7 Alcohol Consumption

Introduction

Excessive alcohol consumption is associated with an increased risk of hypertension, stroke and certain cancers. It may also lead to liver cirrhosis, inflammation of the pancreas and damage to the brain and heart.

Definition

Alcohol consumption was classified according to the frequency of alcohol intake. Table 7.1

Table 7.1: Classification of alcohol consumption

Classification	Frequency of alcohol consumption
Regular drinker	> 4 days a week
Frequent drinker	1-4 days a week
Occasional drinker	≤ 3 days a month

Binge drinking was defined as consumption of five or more alcoholic drinks[1] on a single occasion at least once during the past month.

Method Used

An interviewer-administered questionnaire was used. The questionnaire was based on the Behavioural Risk Factor Surveillance System Questionnaire from the Centres for Disease Control and Prevention *(CDC, 1998)*.

[1] One alcoholic drink refers to 1 can/small bottle (~285 mls) of beer or 1 glass (~120 mls) of wine or 1 measure (~30 mls) of spirits.

Alcohol Consumption

The survey found that among Singapore residents aged between 18 and 69 years old, 3.2% consumed alcohol regularly, 7.0% frequently and 40.6% occasionally and 49.2% were non-drinkers. Table 7.2

Table 7.2: Alcohol consumption (%) of Singapore residents aged 18-69 years, by gender, 2004

Alcohol Consumption	Males	Females	Total
Non-drinker	39.4	59.1	49.2
Occasional drinker	46.9	34.3	40.6
Frequent drinker	9.4	4.6	7.0
Regular drinker	4.3	2.0	3.2

Prevalence of Regular Alcohol Consumption

Among Singapore residents aged between 18 and 69 years, 4.3% of males and 2.0% of females consumed alcohol regularly. A higher proportion of Chinese (3.6%) and Indians (2.7%) consumed alcohol regularly compared to Malays (0.6%). Regular alcohol intake was most common in males in the 60-69 age group (7.3%) while in females, regular alcohol intake was most common in the 40-49 age group (2.6%). Graph 7.1; Table 7.3

Graph 7.1: Crude prevalence (%) of regular alcohol consumption among Singapore residents aged 18-69 years, by gender and ethnic group, 2004

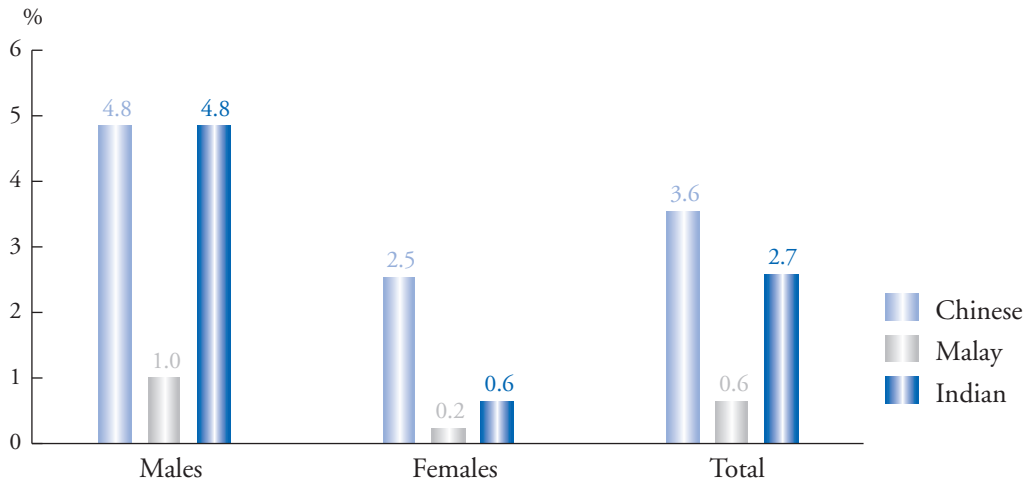

Table 7.3: Age-specific prevalence (%) of regular alcohol consumption, by gender, 2004

