective stress management include: 1) *controlling stressors* (modify, reduce, avoid or control); 2) *managing stress reactions* (choose a positive response, change your perception, appreciate the lessons of life and avoid the stress response); 3) *seeking social support* (emotional, physical, social, spiritual, financial etc.); 4) *finding satisfaction in service to others* (we are blessed more by giving than by getting); and 5) *keeping healthy* (adequate exercise, sleep, relaxation, self discipline and a healthy diet).

There are negative consequences to chronic stress overload. Dr. Phillip Rice in his book *Stress and Health – Second Edition 1992*, identified the following mental and social effects of chronic job stress. These effects of stress can also be experienced of the job.

Mental Effects

- Mental fatigue with loss of creativity
- Confusion, forgetfulness, difficulty making decisions
- Anxiety, including feeling of panic
- Tension, frustration, irritability, anger, and resentment
- Depression
- Lower self worth
- Boredom and lower intellectual functioning

Social Effects

- Procrastination, avoiding important work and home responsibilities
- Lack of concern for others
- Reduced effectiveness in communication
- Emotional hypersensitivity with a tendency to overreact to others, or feelings of isolation with a tendency towards suppression of feelings and even withdrawal
- Loss of control, quick temper, aggression
- Increased risk-taking behaviour including gambling
- Increased drug use and abuse

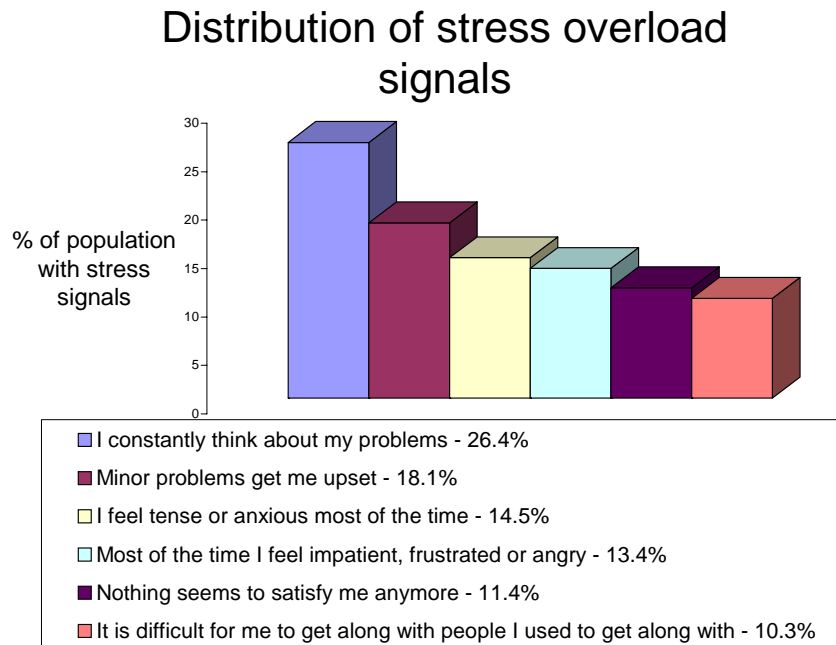
Stress Related Illnesses (*Resource: The American Institute of Stress*)

Stress affects the onset, treatment or recovery from the following conditions.

- Cardiovascular diseases
- Cancer
- Depression
- Diabetes mellitus
- Tuberculosis
- Rheumatoid arthritis & gout
- Hypertension
- Ulcers, warts & skin rashes
- AIDS & herpes
- Tension headaches, body aches and pains
- Common cold
- Dandruff, graying & loss of hair
- Allergies (e.g., asthma, hives, hay fever)

Stress Overload Signals

In the adult wellness survey we assessed for six stress overload signals. These stress signals identify individuals who are not coping effectively with life's stressors. The following bar graph displays the distribution of these stress signals in the adult population.



The likelihood of stress related health outcomes increase with a rise in the number of stress overload signals from 1 (low) to 2 (moderate) and then to 3 or more (high). Research has linked high stress overload to increased illness and health related medical claims.

Stress Overload Categories

- 60% reported no indication of stress overload
- 15% had a low level of stress overload
- 10% had moderate stress overload
- 15% had a high level of stress overload
- 40% of the population indicated at least 1 stress overload signal

Perception of Coping Skills

- 20% reported trouble coping with their current stress load
- 46% reported coping fairly well
- 33.7% reported coping very well
- 0.2% reported unable to cope any longer

Signals of Distress and Perceived Coping Difficulty

- As stress overload increased from none to high stress overload, perceived coping difficulty increased from 8% of the population to over 50%
- A direct correlation exists between a perception of poor coping skills and high stress overload
- Perceived coping difficulty was also associated with job dissatisfaction, health hazards on the job, lack of exercise, increased TV viewing, increased alcohol consumption and lack of social support

Coping Methods

The adult participants indicated a number of different ways for coping with every day stress. The major methods were TV viewing, drinking alcohol, exercise, prayer, talking to someone and various combinations of these options. Some of these methods are effective in managing stress while others increase overall stress load. We looked at each coping method and how it correlates with stress overload signals. In each comparison we combined moderate and high stress overload scores.

For each of the following methods reported for coping with stress, we identified the percentage of individuals in each group who experienced moderate/high stress overload.

- Exercise (15%), prayer (15.6%), talk to someone (22.3%), drink alcohol (25%), TV viewing (27.1%) and all combinations including TV and alcohol (30.9%).

Alcohol, TV and Coping with Stress

- 34% of the respondents use TV and or alcohol plus other methods of stress management such as prayer, exercise, talking to others or music
- 66% of the respondents do not use TV or alcohol to cope with stress
- 31% of the respondents that use TV or alcohol with other methods for coping with stress had moderate/high stress overload
- 22% of the respondents that did not use TV or alcohol to cope with stress had moderate/high stress overload

Hours of TV Viewing and Stress

- The average adult in Bermuda watches 2.44 hours of TV per night
- 11% of the respondents watch less than 1 hour of TV a night
- Approximately 20 to 23% of the respondents watch TV in each of the following time periods: 1-1 ½ hours, 2-2 ½ hours, 3-3 ½ hours and 4 or more hours
- 15% of the respondents that do not watch TV had moderate/high stress overload
- 33% that watch 4 or more hours of TV had moderate/high stress overload
- 85% with freedom from stress overload do not watch TV
- 79% with freedom from stress overload watched less than 1 hour of TV a night
- 49% with freedom from stress overload watched 4 or more hours of TV a night

Exercise in the Past Month and Stress

- 67% exercised in the past month
- 33% were inactive in the past month
- Inactivity was associated with double the number of participants with moderate/high stress overload when compared with the exercise group (19% Vs 37%)

Frequency of Aerobic Exercise in the Past Month and Stress

- 75% exercised for an average of 2 times or less a week
- 9% exercised 3 times a week
- 15% exercised for 4 or more times a week
- 13% with moderate/high stress overload exercised 4 or more times a week
- 22% with moderate/high stress overload exercised 2 times a week or less
- Exercising for 30 minutes or longer resulted in lower stress overload scores when compared to those who exercised for less than 30 minutes

Regular Vigorous Aerobic Exercise and Stress

- 17% of the respondents never engage in vigorous exercise
- 24% get vigorous exercise 1 a week or less
- 34% exercise 2 to 3 times a week
- 25% get vigorous exercise 4 or more times a week
- 15% with moderate/high stress overload exercised 4 or more times a week
- 45% with moderate/high stress overload never engaged in vigorous exercise

Recommended Strategies

- Address the finding that suggest 25% of population may be experiencing moderate to high stress overload
- Explore the mental, social and physical implications of unresolved stress overload and the importance of identifying effective coping mechanisms
- Note the finding that perceived coping difficulty correlates with moderate/high stress overload signals:
 - As stress overload signals increased from none to moderate/high stress overload, those with perceived coping difficulty increased from 8% to over 50%
 - Talk about the following factors that were significantly associated with perceived coping difficult by the participants: job dissatisfaction, health hazards on the job, lack of exercise, increased TV viewing, increased alcohol consumption and lack of social support

- Highlight the findings on the different methods identified for coping with stress and what these stress scores suggest
 - Moderate/high stress overload: Exercise (15%), prayer (16%), talk to someone (22%), drink alcohol (25%), TV viewing (27%) and all combinations with TV and/or alcohol (31%)
 - That using TV and alcohol to cope with stress can result in higher levels of stress overload
 - While the results for talking to others and alcohol consumption are close for moderate/high stress overload, the scores for freedom from stress overload for talking and drinking are 62.3% and 44.4% respectively
 - While TV and alcohol may temporarily distract an individual from the problems and concerns of day to day living, TV viewing (except for programmes designed to aid in addressing specific concerns) and alcohol are not effective at managing life's stressors
 - On the other hand, exercise, prayer (linked with faith) and talking issues through can be used as effective tools for coping with daily stressors
 - As the hours of TV viewing increased (an average of 2.44 hours per night), the percentage with moderate/high stress overload increased from a low of 15% for no TV viewing to a high of 33% for 4 or more hours of TV a night
 - Note that too much TV viewing can steal time from family interaction and more productive pursuits that make life more fulfilling and help in coping with stress
 - If not controlled, TV viewing can become addictive, dwarf our relationship skills, weaken our creativity, give us a false sense of reality and encourage poor lifestyle habits
 - Inactivity was associated with double the percentage with moderate/high stress overload - 19% for exercise in the past month and 37% for no exercise
 - Engaging in aerobic (i.e. running, walking, cycling) type exercise (not necessarily vigorous) for 4 or more times a week (30 minutes or longer) was key to producing the lowest level of moderate/high stress overload
 - Engaging in vigorous aerobic type exercise for 4 or more times a week produced the lowest level of stress overload when compared to those who never performed vigorous aerobic exercise
 - Inform that exercise buffers the effects of mental stress, improves psychological well-being and mood state, reduces depression (frequent exercise for several months) and anxiety (aerobic for 20 minute sessions or longer), improved self-esteem (both aerobic and anaerobic exercise such as weight lifting) and results in small to moderate positive effects when complex memory tasks are tested
 - Inform that the psychological benefits of regular exercise may be related to self-mastery, social interaction, time-out/distraction, improved brain fitness (blood flow, blood vessels & nerve ending), normalization of neurotransmitters (serotonin, dopamine and norepinephrine) and body endorphins with 'morphine-like' qualities
 - B-endorphin increases in the blood during intense exercise or exercise that last longer than 1 hour
 - Direct individuals to the appropriate resources, self help materials or agencies for improving stress management skills if indicated

Social Support and Stress Management

Having a support system of family and/or friends, with whom you can share problems and get help when needed, is important for effectively coping with life's stressors. We need one another. The biblical counsel is true - "It is not good for men or women to be alone."

Do you have a good social support system of family or friends?

- 86% yes
- 14% no
- 19% with moderate/high stress overload for social support system
- 64% with moderate/high stress overload for no social support system

What is your marital status?

- 48% married
- 41% single
- 8% divorced
- 2% widowed
- 2% separated
- 21% married with moderate/high stress overload; 10% with minor stress overload
- 18% divorced with moderate/high stress overload; 31% with minor stress overload
- 32% single with moderate/high stress overload; 17% with minor stress overload

How many people live in your household?

- 13% with 5 or more persons
- 18% with 4 persons
- 19% with 3 persons
- 27% with 2 persons
- 23% with 1 person
- 15% with moderate/high stress overload for 5 or more persons
- 25% with moderate/high stress overload for 4 persons
- 21% with moderate/high stress overload for 3 persons
- 26% with moderate/high stress overload for 2 persons
- 34% with moderate/high stress overload for 1 persons

Recommended Strategies

- Note that 14% of the population may not have a good social support system
- Highlight the findings that good social support was associated with only 19% with moderate/high stress overload while poor social support was associated with 63% with moderate/high stress overload
- Since a good social support system is an effective buffer against the stressors of everyday life, encourage individuals without a good support system to reach out and take the risk associated with building new friendships – he who would have friends must show himself friendly
- Discuss the findings that being married followed by being divorced was associated with the lowest percentage of overall stress overload while those who lived alone had the highest level of stress overload
- Explore the findings that suggest larger families (5 or more) have lower stress overload (14% with moderate/high stress overload) when compared to persons who lived alone (34% with moderate/high stress overload) – Is it size or social support?
- The negative results of stress overload are more likely to occur in individuals who in addition to living alone, do not have a social network of supportive friends, co-workers or family
- Explore the role of factors such as unconditional love, communication, humility, forgiveness, patience, effective boundaries and trust as they related to stress reduction

Addiction, Dependencies and Health

An addiction has been defined as a love/hate relationship with a substance, individual or process that gives the illusion that real needs are being met through a mood change. You are addicted if you cannot control when you start or stop the activity. The criteria for dependence or addiction is as follows:

- Highly controlled or compulsive activity or substance use
- Psychoactive effects derived from activity or substance use
- Behaviour reinforced by activity or substance use
- Continuation of activity or substance use despite harmful effects
- Withdrawal symptoms and relapse following abstinence
- Recurrent cravings for activity or substance

The mood altering activity or substance of choice is the one that best fits an individual's characteristic way of coping with stress or feelings of unworthiness. For example, people who cope with stress by relaxation and isolation (Satiating) may use alcohol, cigarettes (long drags), heroin, benzodiazepine, TV, work and food. People who cope through physical or intellectual activity (Arousal) may use amphetamines, cocaine, coffee or tea, cigarettes (short puffs) risk taking behaviours, gambling and work. People who cope by imagery (Fantasy) may use LSD, daydreaming, amusement parks or other activities to escape from the realities of everyday life.