Age (years)	Males	Females	Total
18-29	2.9	2.0	2.5
30-39	2.6	1.8	2.2
40-49	4.3	2.6	3.5
50-59	7.0	2.3	4.7
60-69	7.3	0.7	3.9
18-69	**4.3**	**2.0**	**3.2**

Trends in Regular Alcohol Consumption

The prevalence of regular alcohol consumption rose from 2.6% in 1998 to 3.2% in 2004. There were no significant changes in the age-standardised prevalence of regular alcohol consumption in males and the three ethnic groups between 1998 and 2004. However, there was a significant increase in the age-standardised prevalence of regular alcohol consumption in females between 1998 and 2004. Table 7.4

Table 7.4: Prevalence (%) of regular alcohol consumption, by gender and ethnic group, 1992, 1998 and 2004

Gender / Ethnic group	Crude prevalence			Age-standardised prevalence (95% Confidence Interval)			Difference in age-standardised prevalence	
	1992	1998	2004	1992	1998	2004	['98-'92]	['04-'98]
Total	**2.7**	**2.6**	**3.2**	**2.9** *(2.3, 3.5)*	**2.6** *(2.2, 3.1)*	**3.1** *(2.5, 3.7)*	**-0.3**	**0.5**
Gender								
Males	4.6	4.3	4.3	5.1 *(3.9, 6.2)*	4.4 *(3.5, 5.3)*	4.2 *(3.2, 5.2)*	-0.7	-0.2
Females	0.7	0.8	2.0	0.8 *(0.4, 1.3)*	0.9 *(0.5, 1.3)*	2.0 *(1.4, 2.7)*	0.1	1.1*
Ethnic group								
Chinese	3.2	2.9	3.6	3.5 *(2.8, 4.3)*	3.0 *(2.4, 3.6)*	3.5 *(2.8, 4.3)*	-0.5	0.5
Malay	0.3	0.5	0.6	0.3 *(0.0, 0.7)*	0.5 *(0.0, 1.0)*	0.6 *(0.1, 1.1)*	0.2	0.1
Indian	1.6	2.9	2.7	1.2 *(0.3, 2.2)*	2.7 *(1.4, 4.0)*	2.7 *(1.4, 4.0)*	1.5	0.0

* $0.001 < p < 0.01$

Prevalence of Binge Drinking

The prevalence of binge drinking was 9.6% in 2004. It was more common among males (15.6%) than females (3.7%). Binge drinking was more common among Chinese (10.6%) and Indians (9.8%) as compared to Malays (2.9%). Both males and females had the largest proportions of binge drinkers in the 18-29 age group. Graph 7.2; Table 7.5

Graph 7.2: Crude prevalence (%) of binge drinking among Singapore residents aged 18-69 years, by gender and ethnic group, 2004

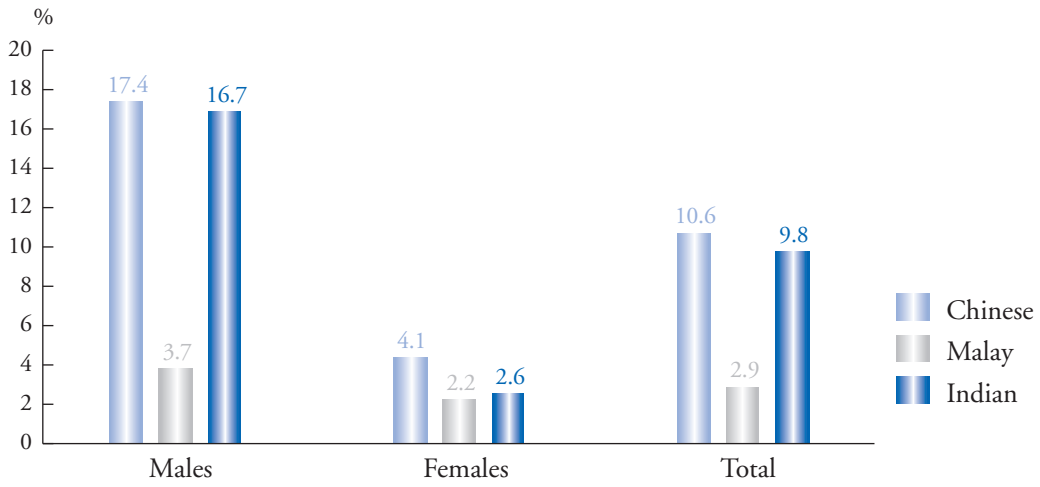

Table 7.5: Age-specific prevalence (%) of binge drinking, by gender, 2004

Age (years)	Males	Females	Total
18-29	18.9	9.4	14.1
30-39	17.5	3.0	10.1
40-49	15.4	2.4	9.0
50-59	12.7	0.8	6.8
60-69	8.3	0.6	4.4
18-69	**15.6**	**3.7**	**9.6**

Preferred Alcoholic Drink

Among Singapore residents who consumed alcohol, the most preferred alcoholic drink was beer (45.7%), followed by wine (34.8%), spirits (13.2%) and stout (1.3%). About 4.9% of the drinkers did not have any specific preference for alcoholic drinks.

8 Physical Activity

Introduction

Physical activity is important for maintaining good health. It has been shown to reduce the risk of premature death in general and in particular the risk of coronary heart disease, hypertension, and non-insulin-dependent diabetes mellitus. In addition physical activity improves mental health, prevents unhealthy weight gain and is important for the health of muscles, bones and joints *(US Department of Health and Human Services 1996; Wellington National Health Committee 1998)*. Participation in physical activity can also improve the quality of life among children and adults *(Hassmen et al. 2000; Laforge et al. 1999)*.

Definition

The classification for physical activity was adapted from the American College of Sports Medicine's classification *(American College of Sports Medicine, 1998)*. Table 8.1

Table 8.1: Classification of physical activity participation

Classification	Frequency of physical activity
Regular exercise	Participation in any form of sports or exercise for at least 20 minutes per occasion, for 3 or more days a week
Occasional exercise	Participation in any form of sports or exercise for at least 20 minutes per occasion, for less than 3 days a week
No exercise (physically inactive)	No participation in any form of sports or exercise that lasted for at least 20 minutes per occasion

Method Used

An interviewer-administered questionnaire was used. Respondents were asked about the type, frequency, duration and intensity of physical activity that they did during their leisure time. Sedentary respondents were asked what their main reason for not doing any leisure physical activity was.

Physical Activity Participation Status

The survey found that among Singapore residents aged 18 to 69 years, nearly one-quarter (24.9%) exercised regularly, 27.0% exercised occasionally, and close to half (48.1%) did not exercise at all. Table 8.2

Table 8.2: Physical activity participation status (%) of Singapore residents aged 18-69 years, by gender, 2004

Physical Activity Participation	Males	Females	Total
Regular exercise	28.8	21.0	24.9
Occasional exercise	29.8	24.2	27.0
No exercise (physically inactive)	41.4	54.8	48.1

Prevalence of Regular Exercise

A higher proportion of males (28.8%) than females (21.0%) exercised regularly. Among the ethnic groups, Indians had the highest participation in regular exercise (28.8%), followed by Malays (28.0%) and Chinese (24.0%). Regular exercise was most prevalent among the young adults in the 18-29 age group, followed by a decline among adults in the 30-49 age group before increasing again in the 50-69 age group. This pattern was seen in both males and females. Graph 8.1; Table 8.3

Graph 8.1: Crude prevalence (%) of regular exercise among Singapore residents aged 18-69 years, by gender and ethnic group, 2004