Addictions develop through the following four stages: (1) experimentation and discovery that the addictive agent produces an enjoyable sensation; (2) seeking the "mood swing" produced by the agent; (3) preoccupation with the "mood swing"; and (4) obsession with the agent & "mood swings" which may be less intense than before.

In our efforts to help those individuals who have addictions it is important to address the relationships that cost more than they benefit, the illusion of need fulfillment, the elements of dependency, coping styles, coping skill and level of motivation. The section on readiness to change may be useful in helping people who have addictions.

In this section on dependencies we looked at alcohol intake, mood altering drugs, cigarette smoking and caffeine containing beverages.

Alcohol and Health Outcomes

In Bermuda's society alcohol plays a central role at family gatherings, celebrations, social events, recreational activities and the hospitality industry. According to the alcohol industry a few drinks of alcohol will decrease your stress, enhance your fun, improve your social skills, save your heart, and make you feel good. While the "advantages" of alcohol consumption are often advertised, there remains a darker side to this legal drug.

The most commonly known health concerns associated with heavy drinking are cirrhosis of the liver, heart disease, several types of cancer (mouth, tongue, pharynx, larynx, esophagus, stomach, liver, lung, pancreas, colon, and rectum), violence, family dysfunction and nutritional deficiencies. Alcohol dependency develops slowly over time. While no one plans to become an alcoholic, up to 15 percent (or ever 1 in every 7) of people who use alcohol will eventually become alcoholics^{1 2}.

Based on this adult survey 11 percent (or 1 in every 9) of adults in Bermuda who ever tried alcohol are strongly indicated as being abusers of alcohol. (Note: We defined alcohol dependency based on a score of 2 or more using the CAGE test for identifying problem drinking). Given this likelihood of become a heavy drinker it would be wise to caution moderate drinkers and encourage non-drinkers to remain alcohol free. Further, alcohol use can increase the likelihood that individuals will go on to harder drugs. The usual sequence is tobacco, alcohol, marijuana and then other illegal drugs³. Advertisement that encourages drinking among non-drinking youth and adults should be discouraged. Bermudians should encourage counter advertisement that identifies the risk associated with moderate and heavy drinking.

While it widely believed that moderate drinking is safe, the body of scientific data suggests that the health risk of moderate drinking out way its health benefits. Health risk increase in proportion to the amount of alcohol consumed. While the health risk associated with moderate drinking are lower when compared to heavy drinking, they do exist. Moderate drinkers or would be moderate drinkers should be aware of these health risk so that they can make decisions based on fact rather than distortions of the truth.

The Dietary Guidelines for Americans do not advise people to drink alcohol. However, if you do drink alcohol they advise you to drink it in moderation (1 drink/day for females and 2 drinks/day for males). Others in the scientific community are concerned about the health implications of even moderate drinking. Consider the following conclusions by alcohol researchers, Dr. Rankin and Dr. Ashley in *Public Health and Preventive Medicine-13th edition* (1992):

- The risk of alcohol-related health problems is greatest among those labeled “heavy drinkers”
- However, because “social drinkers” outnumber “heavy drinkers,” the majority of alcohol-related problems occur among “social drinkers”
- “...acute alcohol intoxication or relatively low levels of chronic alcohol consumption can produce serious adverse effects in individuals who otherwise fit within the social norms of alcohol use.”
- “As information grows on how alcohol is hazardous to health, we find ourselves less secure in defining what is safe. Rather, alcohol use involves a continuum of risk...”

¹ *Public Health and Preventive Medicine – 13th edition*, 1992 pp. 744-745

² Guide to Clinical Preventive Services, Baltimore, MD: Williams and Wilkines, 1989 pp. 277-278

³ National Institutes of Health Publication No. 29-3064. Revised Nov. 1991 p. 63

The World Health Organization's Position on Alcohol Consumption⁴

- “Alcohol consumption causes some of the world’s most serious health problems.”
- “Drinking adversely affects a significant proportion of the population, not just a minority of alcoholics or heavy drinkers.”
- Light drinking is unlikely to lower heart disease risk in people who are already taking other lifestyle precautions like exercising regularly, not smoking and eating less fat.
- The publicity given the use of moderate amounts of alcohol for heart disease prevention is “not the result of rigorous scientific research, but is to a large extent inspired by commercial purposes.”
- “The less you drink the better.”

⁴ Emblad, H. Moderate drinking: Serious warning by WHO specialist. *World Health Organization Press Release*. November 1, 1994

Health Risk Increased with Moderate Drinking (1 to 2 drink/day)

- Hypertriglyceridemia ⁵
- Hypertension (2/day) ⁶
- Hemorrhagic Stroke ^{7 8}
- Decreased immune function ^{9 10}
- Accidents ¹¹
- Oral cancer ¹²
- Breast cancer ^{12 13}
- Larynx cancer ¹²
- Esophageal cancer ¹²
- Osteoporosis ¹⁴
- Gastritis ¹⁵
- Brain Shrinkage or atrophy ¹⁶
- Fetal alcohol syndrome ¹⁷

⁵ Public Health Service DHHS Publication No. 88-50210, 1988 p. 658

⁶ *Journal of Cardiology* 1990 Mar 1; 65 (9): 633-637

⁷ *Stroke* 1995 Jan; 26 (1): 40-45

⁸ *JAMA* 1986 May 2; 255(17): 2311-2314

⁹ NIH Publication No. 94-3699, Sept 1993 pp. 244-246

¹⁰ *Alcohol Clin Exp Res* 1989 Oct;13(5): 636-643

¹¹ Department of Transportation, HS, "Effect of Low Dose of alcohol on Driving Related Skills, A Review of the Evidence," July 1998, pp. 67, 28.

¹² International Agency for Research on Cancer 1988, pp. 167-184

¹³ *New England J Med.* 1987 May 7; 316(19): 1169-1173

¹⁴ IARC 1988, pp. 252, 253, 288

¹⁵ *Alcohol Health and Research World*, Vol. 10, No. 2 1985, 1986 p. 6

¹⁶ *Nutrition for Health and Health Care* Whiting 1996, pp. 208, 228

¹⁷ AHRW, Vol. 16, No. 1, 1992 p. 31

¹⁸ *British Journal of Obstetrics and Gynecology* 1996 Nov; 103(11): 1134-1142

¹⁹ *Diet and Health* 1989, p. 16

²⁰ AHRW Vol. 14 No. 2, 1990 pp.85-89

²¹ *Ibid.*, Vol. No. 4, 1985 pp. 11-13

²² *Understanding Nutrition* 1988, pp. 145-146, 191

²³ *Ibid.*, 1990 pp. 186-196

²⁴ *Ibid.*, 1990 p. 190

²⁵ AHRW, Vol. 16, No. 1, 1992, pp. 64-71

- Menstrual pain/PMS ¹⁸
 - Heavy drinking is potentiated ¹⁹
 - Impairment of judgement, foresight & moral reasoning, altered mood, depression, inhibitions, confused thinking, exaggerated emotions & decreased peripheral vision ^{20 21 22 23}
 - The sedation of the brain's frontal lobe, the center for reason and judgement ²⁴
 - An increase in risky behaviours that can lead to unwanted pregnancies & STD's ^{25 26}
-

²⁶ Ibid., Vol. 10 No. 3, 1985, 1986, p. 46

²⁷ American College of Cardiology Annual Meeting, 1997

²⁸ Tufts University. Special Report: *Uncorking the facts about alcohol and your health*. Tufts University Diet and Nutrition Letter, August 1995, 13(6): 4.6

No one has ever proven that a person with an excellent lifestyle gets any benefits by drinking in moderation. For heart disease prevention, the safest course is a healthy lifestyle and non-alcoholic beverages. Consider this, both aspirin and red wine slow the activity of platelets by about 45% while red grape juice slows platelet activity by about 75%, thus reducing the risk of dangerous blood clots which can result in a heart attack.²⁷ One glass of red grape juice each day can reduce blood clots that lead to heart attacks and stroke.²⁷ Although there is evidence to show that alcohol boost HDL cholesterol level, exercise and losing weight raise this “good cholesterol” even more.²⁸

Have you Ever Tried Alcohol?

- 88% of adults have tried alcohol at some time in their lives
- 12% have never drunk alcohol in their life

Percentage who drank Alcohol in the Past Month

- 67% of adults drank 1 or more drinks of alcohol in the past month
- 21% drank less than 1 drink in the past month or no longer drink alcohol

Average Alcohol Intake on Drinking Days

- On drinking days 77% of alcohol consumers drank 3 or more drinks
- On drinking days 23% of alcohol consumers drank 1 to 2 drinks

Alcohol Abuse Based on the CAGE Questionnaire

- We suspect that 12% of the population are abusers of alcohol
- Another 11% are strongly indicated as being abusers of alcohol
- Stress over load averaged from 21% for non-alcohol abuse to 44% stress overload for alcohol abuse

Number of Binge Drinking Occasions

- 56% of the drinking population binge at least once in the past month (5 or more drinks/occasion is considered heavy drinking)
- 37% of the total population binged at least once in the past month and 21% binged 2 or more times during this same time period
- Moderate to high stress overload ranges from 23% for none binge drinkers and non-drinker to 43% for those who binged 3 or more times in the past month

Mood Altering Drugs and Stress

- Note that 76% reported no drugs or medication to alter moods, relax or sleep

- 6% used mood enhancers daily, 11% several days a week and 7% a few times a year
- Note that the regular use of drugs too affect mood, relax or sleep was associated with an increase in stress overload (19% for no drugs to 69% for daily use of drugs)
- While drugs appropriately applied can help with stress related problems, other methods of managing stress should be employed in a comprehensive programme that addresses overall health and wellness
- Individuals who frequently use mood-altering drugs to relax or sleep should explore different options under the direction of their physician such as a specialist in counseling skills, health and fitness or stress management as appropriate
- It is also important to note that health problems that are treated by drugs that affect mood and sleep habits can also increase stress levels

Recommended Strategies

- Note the following findings on alcohol use in the adult population:
 - Alcohol use has touched the lives of almost every adult (88%) in Bermuda
 - 67% or 2/3 of adults in Bermuda currently drink alcohol (based on the months of June, July and August)
 - 22% of persons who have ever drunk alcohol drank alcohol less than once in the past month
 - 76% of individuals who drink alcohol drank 3 or more drinks of alcohol at one time in the past month while the remaining 23 % drank 1 to 2 drinks at a time
 - As alcohol consumption increased moderate/high stress overload increased
 - Based on the CAGE questionnaire for assessing alcohol abuse, we suspect that 12% of the population are abusers of alcohol and another 11% are strongly indicated as being abusers of alcohol
 - Moderate/high stress over load among those who drank alcohol ranged from 21% for non-alcohol abusers to 44% for a strong indication of alcohol abuse
 - 37% of all adults binged at least once in the past month while 21% binged 2 or more times during this same time period
 - 56% of the drinking population are binge drinkers (5 or more drinks/occasion is considered heavy drinking)
 - Moderate to high stress overload ranged from 23% for no binge drinking as well as non-drinkers to 43% for those who binged 3 or more times in the past month

- Similar percentages were obtained for the CAGE abuse scale (23% - includes suspicion & indication of abuse) and bingeing for 2 or more times a month (21%)
- High stress overload and high alcohol consumption may be related
- Misleading advertisement and the high level of alcohol consumption among adults must be addressed
- Educate that alcohol consumption is associated with a number of health risk, even at moderate levels (an average intake of 1 to 2 drinks/day)
- Educate that alcohol use can lead to other drugs, up to 15% (or 1 in every 7) of people who start out drinking responsibly become heavy drinkers and that the risk associated with drinking alcohol are far greater than its health benefits
- 12% or 1 in 8 adults in Bermuda who ever drank alcohol in their lifetime scored 2 or higher on the CAGE questionnaire for assessing alcohol abuse
- Direct people desiring education or treatment to the appropriate agencies and or resource materials that address substance abuse
- The CAGE questionnaire can be used as a quick tool for assessing alcohol abuse

CAGE Questionnaire for Assessing Alcohol Abuse (See page 47 for your score)

Have you ever felt you ought to **C**ut down on drinking?