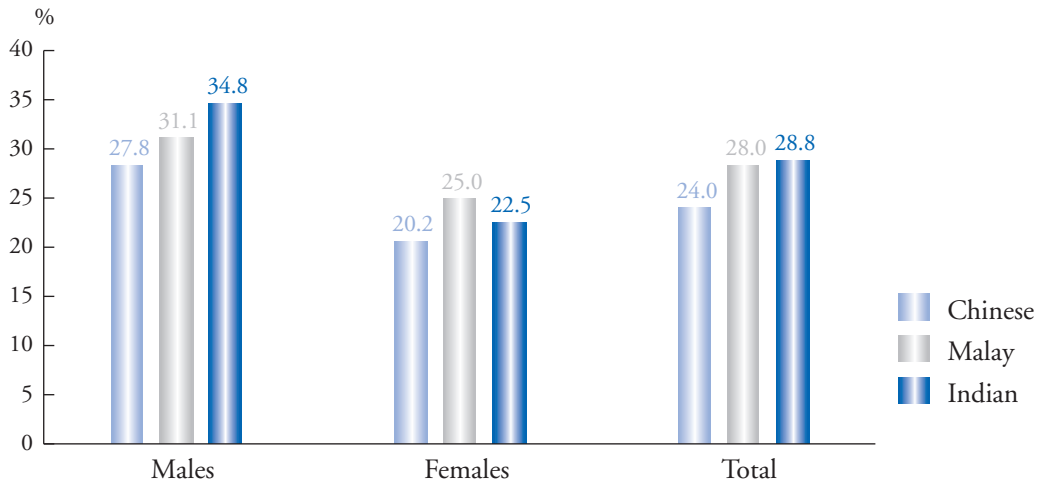

Table 8.3: Age-specific prevalence (%) of regular exercise, by gender, 2004

Age (years)	Males	Females	Total
18-29	43.9	24.0	33.9
30-39	25.3	17.7	21.4
40-49	19.4	19.8	19.6
50-59	26.9	21.2	24.1
60-69	31.1	25.0	28.0
18-69	**28.8**	**21.0**	**24.9**

Trends in Regular Exercise

The prevalence of regular exercise among Singapore residents aged 18 to 69 years increased significantly from 16.8% in 1998 to 24.9% in 2004. Significant increases in age-standardised prevalence were found in both males and females, and in Chinese and Malays. Table 8.4

Table 8.4: Prevalence (%) of regular exercise, by gender and ethnic group, 1992, 1998 and 2004

Gender / Ethnic group	Crude prevalence			Age-standardised prevalence (95% Confidence Interval)			Difference in age-standardised prevalence	
	1992	1998	2004	1992	1998	2004	['98-'92]	['04-'98]
Total	**13.6**	**16.8**	**24.9**	**13.5** *(12.3, 14.6)*	**17.0** *(15.9, 18.1)*	**25.0** *(23.6, 26.4)*	**3.5****	**8.0****
Gender								
Males	18.6	20.1	28.8	18.5 *(16.6, 20.4)*	20.3 *(18.5, 22.0)*	29.3 *(27.2, 31.4)*	1.8	9.0**
Females	8.4	13.6	21.0	8.4 *(7.1, 9.8)*	13.8 *(12.5, 15.2)*	20.8 *(19.0, 22.6)*	5.4**	7.0**
Ethnic group								
Chinese	12.9	15.9	24.0	13.1 *(11.7, 14.4)*	16.1 *(14.8, 17.4)*	24.2 *(22.6, 25.8)*	3.0*	8.1**
Malay	14.5	18.7	28.0	13.3 *(10.7, 15.9)*	18.5 *(15.9, 21.2)*	28.0 *(24.9, 31.1)*	5.2*	9.5**
Indian	19.1	24.0	28.8	17.9 *(14.9, 21.0)*	24.1 *(20.8, 27.4)*	28.5 *(24.9, 32.0)*	6.2*	4.4

* $0.001 < p < 0.01$
** $p < 0.001$

Prevalence of Physical Inactivity

Among Singapore residents aged 18 to 69 years, 48.1% did not participate in any leisure physical activity. A higher proportion of females (54.8%) than males (41.4%) were physically inactive. The prevalence of physical inactivity was similar among the three ethnic groups, with the highest prevalence in Indians (49.2%), and slightly lower prevalence in Chinese (48.1%) and Malays (47.6%). Physical inactivity increased with age, with the prevalence rising from 29.7% among adults aged between 18 and 29 years to 64.2% among adults aged between 60 and 69 years. Table 8.5

Table 8.5: Age-specific prevalence (%) of physical inactivity, by gender, 2004

Age (years)	Males	Females	Total
18-29	20.2	39.1	29.7
30-39	37.3	54.8	46.2
40-49	50.8	59.2	55.0
50-59	50.6	62.9	56.7
60-69	61.7	66.7	64.2
18-69	**41.4**	**54.8**	**48.1**