Have people **A**nnoyed you by criticizing your drinking?

Have you ever felt bad or **G**uilty about your drinking?

Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (**E**ye-opener)?

How to score the test

One yes response should raise suspicion of alcohol abuse. More than one yes response should be considered a strong indication that alcohol abuse exists. A trained professional should follow up with a more detailed assessment if an individual scores 2 or more yes responses.

Smoking and Health

People smoke for a number of different reasons - stimulation, pleasure, dependency, handling, habit and as crutch to deal with stress and discomfort. Although smoking was not reported as a method of coping with stress, most smokers smoke to relax and deal with stressful situations. The drug nicotine in cigarettes mimics the action of adrenaline, a hormone and acetylcholine, a neurotransmitter. As a result the smoker may be more alert, think faster or feel aroused and invigorated. Short quick puffs on cigarettes act as a stimulant while long drags relax.

In spite of these “benefits”, the damaging effects of cigarette smoking far out-weigh and cancel out any temporary gains. Shortness of breath, coughing, fatigue, early wrinkles, back injuries, problems at work (including increased accidents, injuries and discipline problems), decreased productivity, increased illnesses and days of bed disability per year, and insomnia are more common in smokers than in non-smokers. Smokers are at a

greater risk for heart disease, lung disease and cancer. These undesirable outcomes are counterproductive to relaxation, health and living life at its best.

Have You Ever Smoked Tobacco?

- 56% of the participants have smoked cigarettes at some time in their lives

Smoked at Least 100 Cigarettes in a Lifetime

- 40% of the smoking population have smoked at least 100 cigarettes in their lifetime
- 47.8% in the U.S. have smoked at least 100 cigarettes in their lifetime (with a range in U.S. states from 31.7 to 54.4%)

Current Smoking Habit

- 69% of those who ever smoked reported not at all, 26% indicated they smoke every day and 5% report smoking some times/rarely
- Moderate/high stress overload increased as smoking levels increased from none (19.5%) to every day (37%)

Cigarettes Smoked on an Average Day

- 40% 11 to 20 cigarettes, 39% 6 to 10 cigarettes and 21% 1 to 5 cigarettes a day
- Moderate/high stress overload increased as the number of cigarettes smoked increased from 1 to 5/day (26.8%) to 11 to 20/day (44.2%)

Attempts to Quite Smoking in the Past 12 Months

- 44% of current smokers have attempted to quite smoking (1 or more days) in the past 12 months

Frequency of Exposure to Second-Hand Smoke

- 82% of the population are exposed to second-hand smoke at least once a week
- 28% are exposed to second-hand smoke every day

Have you Ever Smoked a Cigar?

- 37% of adult smokers have smoked a cigar

Recommended Strategies

- Inform the public that 17.4% of all adults still smoke cigarettes while another 38.4% have quite the habit
- Encourage current smokers with the news that 69% of those who have ever smoked have quite the habit
- Less Bermudians currently smoke (17.4%) compared to U.S. (22.9% with a range in U.S. states from 14.2 to 30.8%) adults who smoked 100 cigarettes in their lifetime and now smoke everyday or some days
- Highlight the findings that stress overload increased as cigarette smoking increased, and that stress overload was significantly less in smokers who quit the habit when compared to those who are still smoking
- Provide smokers with self help materials and educational support on the most effective and health promoting ways to quite smoking and address the underlying reasons that keep them hooked
- Use to your advantage the finding that almost ½ (44%) of all current smokers in Bermuda have attempted to quite smoking (1 or more days) in the past 12 months
- Provide stop smoking classes for those who would like to stop and motivational messages for those who are not ready to change
- Make use of the suggestion in the section on readiness to change health habits
- Given the finding that 28% of the population are exposed to second-hand smoke every day, it is important to educate the public on the health implications of second-hand smoke and identify ways of address this health problem
- Highlight the fact that cigars are as much a health hazard as are cigarettes (37% of adult smokers have smoked a cigar)

Caffeine Containing Drinks

Caffeine is the world's most popular stimulant. While a well-timed cup of tea, coffee or can of cola can make a groggy mind alert, high intakes of caffeine can cause a variety of unpleasant symptoms that may be overlooked as the cause. Nervousness, irritability, coping problems, PMS symptoms, muscle twitching, insomnia, flushed appearance and elevated temperature can all be caused by caffeine. There may also be palpitations, heart arrhythmia and gastrointestinal disturbances (excess stomach acid production, gastroesophageal reflux and heartburn).

The caffeine in three or more daily cups of regular coffee may lessen a woman's chance of becoming pregnant. To reduce the risk of miscarriages, birth defects and underweight babies, pregnant women should consume as little caffeine as possible. Regarding bone health, a women losses about five milligrams of calcium for every six ounces of coffee or two cans of cola. The effects on men may be similar with regard to bone health.

Average Intake of Coffee, Tea and Cola

- 47% drink coffee or tea on a daily basis
- 52% do not drink coffee or tea
- 24% drink caffeine-containing soda on a daily basis
- Moderate/high stress overload increased from 22% for non drinkers of coffee or tea to 31% for those who drank 3 or more servings of coffee, tea and cola a day

- 16% drink 1 to 2 cups of decaffeinated tea or coffee on a daily basis
- Less than 1% drink 3 or more cups of decaffeinated coffee or tea a day

Recommended Strategies

- Inform the public of the possible symptoms associated with a high intake of caffeine
- Highlight the findings suggesting that high intakes of caffeine containing beverages may contribute to increased stress overload
- Encourage adults who consume coffee, tea or cola on a regular basis to determine if they're experiencing any side effects related to caffeine consumption, and if so, adjust their intake accordingly
- Inform individuals that decaffeinated options, cereal beverages and herb teas can be used as substitutes for caffeine containing drinks
- Note that 16% of Bermudians already use decaffeinated tea or coffee
- Inform women considering childbearing of the possible risk associated with drinking 3 or more cups of regular coffee a day

Health Status and Health Perceptions

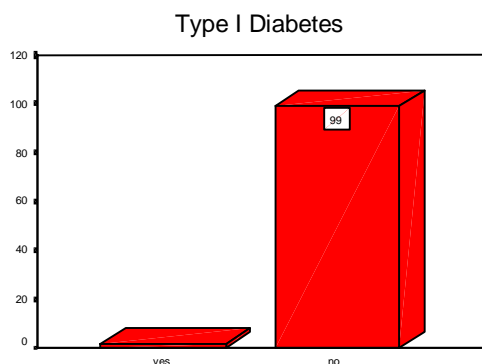
Health Status is a quality of life indicator. It influences home life, job performance, social interactions and the ability to live life to the fullest. Healthy people cope better with stress than do individuals who are not in the best of health. In this section we asked questions to address physician identified health concerns, perceptions of physical and mental health, medication practices, frequency of colds and sleep habits.

Physician Indicated Health Problems

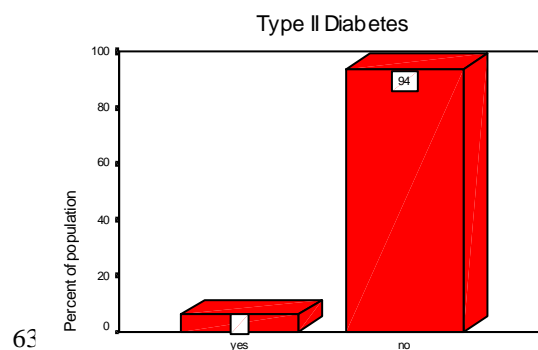
Note and highlight as appropriate the preventable measures and changeable risk factors for the following physician indicated health problems.

Diabetes

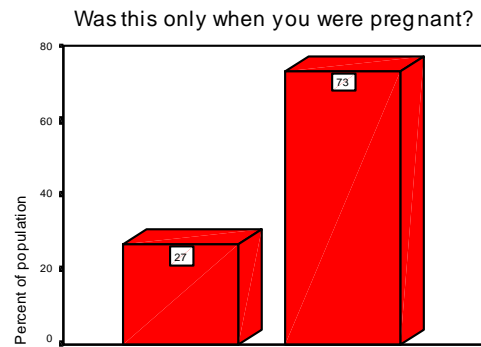
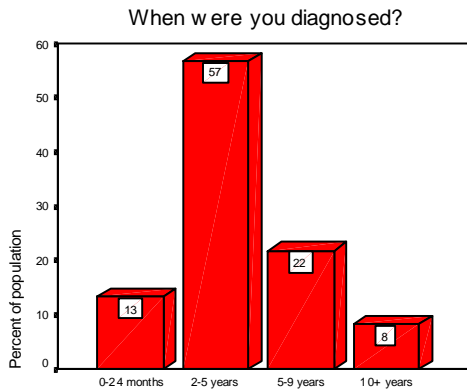
The 7% prevalence of known diabetes is the same percentage as identified in the Bermuda Diabetes Epidemiology Project 1996.



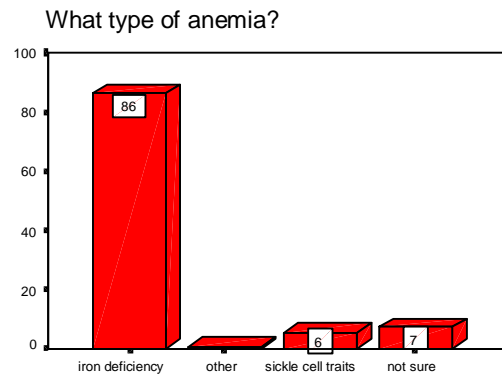
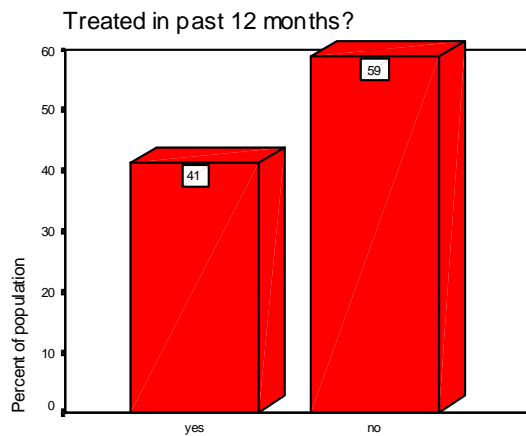
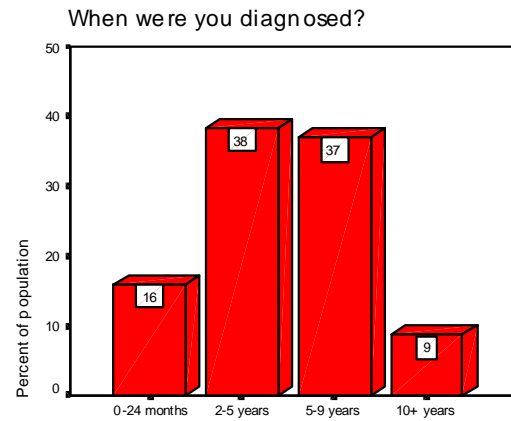
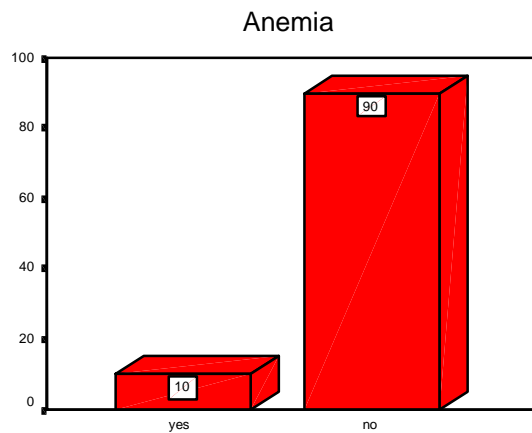
Type 1 Diabetes or IDDM may have environmental triggers.
Triggers suggested include cold weather, viruses & no breast-feeding.



Type II Diabetes (NIDDM) is largely preventable despite genetic factors.
Keys to prevention include exercise, weight control & healthy eating.



Anemia



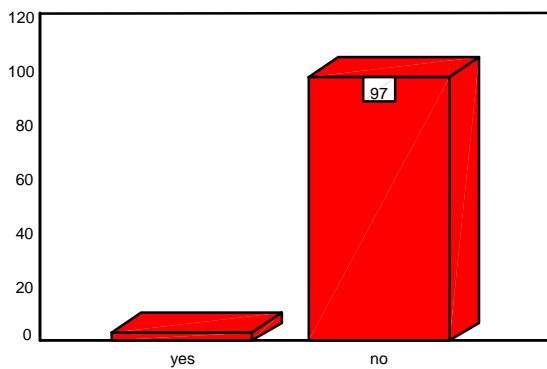
Clearly iron deficiency is the major type of anemia.

High risk: Heavy menstruation, pregnancy, under 5, elderly & alcoholics.

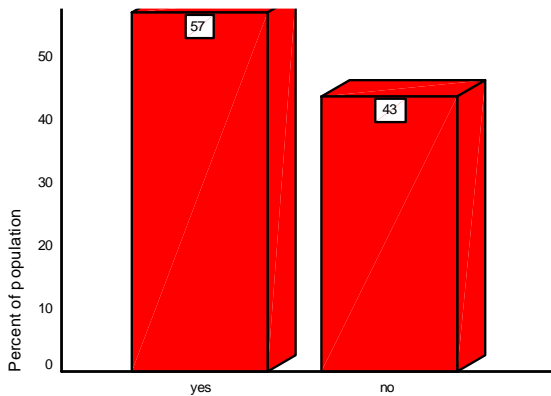
Cancer

The cancer causes in the U.S. are diet (35%), tobacco (30%), undetermined cause (18%), sexual behaviour (7%), pollution (4%), alcohol (3%) and radiation (3%). *Scientific American 1996*

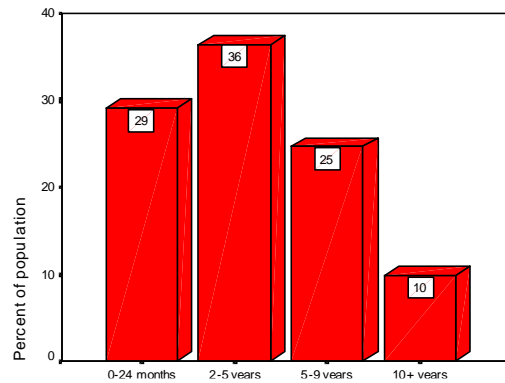
Cancer



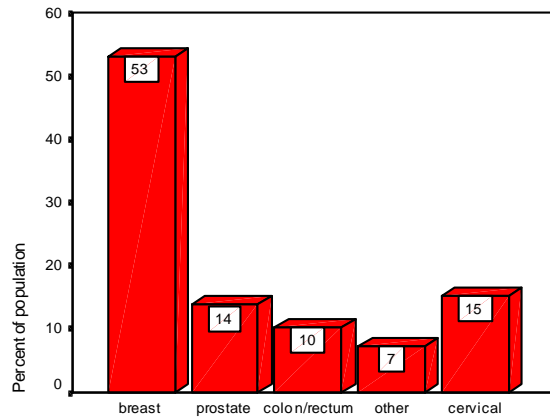
More than 2/3 of cancers can be prevented.



When were you diagnosed?

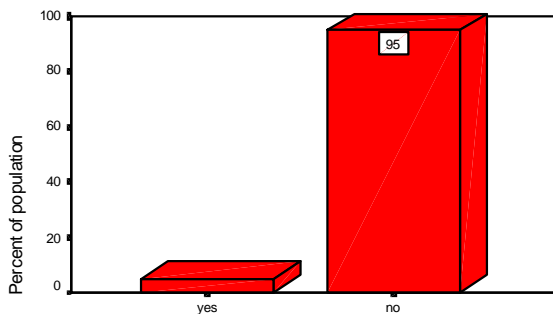


What type of cancer?



Anorexia

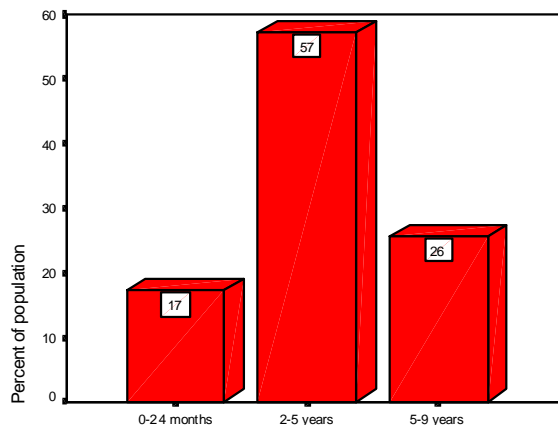
Anorexia



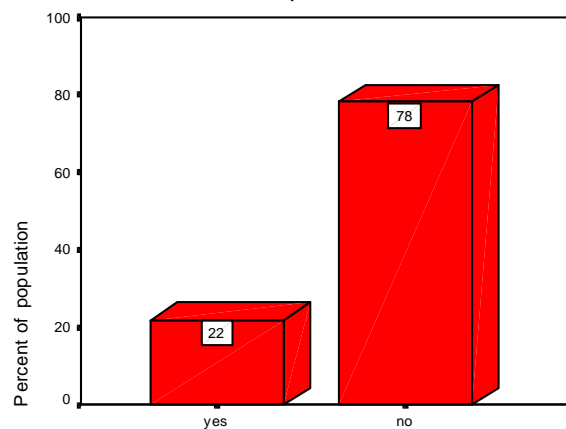
Body-image disturbances in women have been attributed to:

Sexual abuse, sexual fear, negative feedback on weight, perfectionism, cultural beauty standards, negative self-esteem and controlling parents.

When were you diagnosed?

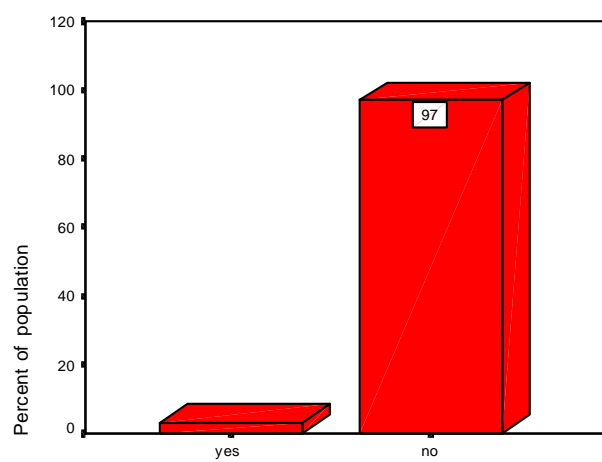


Treated in past 12 months?

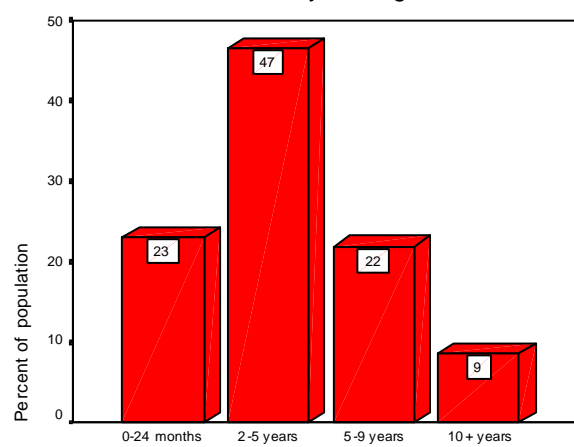


Bulimia

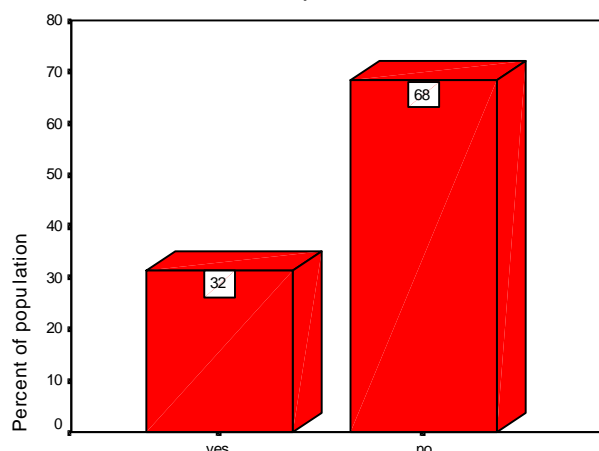
Bulimia



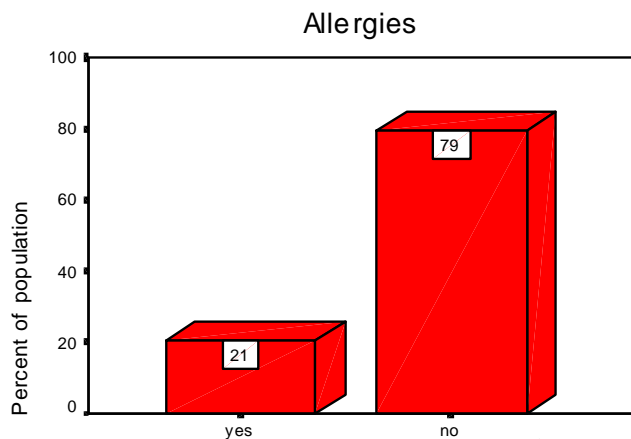
When were you diagnosed?



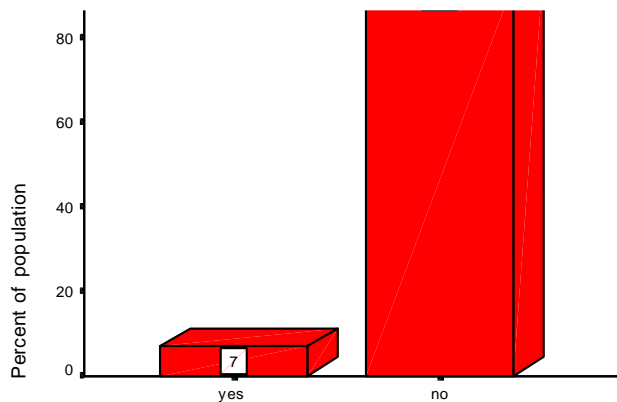
Treated in past 12 months?



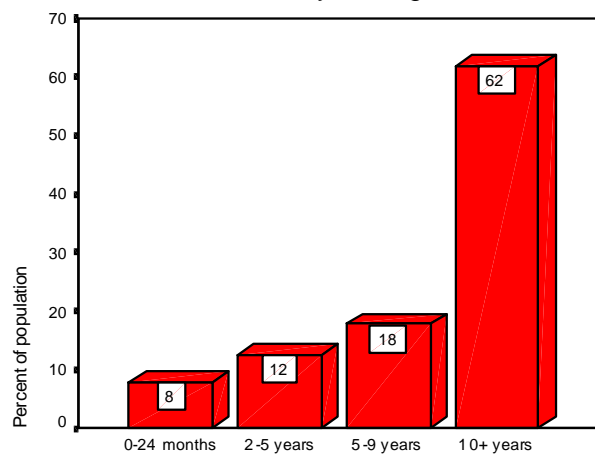
Allergies



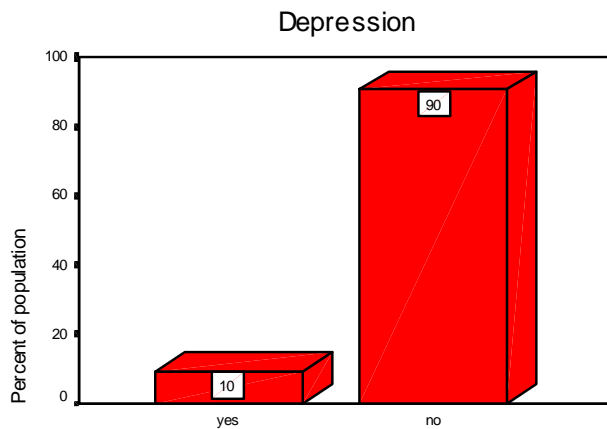
Some foods, pollen, mold, animal dander, dust mites, certain drugs, insect stings & different fibers (i.e. carpet) can all cause allergies.



When were you diagnosed?