Trends in Physical Inactivity

The prevalence of physical inactivity among Singaporeans aged 18 to 69 years decreased from 54.7% in 1998 to 48.1% in 2004. Significant decreases in age-standardised prevalence were noted in both genders and Chinese. Table 8.6

Table 8.6: Prevalence (%) of physical inactivity, by gender and ethnic group, 1992, 1998 and 2004

Gender / Ethnic group	Crude prevalence			Age-standardised prevalence (95% Confidence Interval)			Difference in age-standardised prevalence	
	1992	1998	2004	1992	1998	2004	['98-'92]	['04-'98]
Total	64.4	54.7	48.1	66.5 *(64.9, 68.1)*	54.7 *(53.3, 56.1)*	47.4 *(45.8, 49.1)*	-11.8*	-7.3*
Gender								
Males	53.8	45.9	41.4	56.1 *(53.6, 58.5)*	46.1 *(43.9, 48.3)*	40.7 *(38.4, 43.0)*	-10.0*	-5.4*
Females	75.3	63.5	54.8	76.9 *(74.9, 78.9)*	63.3 *(61.4, 65.3)*	54.2 *(52.0, 56.4)*	-13.6*	-9.1*
Ethnic group								
Chinese	64.4	55.2	48.1	66.2 *(64.3, 68.1)*	55.3 *(53.6, 57.0)*	47.1 *(45.2, 49.0)*	-10.9*	-8.2*
Malay	64.5	53.0	47.6	68.9 *(65.5, 72.3)*	52.6 *(49.3, 55.9)*	48.2 *(44.8, 51.6)*	-16.3*	-4.4
Indian	64.9	52.2	49.2	65.8 *(62.2, 69.5)*	52.4 *(48.7, 56.2)*	49.9 *(46.1, 53.8)*	-13.4*	-2.5

* $p < 0.001$

Reasons for Not Doing Any Leisure Physical Activity

Singapore residents aged 18 to 69 years old who did not participate in any sports or exercise during their leisure time cited the following three main reasons for their physical inactivity:

1. "No time due to work / family commitment" (47.7%);
2. "Too tired" (20.7%); and
3. "Too lazy" (16.2%).

Popular Leisure-time Physical Activities

Running or jogging (47.6%) was the most popular leisure time physical activity among Singapore residents aged 18 to 69 years who exercised regularly. Other popular physical activities were brisk walking (42.1%), swimming (28.9%), stretching and muscle toning exercises (e.g. sit-up, push-up etc) (25.1%), gym workout with equipment such as treadmill or power rider (20.1%) and gym workout with weights (19.5%).

The top 3 activities (running/jogging, swimming and brisk walking) were similar regardless of gender. Other popular activities among males included gym workout with weights (29.7%), stretching and muscle toning exercises (e.g. sit-up, push-up etc) (25.2%) and cycling (20.9%). Other popular activities among females included stretching and muscle toning exercises (e.g. sit-up, push-up etc) (24.9%), gym workout with equipment such as treadmill or power rider (23.8%) and dancing (all forms) (12.9%).

9 Breast Cancer Screening

Introduction

Breast cancer is the most common cancer among Singapore women today. For the five-year period from 1998 to 2002, the incidence of breast cancer was 67.3 per 100,000 females per year *(A Seow et al, 2004)* and an average of 273 women died from the disease each year.

Breast cancer has been linked to a number of risk factors including age, personal or family history of breast cancer, smoking, high-fat diets and obesity. Early detection increases the chances of curative treatment. As early breast cancer usually does not present with any symptoms, screening for early disease is therefore very important. Mammography for women over 50 years old is widely accepted as an appropriate screening tool.

Method Used

An interviewer-administered questionnaire was used. Female respondents were asked about their knowledge and practice of mammography, and the reasons for not going for mammography (where applicable).

Knowledge and Practice of Mammography

83.2% of women aged 40 to 69 years were aware of mammography. A higher proportion of Chinese women (85.1%) were aware of mammography compared with Indian women (77.2%) and Malay women (74.4%). A slightly higher proportion of ever-married women (83.5%) than never-married women (80.6%) demonstrated awareness of mammography.

Higher proportions of better educated women tended to be aware of mammography compared to their less educated counterparts; rising from 70.0% among those with no formal education to 97.1% among those with tertiary education.

Overall, half (50.9%) of Singaporean women aged 40 to 69 years reported that they had gone for mammography at least once. A higher proportion of Chinese women (53.7%) and Indian women (46.2%) had undergone mammography compared with their Malay counterparts (34.8%). Ever-married women (51.6%) were more likely to have undergone mammography than never-married women (45.0%). Table 9.1

In the 50-64 target age group for organised mammography programmes, 39.2% of women in

the age group had undergone mammography within the last 2 years, in accordance with the recommended frequency of mammography in this age group.

Table 9.1: Knowledge and practice of mammography (%), by socio-demographic characteristics, 2004

Characteristics	Knowledge of mammography among women aged 40-69 years	Ever undergone mammography among women aged 40-69 years
Total	**83.2**	**50.9**
Age (years)		
40-49	86.7	47.5
50-59	83.2	56.2
60-69	73.7	50.5
Ethnic group		
Chinese	85.1	53.7
Malay	74.4	34.8
Indian	77.2	46.2
Marital status		
Ever married	83.5	51.6
Never married	80.6	45.0
Educational qualification		
No formal education	70.0	40.5
PSLE	76.2	46.6
GCE 'O' / 'N' level	89.7	52.0
GCE 'A' level / Diploma	91.1	59.8
Degree / Professional qualification	97.1	74.8

Trends in Knowledge and Practice of Mammography

The proportion of women aged 40 to 69 years who knew about mammography as a means of screening for breast cancer increased greatly between 1998 and 2004 (48.4% vs 83.2%). The proportion of women who had gone for mammography at least once was 50.9% in 2004, almost double that of 27.0% in 1998.

Reasons for Not Doing a Mammography

Of those women aged 40 to 69 years who had never undergone mammography, the commonly cited reasons were:

1. "Not necessary as I am healthy" (34.5%);
2. "Painful test" (14.9%);
3. "Inconvenient (e.g. need to take leave, clinic/hospital too far away etc)" (11.6%);
4. "Never heard about mammography" (10.5%); and
5. "Afraid of knowing results" (7.4%).

10 Cervical Cancer Screening

Introduction

Cervical cancer is the second most common cancer of the female reproductive system, and is the fifth most common cancer among women in Singapore. In the five-year period from 1998 to 2002, the incidence of cervical cancer was 12.6 per 100,000 women per year *(A Seow et al 2004)* and an average of 85 women died from the disease each year.

Major risk factors for cervical cancer include having sexual intercourse at an early age, having multiple sexual partners and infection with human papilloma virus or HPV (the cause of genital warts). If cervical cancer is detected before it becomes invasive, it is almost certainly curable. Screening for cervical cancer with the Papanicolaou (Pap) Smear test is inexpensive and widely accepted as being effective and beneficial.

Method Used

An interviewer-administered questionnaire was used. Female respondents were asked about their knowledge and practice of Pap Smear tests, and the reasons for not performing a Pap Smear test (where applicable).

Awareness and Practice of Pap Smear Tests

The survey found that 80.8% of Singaporean women aged 25 to 69 years were aware of Pap Smear tests. A higher proportion of Chinese women (81.8%) were aware of Pap Smear tests compared with Malay women (77.9%) and Indian women (74.7%). Ever-married women (83.5%) were more likely than never-married women (68.8%) to be aware of the Pap Smear tests. Women with secondary or higher education (84.0% – 87.4%) were also more likely to know what a Pap Smear was compared with those with less education (63.7% - 75.2%).

Among women aged 25 to 69 years, 70.1% had undergone Pap Smear tests. Chinese women (71.1%) were more likely to have undergone Pap Smear tests compared to Malay women (67.2%) and Indian women (65.4%). Women aged 35 to 49 years were the most likely to have undergone Pap Smear tests (79.2%).