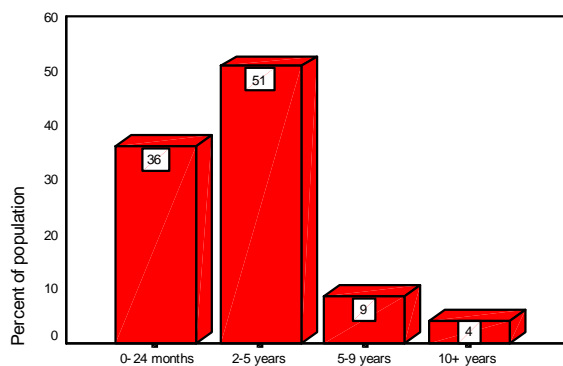


Depression



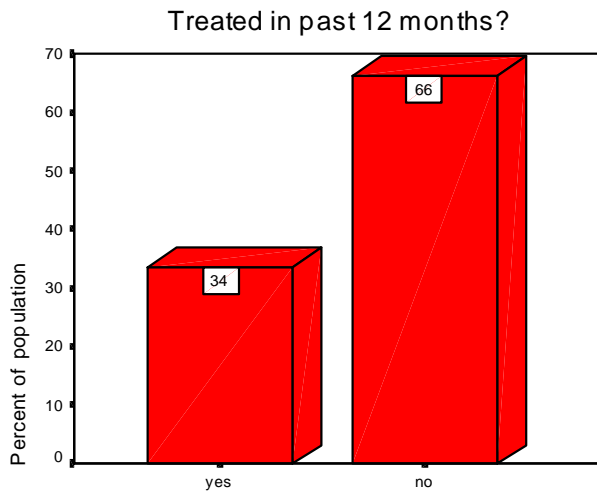
46% who indicated depression have moderate/high stress overload scores.

When were you diagnosed?

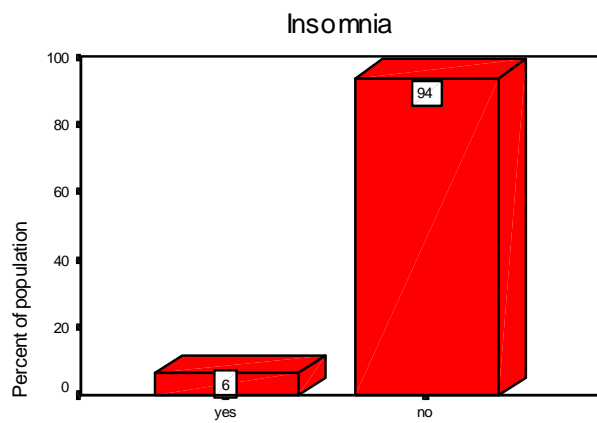


Depression is treated with drugs to balance mood chemical & counseling.

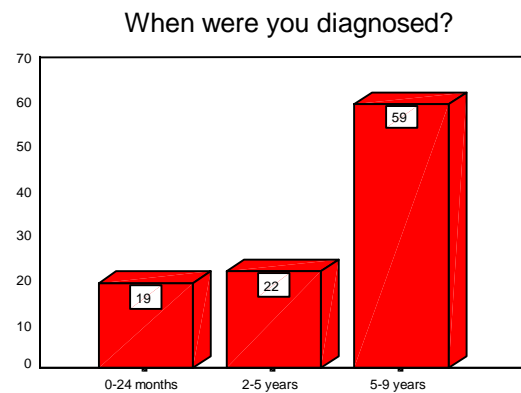
Some forms may be alleviated with good health habits (i.e. exercise).



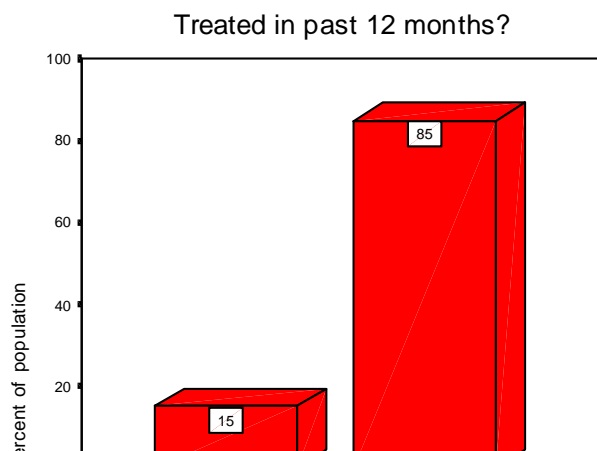
Insomnia



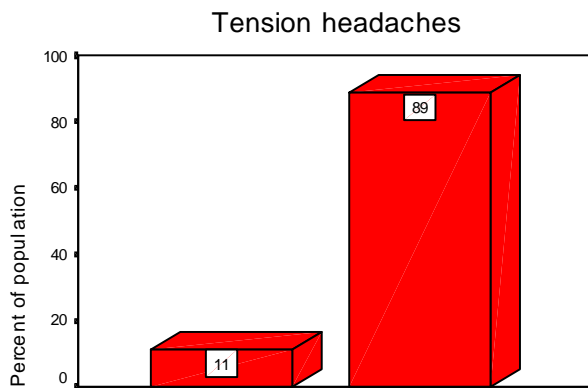
38% of those who indicated insomnia have moderate/high stress overload.
 77% of yes group drink 1+ cups of coffee/day compared to 45% no group.



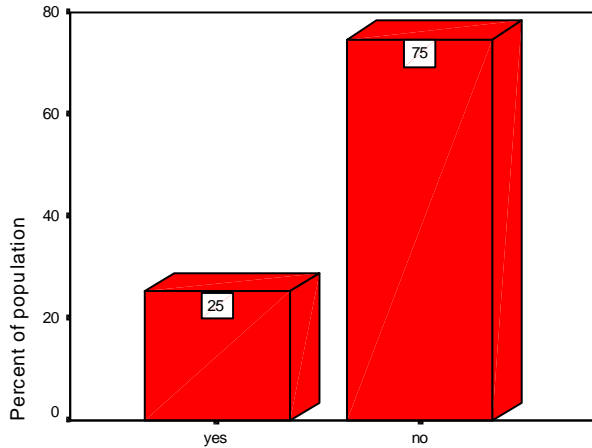
Stress, caffeine, alcohol and tobacco reduce the production of melatonin.
 The hormone melatonin helps insomnia and lessens jet lag.



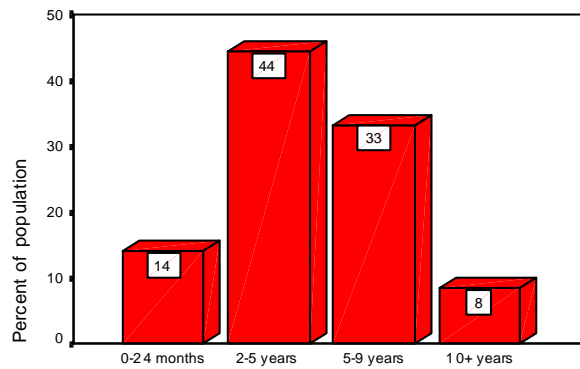
Tension Headaches



Treated in past 12 months?

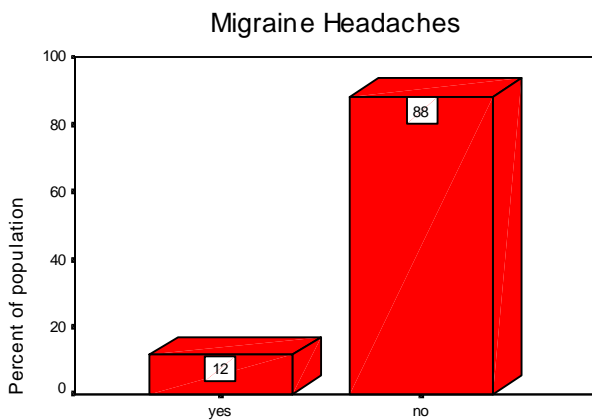


When were you diagnosed?



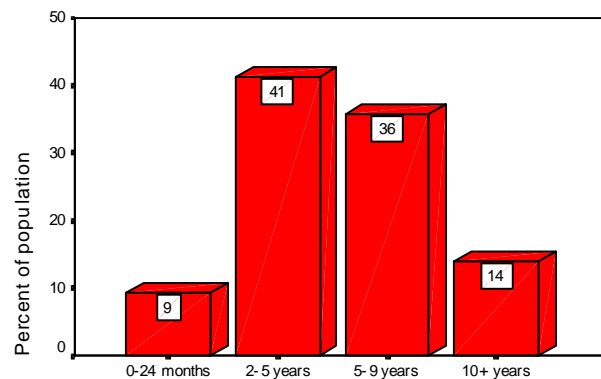
Tension headache triggers include stress (no.1 reason), eyestrain, poor posture, too much caffeine or grinding or clenching of teeth at night.

Migraine Headaches



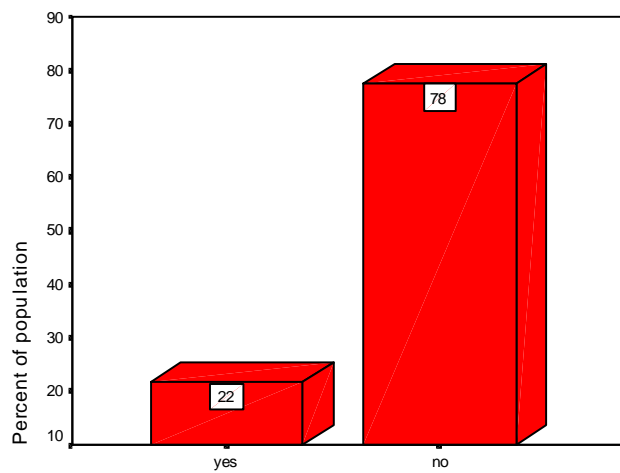
24% insomnia & 28% depression in yes group vs 11 & 10% for no group.

When were you diagnosed?

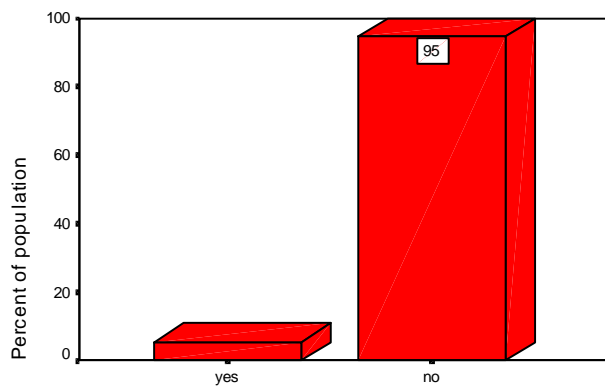


Among other factors migraines can be triggered by excessive caffeine,

Treated in past 12 months?

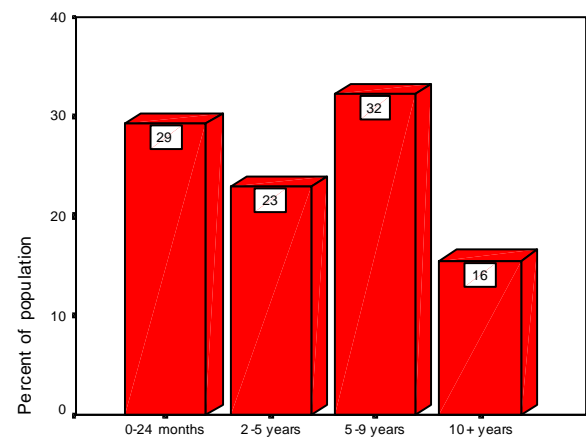


Chronic Back Problems

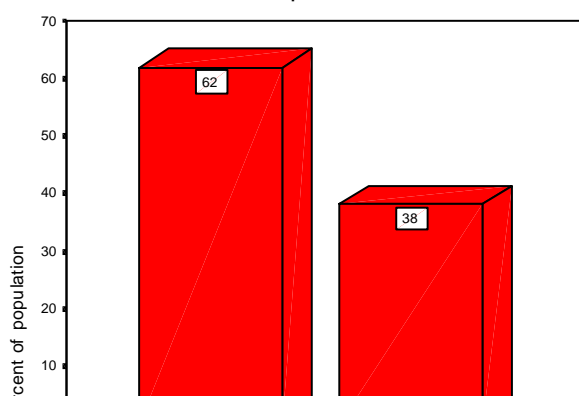


Risk Factors: Poor muscle tone, regular heavy lifting, overweight, over 50 years of age, heavy smoking and prolonged sitting and standing.

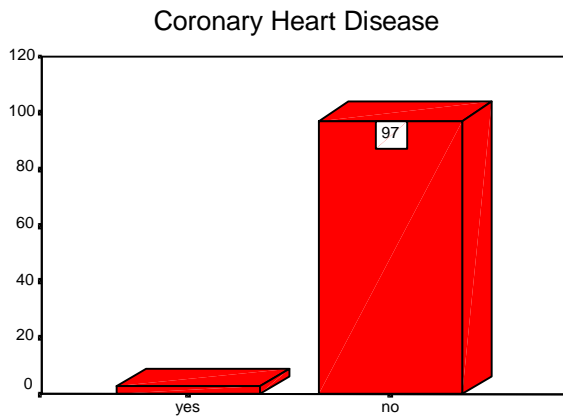
When were you diagnosed?



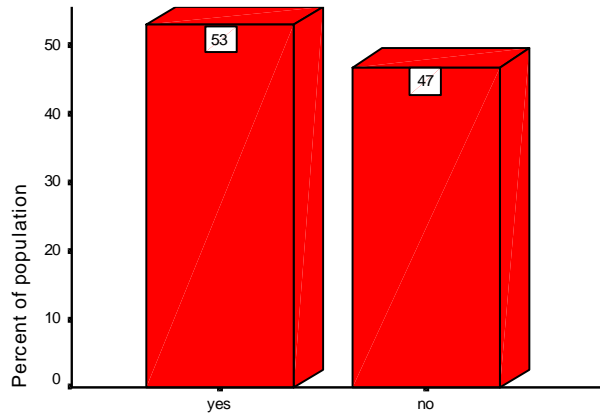
Treated in past 12 months?



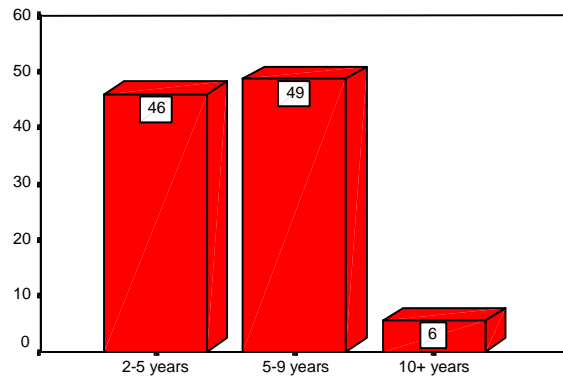
Coronary Heart Disease



Up to 90% of CHD can be preventable by controlling the following:
Smoking, high BP & CHOL, inactivity, diabetes, obesity & stress.

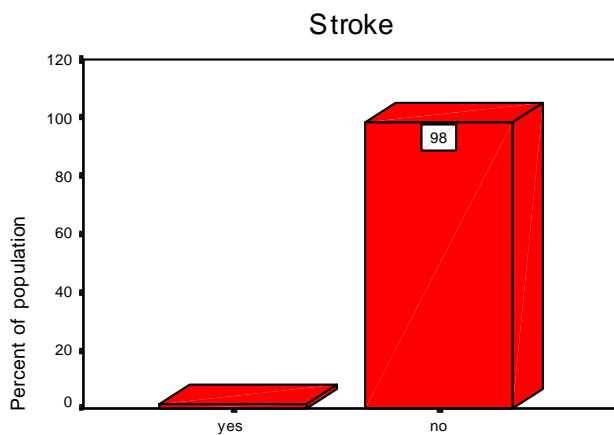


When were you diagnosed?



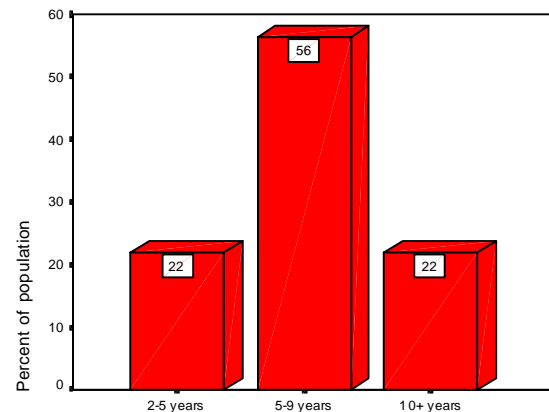
Signs of trouble may not appear until 70% of coronary arteries are blocked. Efforts towards risk factor reduction are most important.

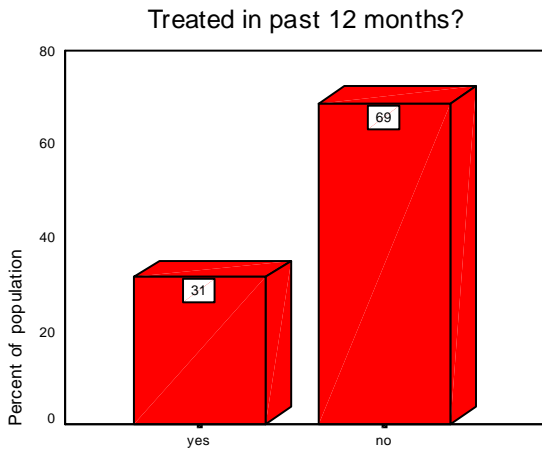
Stroke



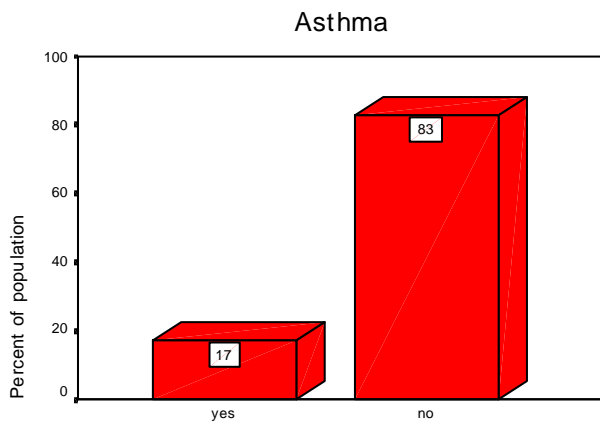
Risk factors: High BP (70% of strokes), cigarette smoking, inactivity,

When were you diagnosed?

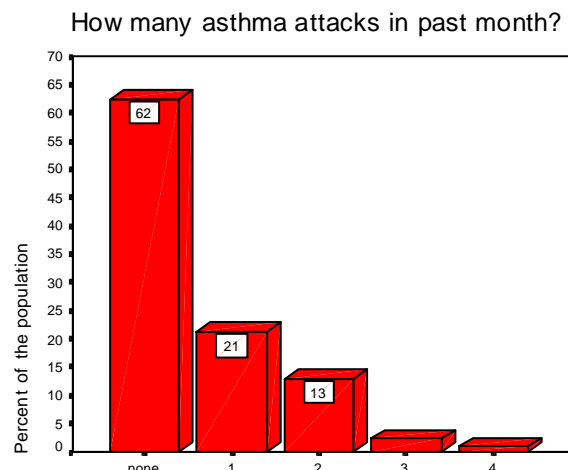
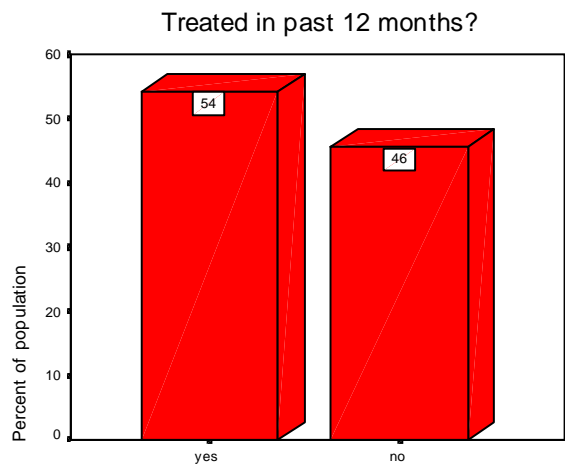
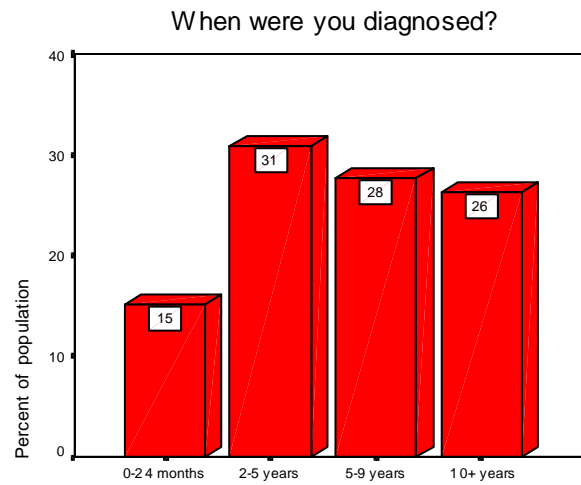




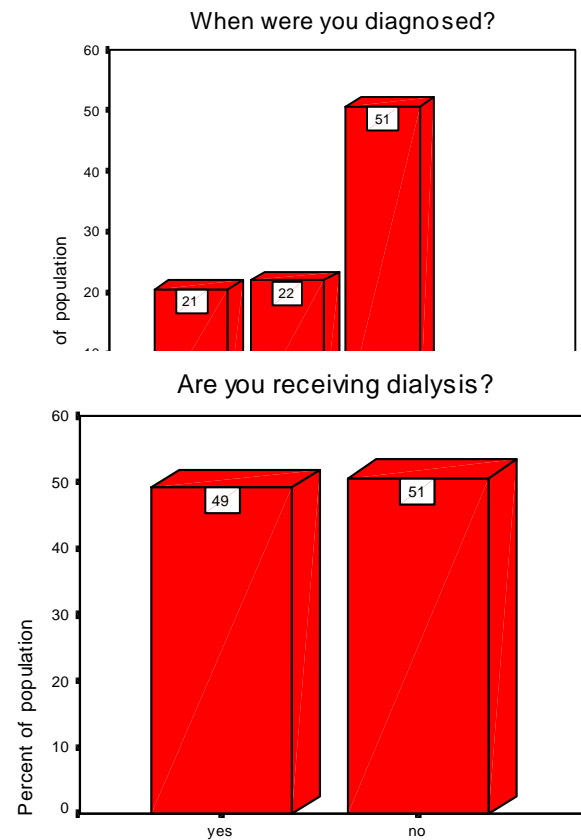
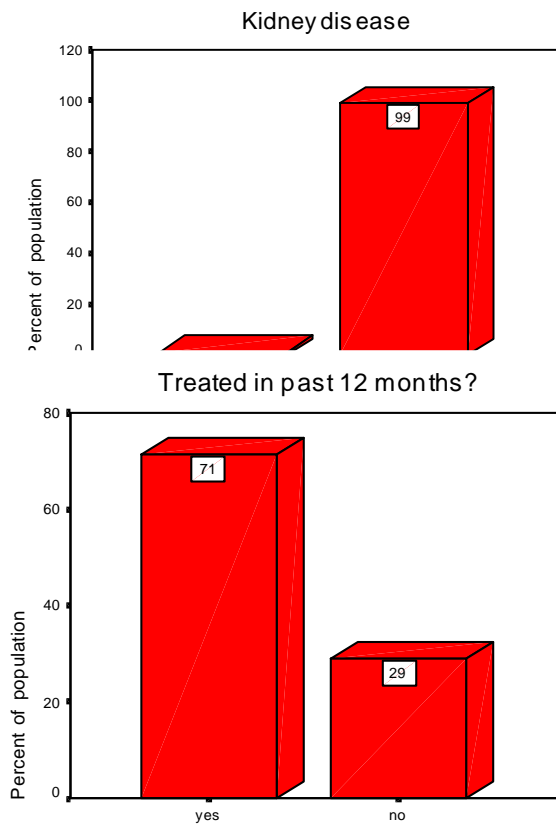
Asthma



With proper treatment most asthmatics can become free of symptoms.
Treat asthma by avoiding or controlling triggers & appropriate medicine.



Kidney Disease



Rating of Health Status

- 1/3 of the participants rated their health as fair to poor while the remaining 2/3 rated their health as very good to excellent
- Freedom from stress overload signals was identified in 70% of participants who rated their health as excellent, 64% of participants who rated their health as very good and 53% of participants who rated their health as fair/poor

Today's Health Compared to a Year Ago

- 27% saw themselves better in health compared to a year ago
- 63% reported unchanged and another 10% reported their health is worst today than a year ago
- The participants who viewed themselves about the same had the lowest percentage with moderate/high stress overload (22%) and the highest percentage (65%) with freedom from all stress signals
- The participants who saw themselves worst off had the highest percentage with moderate/high stress overload (40%) and the lowest percentage (43%) with freedom from moderate/high stress overload

Physical Health in the Past Month

- 73% of the participants reported no days of poor physical health
- 7% indicated 5 or more days of poor physical health while 6.7% indicated 3 to 4 days
- Five or more days of poor physical health (i.e. physical health or injury) was associated with the highest percentage with moderate/high stress overload (45%)
- The average number of days of poor physical health in Bermuda is 1.0
- The average number of days of poor physical health in the U.S is 3.1 with a range in U.S. states from 1.1 to 4.2.