The proportion of women who had undergone Pap Smear tests was more than three times higher among ever-married women (80.3%), compared with never-married women (25.3%). Women at

both ends of the educational spectrum, with no formal education or with a degree, had the lowest proportion of having undergone a Pap Smear test at least once. Table 10.1

Overall, 52.0% of women aged 25 to 69 years had undergone the test within the past three years, in accordance with the recommended frequency.

Table 10.1: Awareness and practice of Pap Smear tests among women aged 25 to 69 years, by socio-demographic characteristics (%), 2004

	Awareness of Pap Smear tests	Ever had Pap Smear tests
Total	**80.8**	**70.1**
Age (years)		
25-34	78.6	54.7
35-49	85.6	79.2
50-69	75.6	70.6
Ethnic group		
Chinese	81.8	71.1
Malay	77.9	67.2
Indian	74.7	65.4
Marital status		
Ever married	83.5	80.3
Never married	68.8	25.3
Educational qualification		
No formal education	63.7	62.9
PSLE	75.2	73.4
GCE 'O' / 'N' level	87.4	78.2
GCE 'A' level / Diploma	85.4	72.1
Degree / Professional qualification	84.0	61.1

Trends in the Practice of Pap Smear Tests

The proportion of women aged 25 to 69 years who had undergone Pap Smear tests at least once was 70.1% in 2004 compared with 64.2% in 1998.

Reasons for Not Doing Pap Smear Tests

Women who had never had a Pap Smear test cited the following main reasons for not doing the test:

1. "Not necessary as I am healthy" (28.6%);
2. "Never heard about Pap Smear test" (22.4%);
3. "Not sexually active" (13.2%);
4. "Too young" (8.4%); and
5. "Inconvenient (e.g. need to take leave, clinic/hospital too far away etc)" (6.0%).

11 Colorectal Cancer Screening

Introduction

Colorectal cancer is the second most common cancer among Singaporeans today; the most common being breast cancer among women and lung cancer among men. For the five year period from 1998 to 2002, the incidence of colon cancer was 40.0 per 100,000 men per year and 34.6 per 100,000 women per year *(A Seow et al, 2004)*. The incidence rises significantly after 50 years of age and is highest among Chinese males.

Factors that have been associated with higher risk of this cancer include specific hereditary conditions, older age, inflammatory bowel diseases, regular high saturated fat and low fiber diet, excessive alcohol intake, and sedentary lifestyle. However, more than 75% of people who develop colon or rectal cancer have no known predisposing factors to the disease.

Faecal Occult Blood Test (FOBT), sigmoidoscopy, and colonoscopy are able to detect the cancer at an early, curable stage. The Ministry of Health's Clinical Practice Guidelines on Health Screening (2003) recommend annual screening for colorectal cancer using FOBT for people aged 50 and older who are at average risk for colorectal cancer. For a person who is positive for FOBT, sigmoidoscopy and colonoscopy are the confirmatory diagnostic investigations of choice.

Method Used

An interviewer-administered questionnaire was used.

Practice of FOBT

17.3% of Singaporeans aged 50 to 69 years reported having had a FOBT at least once. A higher proportion of males (20.2%) had undergone FOBT compared with females (14.4%). Chinese (19.1%) were more likely to have undergone the procedure compared to Malays (8.9%) and Indians (8.1%).

The majority (62.2%) of those who reported having undergone FOBT at least once had done so within the last five years. Of those who had ever had a FOBT, 22.0% reported having undergone the test within the last one year and 42.1% within the last two years.

Practice of Colonoscopy or Sigmoidoscopy

11.2% of Singaporeans aged 50 to 69 years reported having undergone colonoscopy or sigmoidoscopy at least once. A higher proportion of males (14.7%) had the test compared with females (7.7%). Chinese (12.6%) were more likely than Indians (6.7%) and Malays (3.0%) to have undergone the procedures.

Among those who had undergone a colonoscopy or sigmoidoscopy at least once, the majority (85.0%) reported having had the procedure within the last ten years, 68.9% within the last five years, 45.0% in the last two years and 28.5% within the last year.