Mental Health in the Past Month

- 71% reported no poor mental health days (stress, depression & emotional problems)
- 10% indicated 5 or more days of poor mental health while 6.9% indicated 3 to 4 days
- Three or more days of poor mental health was associated with the highest level of moderate/high stress overload (40.5 to 58.2%)
- The average number of days of poor mental health in Bermuda is 1.4.
- The average number of days of poor mental health in the U.S is 3.0 with a range in U.S. states from 0.8 to 4.5.

Days of Physical Limitation in the Past Month

- 80% did not miss days from work or other activities due to physical or mental health
- 4.6% indicated 5 or more days of physical limitation while 4.3% indicated 3 to 4 days
- Three or more days of physical limitation (i.e. unable to work or do other physical activity) due to poor physical or mental health was associated with the highest level of moderate/high stress overload (52.2 to 65.3%)
- The average number of days of limited activity in the U.S is 3.7 with a range in U.S. states from 2.8 to 6.8 while the average days of decreased activity in Bermuda are 0.86 days

Prescription Drugs

- 7% of the adult participants use 3 or more different prescription medications a day
- 23% use 1 to 2 different prescription medications a day
- Three or more different medications taken on a daily basis was associated with the highest level (40%) of moderate/high stress overload
- No intake of these medications was associated with 22% with moderate/high stress overload

Non-Prescription Drugs

- 21% of the participants reported daily use of non-prescription medication
- Two or more of different non-prescription medications taken on a daily basis was associated with the highest level (41.3%) of moderate/high stress overload
- No intake of these medications was associated with 23.2% with moderate/high stress overload

Number of Colds in the Past 12 Months

- 19% had no colds, 35% had 1 cold, 25% had 2 colds and 21% had 3 to 6 colds

Hours of Sleep Per Night

- 60% of the participants reported 6 to 7 hours of sleep, 8% reported 9 or more, 23% reported 6 hours, and the remaining 11% reported 5 hours or less of sleep per night
- Sleeping 9 or more hours (27%) per night or 5 or less hours (40%) per night was associated with the highest level of moderate/high stress overload
- About ½ of the participants who took 3 or more medications a day got 6 hours of sleep or less per night compared to 31% of those that did not use medication
- Ever having insomnia was associated with higher levels of stress overload, depression, headaches, body weight, work dissatisfaction, insufficient sleep, and TV viewing
- 65% of the exercising population got 7 to 8 hours of sleep per night compared with 46% of those that reported no exercise
- Significantly more of the non-exercise group slept 6 or less hour or 9 or more hours a night

Recommended Strategies

Health Status Today and One Year Ago

- Relate the finding that 1/3 reported a fair to poor health status and that this perception has been associated with increased health problems and medical claims

- Note that the perception of fair to poor health status was reflected in a high percentage with moderate/high stress overload
- Focus on the fact that improvements in lifestyle practices will result in positive changes in health status and improved coping skills
- Note that 27% reported health improvements over the last year while 10% indicated a decline in health status
- Participants who saw themselves worst of today when compared to a year ago had the highest level of moderate/high stress overload

Poor Physical Health

- Indicate that poor physical health for 5 or more days (7% of population) in the past month was associated with increased levels (45%) of moderate/high stress overload
- Since physical health impacts mental health, methods for coping with stress should be addressed in people who are physically sick
- Note that 27% of the respondents reported one or more days of poor physical health in the past month
- Compared to the U.S. (3.1), Bermuda has a lower average (1.0) for reported days of poor physical health however, Bermuda's average is based on a 3-month data collection period while the U.S. average is based on a one year period

Poor Mental Health

- Indicate that poor mental health for 3 to 4 days or 5 or more days was associated with increased levels of moderate/high stress overload (41 and 58% respectively)
- Note that 29% of the respondents indicated one or more days of poor mental health in the past 30 days
- Further, 10% of the respondents reported 5 or more days of poor mental health in the past month
- Methods for coping with mental stress should be addressed in individuals and groups who are finding it difficult to cope with daily stressors
- When compared to the U.S.(3.0), Bermuda has a lower average (1.4) for days of poor mental health however, Bermuda's average is based on a 3-month data collection period while the U.S. average is based on a 1 year period

Physical Limitations

- Inform that 3 to 4 days or 5 or more days of physical limitation (unable to work or do other physical activity) due to poor physical or mental health was associated with the highest levels of stress overload (52 and 65% respectively)
- Note that five or more days lost from work is a risk factor associated with higher medical claims and that 4.6 % of the adult population are represented as having 5 or more days of physical limitation

- Note that 20% of the population were unable to do physical work for 1 or more days in the past month
- Note that when compared to the U.S. adult population for days of physical limitation (3.7) Bermuda's average days (0.9) of physical limitation including work loss is far less than in U.S. however, Bermuda's average is based on a 3-month data collection period while the U.S. average is based on a year period

Prescription Drugs

- Note that taking 3 or more different prescription medications a day (7% of population) resulted in the highest level of moderate/high stress overload (40%)
- Inform that not using prescription drugs was associated with only 22% of participants with moderate/high stress overload scores
- This outcome is likely due too the illnesses that are being treated by medication and the side effects that often accompany drug therapy
- It is important to note that 30% reported taking 1 or more different prescription drug a day
- It is important to address the side effects associated with prescription medications and wherever possible integrate lifestyle modalities into the treatment plane
- Identify and utilize lifestyle modalities that can reduce or replace the need for certain medications or multiple prescriptions

Non-Prescription Drugs

- Inform that 21% reported daily use of non-prescription drugs
- Note that 2 or more different non-prescription medications a day was associated with 41% with moderate/high stress overload compared to 23% for participants that did not use non-prescription drugs
- This outcome is likely due too the illnesses that are being treated by over-the-counter medication and the side effects that accompany prolonged the use of some drugs
- Wherever possible, lifestyle means should be employed along with drug therapy to address health concerns

Number of Colds in the Past 12 Months

- Note that less colds were associated with high intakes of water, fruits, vegetables and whole grains, and low or no intake of soda, sweetened drinks and baked goods
- Note that less colds were also associated with regular vigorous exercise, experiencing no stress overload signals and having exercised in the past month (usually an indication of some form of regular activity)
- While we cannot prove cause and effect relationships based on these findings it is important to note that each of these practises are important to the health of the immune system

Hours of Sleep per Night

- Note that getting 5 hours (11% of population) or less of sleep per night is a reason for concern
- Adults sleeping more than 9 hours a night may have a health concern that should be addressed
- Sleeping an average of 7 to 8 hours (59% of population) per night may be best for stress control in a high percentage of the adult population
- Note that scientific studies suggest that sleeping from 7 to 8 per night is optimal for promoting longevity in most people
- Sleeping difficulty (insomnia as indicated by a doctor) was associated with higher levels of physical problems and/or mental stressors that were treated with medication
- Note that 50% of the participants who took 3 or more medications a day got 6 hours of sleep or less per night while only 31% of those that did not use medication got 6 or less hours of sleep per night
- Highlight the finding that doctor indicated insomnia was associated with higher levels of stress overload, depression, headaches, body weight, work dissatisfaction, insufficient sleep, and TV viewing
- Note that the sleep hormone melatonin is decreased by stress, caffeine, alcohol and tobacco
- Melatonin production can be increased by exposure to natural light, sleeping in complete darkness, eating foods high in melatonin (bananas, tomatoes, rice, corn, oats), tryptophan (black-eye peas, black walnuts, almonds, sesame seeds, gluten flour, roasted pumpkin seeds, tofu) and vitamin B6, (lima beans, lentils, English walnuts, banana, sesame & sunflower seeds, artichoke hearts, sweet bell peppers) and adequate calcium intake, food restriction and fasting
- Note that 65% of the exercising population get 7 to 8 hours of sleep per night compared with 46% of those that reported no exercise
- Significantly more of the non-exercise group slept 6 or less hour or 9 or more hours a night when compared to those who exercised
- Note that exercise is important in improving sleep quality

Preventive Counseling Services

Regular preventive exams are an essential part to a healthy lifestyle. They become even more important after the age of 40. In this survey we asked questions related to physical exams, eating and health, blood pressure, blood sugar measurements, exercise and health, blood cholesterol, family planning, prostate exams and women's health.

Physical Exam

- At least 80% of the participants have had a physical in the past 2 years
- 1% have never had a physical exam

Recommendations for a Preventive Exam

- Checks for weight (also BMI & waist hip ratio), cholesterol and blood pressure levels
- Women: Pap test, breast exam, mammogram (age 40 +)
- Men: PSA (age 50 +) & DRE (age 40 +)
- Test for blood in stool and /or bowel exam for people 50 and over
- Immunizations: tetanus every 10 years, pneumonia once by 65, annual flu shot, others as needed
- Hearing, vision and other exams and test as recommended by you doctor
- Regular dental checkups

- Counseling as needed for nutrition, problem drinking, stress management, injury prevention, physical activity, smoking cessation

Blood Pressure Check & Reading

- At least 89% of the participants have had a BP check in the last 1 – 2 years
- 95% of the participants indicated that their last BP reading was normal

Blood Sugar Test & Reading

- 64% of the participants have had their blood sugar taken in the past 2 years
- 96% of the participants indicated that their last blood sugar reading was normal

Blood Cholesterol Test & Reading

- Approximately 70% of the participants have had their blood cholesterol taken in the past 5 years
- 83% of the participants indicated that their last blood cholesterol reading was normal while just over 2% reported a high cholesterol level
- 15% don't know or are not sure of their cholesterol level

Prostate Exam

- Approximately 40% of the men 40 and older have never had a prostate exam

Professional Education on Eating and Health

- 42% of the population indicated that they have not receive education on eating habits that could lower their risk of health problems
- Of those who received education 32% received advice in the past 12 months

Professional Education on Exercise and Health

- 34% of the participants indicated that they have not receive education on eating habits that could lower their risk of health problems
- Of those who received education 40% got advice in the past 12 months

Recommended Strategies

Physical Exam

- Note that more than 80% fulfilled the recommendation of a physical every 1 –3 years

- Further, 8% or more might benefit from getting a physical exam in the near future

Recommendations for a Preventive Exam

- Checks for weight (include BMI & waist hip ratio), cholesterol and blood pressure levels
- Women: Pap test, breast exam, mammogram (age 40 +)
- Men: PSA (age 50 +) & DRE (age 40 +)
- Test for blood in stool and /or bowel exam for people 50 and over
- Immunizations: tetanus every 10 years, pneumonia once by 65, annual flu shot, others as needed
- Hearing, vision and other exams and test as recommended by you doctor
- Regular dental checkups
- Counseling as needed for nutrition, problem drinking, stress management, injury prevention, physical activity, smoking cessation

Blood Pressure Check & Reading

- Highlight that 89% have had a BP check in the last 1 – 2 years and that the remaining 11% might benefit by getting their BP checked in the near future
 - Everyone should know their BP level and take appropriate steps to lower it, if getting close to high (130/85 +) or high (140/90 +)
 - Focus first on lifestyle change such as diet, weight control, sodium restriction and reduction in alcohol intake if BP is high normal or stage 1 hypertension
 - While 95% indicate that their last BP reading was normal and 2% indicate a high level the actual percentage with high blood pressure is probably higher considering the 11% who have not had their blood pressure checked in the last 2 years

Blood Sugar Test & Reading

- Highlight that 64% have had their blood sugar taken in the past 2 years and that 27% of adults might benefit by getting their blood sugar tested in the near future
 - A fasting blood sugar of 110 or higher generally indicates a problem handling glucose and a fasting level of 126 or higher indicates diabetes (2 readings)
 - While 96% indicated that their last blood sugar reading was normal the 1% that reported high blood sugar may be less than the actual percentage of adults with high blood sugar considering the 27% who have not had a blood sugar test in the past 2 years

- Persons over 40 or at high risk for diabetes due to family history or over 30, overweight and inactive should get their blood sugar tested

Blood Cholesterol Test & Reading

- Highlight that since 70% have had their blood cholesterol taken in the past 5 years and that up to 30% of adults might benefit from getting their blood cholesterol checked soon
 - Every adult should know their level and take appropriate steps to lower it if high
 - Health risks are increased at a total cholesterol level of 200+ and an HDL cholesterol level of 40 or lower
 - Do not wait until your total cholesterol level is 140+ before you make lifestyle changes
 - With just over 2% who reported a high cholesterol level, 15% who don't know or are not sure and 30% without a cholesterol check in the past 5 years, it is likely that more than 2% of adults have a high cholesterol level
 - A high percentage of the population (15%) might benefit by becoming aware of their own blood cholesterol level

Prostate Exam

- Note that since 40% of the men 40 and older have never had a prostate exam there is a need for ongoing education, support and motivation to get men to their doctor for this test
- Doctors should make this test a part of their preventive exams for men 40 and older

Education on Eating and Health by Health Professionals (i.e. MD, RD, Nurse)

- Highlight the finding that 42% of the population indicated they never received education on eating habits that could lower their risk of health problems
 - Of those who received education 32% received advice in the past 12 months (1/3 of this group were obese)
 - High numbers of those that received nutrition advice more than 3 years ago are obese today (29%), hence the need for ongoing support and follow-up
 - While only 9% of those receiving education on eating habits were obese it is important that patients receive advice regarding diet and disease prevention regardless of their weight status
 - Information handouts and/or advice on diet and risk factor reduction should be a part of a preventive exam
 - If not equipped to address this educational need, medical doctors should refer their patients to an appropriate resource or health agency
- Note that patients are more likely to attempt lifestyle changes if the advice is coming from their doctor
 - It may be a good idea to make lifestyle modalities a prescription rather than just an added suggestion

Education on Exercise and Health (i.e. MD, RD, Nurse)

- Highlight the finding that 34% indicated that they never received education on exercise habits that could lower their risk of health problems
 - Of those who received education 40% got advice in the past 12 months (29% of this group were obese)
 - Higher numbers that received exercise advice more than 3 years ago are obese today (41%), hence the need for ongoing support and follow-up
 - While only 10% of those receiving education on exercise were obese it is important that patients receive advice regarding the many benefits of a regular exercise programme regardless of their weight status
 - Information handouts and/or advice on exercise and risk factor reduction should be a part of a preventive health exam
 - If not equipped to address this educational need, refer to an appropriate resource or health agency
- Note that patients are more likely to attempt lifestyle changes if the advice is coming from their doctor
 - It may be a good idea to make lifestyle modalities a prescription rather than just an added suggestion

Women's Health

This section on women's health addresses preventive test for cancers that affect women and women who are currently pregnant. The cancer tests include the Mammogram, the Clinical Breast Exam and the Pap Smear.

Women Who Ever Had a Mammogram

- 90% of women 40 and older have had a mammogram while 10% have not
- 53% of all women 18 and older have had a mammogram

Length of Time Since Last Mammogram

- 77% of women 40 or older have had a mammogram in the past year
- 23% of women had a mammogram over a year ago

Reason for Last Mammogram

- Approximately 85% of women 40 or older received a mammogram as a part of a routine check-up

- 12% were for non-cancerous breast problems while the remaining 2% were related to breast cancer

Women Who Ever Had a Clinical Breast Exam

- 92% of women 40 and older have had a breast exam while 10% have not
- 87% of all women 18 and older have had a breast examination

Length of Time Since Last Breast Exam

- 83% of women 40 or older have had a breast exam in the past year
- 17% of women have had a breast exam over a year ago
- 74% of all women 18 and older have had a breast exam in the past year

Reason for Last Breast Exam

- Approximately 93% of women 40 or older received a breast exam as a part of a routine check-up
- 6% of women were for non-cancerous breast problems while the remaining 1% were related to breast cancer

Women Who Ever Had a Pap Smear

- 95% of women 18 and older have had a Pap smear while 5% have not or are not sure

Length of Times Since Last Pap Smear

- 73% of women 18 or older have had a Pap smear in the past year
- 27% of women had a Pap Smear over a year ago

Reason for Last Pap Smear

- Approximately 95% of women 18 or older received a Pap Smear as a part of a routine check-up
- 6% received a Pap Smear for non-cancerous breast problems

Pregnancy Status

- 7% of women 18 or older are pregnant or are not sure

Of the 41 women who indicated they were pregnant or not sure, a number of them practice habits or have a stress level that can increase health risk to themselves and their developing fetus:

- 7 smoke cigarettes every day and 1 smokes some days

- 10 abuse alcohol and another 7 are suspected as being abusers of alcohol
- 17 have moderate to high stress overload
- 20 are not doing any form of exercise (inactivity is appropriate if health risk are identified by a doctor)
- 8 eat fast foods 3 – 7 times/week and 19 eat fast foods 1 – 2 times/week

Recommended Strategies

Ever had a Mammogram, Time of Last Test & for What Reason

- Highlight the good news that 90% of women 40 and older have taken this preventive test and the need to encourage the other 10% of women 40 and older
 - 53% of all women 18 and older have had a mammogram
 - Most women have had a mammogram in the past year (77% of women 40 or older have had a mammogram in the past year and 23% over a year ago)
 - Most women are taking this secondary preventive measures towards preventing breast cancer
 - 85% of women 40 or older received a mammogram as a part of a routine check-up, 12% were for non-cancerous breast problems and the remaining 2% were related to breast cancer
 - All women 40 and older should get this test as recommended

Ever had a Clinical Breast Exam, Time of Last Test & for What Reason

- Highlight the good new that 92% of women 40 and older have had a breast exam and the need to encourage the other 8% who have not had a clinical breast exam
 - 87% of all women 18 and older have had a breast examination
 - Most women 40 or older have had a breast exam in the past year (83% in the past year and 17% of women over a year ago)
 - 74% of all women 18 and older have had a breast exam in the past year
 - 93% of women 40 or older received a breast exam as a part of a routine check-up, 6% of women were for non-cancerous breast problems and the remaining 1% was related to breast cancer
 - All women 40 or older should get a clinical breast exam every 1 to 2 years or as recommended by their doctor for a family history of breast cancer

Ever Had a Pap Smear, Time of Last Test & for What Reason

- Highlight the good new that 95% of women have had a Pap Smear and the need to encourage the other 5% if indicated (all sexually active women)
 - Most women 18 or older have had a Pap Smear in the past year (73% in the past year and 27% of women over a year ago)

- 95% of women 18 or older received a Pap Smear as a part of a routine check-up while 5% of women received this tests for non-cancerous problems
- A Pap Smear is helpful in identifying Cervical Cancer in women
- All women should get this test as recommended

Pregnancy Status

To minimize health risk during pregnancy practice good health practices before the baby is conceived, see your health care provider as soon as you suspect you may be pregnant, take a vitamin supplement, do not smoke, drink alcohol, or use drugs and take good care of yourself during pregnancy.

Of the 41 women (7% of women 18 or older) who indicated they were pregnant or not sure, a number of them practice habits that can increase health risk for themselves and their developing fetus. These areas and other health concerns should be addressed before and after conception:

- 7 smoke cigarettes every day and 1 smokes some days
- 10 abuse alcohol and another 7 are suspected as being abusers of alcohol
- 17 have moderate to high stress overload scores
- 20 are not doing any form of exercise (inactivity is appropriate if health risk are identified by a doctor)
- 8 eat fast foods 3 –7 times/week and 19 eat fast foods 1 – 2 times/week

HIV, AIDS and Sexual Practices

Sexually transmitted diseases are largely preventable. High-risk behaviours contribute to the major burden of these diseases. In 1996 86% of all new cases of AIDS in the U.S. came from Homosexuals and IV drug use, 11% came from heterosexual activity, 1% each from new-borns and transfusions and <1% from hemophiliacs. In this survey we asked questions to address AIDS education, HIV testing, sexual practices, condom use and behavioural change as it relates to sexual practices.

School and AIDS Education

- 22% of the participants believe education should begin by age 7, another 20% between ages 8 and 9, 42% for ages 10 and older and the remaining 16% don't know or are not sure

Professionals, Patients and Sex Education

- 55% of adults have not received any sexually related education from their doctor while the remaining 45% have received education related to sex and family planning

Have You Ever Been Tested For HIV?

- 52% of the population have been tested for HIV

What was The Main Reason for Your Last HIV Test?

- 41% other/unstated, 27% pregnancy, 12% to find out if they had HIV and 12% related to hospital or surgery

Place of Testing and Follow-up Counseling

- The four most common places for HIV test are doctor's office 39%, hospital 30%, insurance company office 8% and overseas 7%
- 81% reported no professional follow-up about the results of the test

Condom use During the Last Sexual Encounter

- Of the participants (74%) that answered this question on condom use, 18% used a condom
- A condom was used by 56% to prevent pregnancy & disease, 34% to prevent pregnancy and 10% to prevent disease

Sexual Practices, STD's, IV Drugs and Changes in Behaviour

- Just over 5% of the participants indicated that one or more of the following situations applied to them: Tried IV drugs, treated for STDs or VD, had anal sex without a condom or tested positive for HIV (All were based on the past 12 months besides testing positive to HIV)
- 16% did not answer the question on high risk behaviours & STDs
- Regarding changing sexual behaviours in the past 12 months, 21% indicated they changed as result of increased knowledge regarding HIV
- 29% refused to answer the question on changing sexual behaviours

Changes Related to Sexual Partners and Abstinence in the Past 12 Months

- 29% decreased their number of sex partners or became abstinent
- 40% did not answer the question on number of sex partners or abstinence
- 45% that responded yes to abstinence are still abstinent
- 71% did not answer the question on abstinence

Changes Related to Same Sex Partner and Condom Use in the Past 12 Months

- 78% of the participants indicated they now have a one sex partner while 22% report no change over the past 12 months

- 38% of the population did not answer the question related to sex partners and condom use
- Within the past 12 months 23% indicated they always use a condom for protection while 77% do not always use a condom for protection
- 39% of the population did not answer the question on condom use for protection

Recommended Strategies

School and AIDS Education for Children

- Note that adults are in agreement for AIDS education in school
- Note that 42% who agree to an age level for AIDS education in school indicate 9 or younger, 41% indicate 10 and older, 16% don't know or are not sure and 1% would not agree to their child receiving AIDS education in school
- The three largest age groups were 10 to 11 (27%), 8 to 9 (20%) & 12 to 16 (15%)

Professionals, Patients and Sex Education

- Note that while ½ (55%) of adults have not received any sexually related education from their doctor, it is good practice to include some form of educational information on sexual health (family planning, STDs, AIDS or condom use) as a part of a preventive health exam

Have You Ever Been Tested for HIV & for What Reason?

- Note that 52% of the population have been tested for HIV
- 41% were tested for unstated reasons, 27% for pregnancy, 12% to find out if they had HIV and 12% related to the hospital or surgery

Place of Testing and Follow-up Counseling

- Note that the four most common places for HIV test are the doctor's office (39%), the hospital (30%), insurance company offices (8%) and overseas (7%)
- Note that 81% reported no professional follow-up about the results of the test
- The apparent lack of professional follow-up regarding the results of HIV test may indicate that the test came back negative or that some attention is needed in this area

Condom use During the Last Sexual Encounter

- Note that 18% used a condom (74% of the population answered this question)
- A condom was used by 56% to prevent pregnancy & disease, 34% to prevent pregnancy and 10% to prevent disease
- The high percentage (78%) that had sex without a condom would be a reason for concern if high risk behaviours were involved

- Encourage others to practice safe sex practices like condom use

Sexual Practices, STDs, IV Drugs and Behavioural Change

- Note that 5% indicated one or more of the following high risk situations: Tried IV drugs, treated for STDs or had anal sex without a condom in the past 12 months, or tested positive for HIV
- The 5% of adults in these high risk areas is likely underreported
- Highlight the good news regarding the change in sexual practices (21%) as a result of increased knowledge regarding HIV in the past 12 months
- Encourage others to continue educating, because education works

Did you make any of the following four changes in the past 12 months?

Changes Related to Sexual Partners and Abstinence

- Highlight the finding that those who answered these two questions, the decrease in the number of sex partner (29%) and continued abstinence (45%) in past 12 months is encouraging news
- Encourage others to heed these preventive practices

Changes Related to same Sex Partner and Condom Use

- Note that the high percentage (22%) who reported no change in the number of sexual partners (over the past 12 months) probably includes both single and multiple partner relationships
- When reporting on the high percentage (78%) that indicated a change to a one-sex partner relationship over the past 12 months, keep in mind that the high number of individuals (approximately ½ of the total population sample) in this group suggest that a number of individuals who have always had a one-sex partner misunderstood the question and answered “yes” when they should have said “no”
- Keep in mind that 38% of the population did not answer the question related to multiple sex partners
- Highlight the encouraging news that 23% indicated a change to always using a condom for protection in the past 12 months
- Keep in mind that 39% of the population did not answer the question related to condom use for protection in the past 12 months
- Note that the 77% that did not make a change to always using a condom in the past 12 months include individuals who have followed this practice for longer than one year
- Use a number of different avenues for getting across the safe sex message - schools, TV, the new paper, printed handouts, health clinics, special campaigns etc.