

## **Epidemiological Study Of Risky Behaviours And Their Relation With Mental Ill Health Among Secondary School Students In Cairo**

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### **Abstract**

A cross-sectional design was carried out on 827 students from general and technical secondary schools in Cairo. The aim of this study was to determine the prevalence of risky behaviours among the studied students, to assess their relation with sociodemographic factors and psychological problems and to explore student's attitude toward these behaviours. The data were collected by a standardized interviewing form. Different psychological symptoms were assessed using Middle Sex Hospital Questionnaire. The study showed, 54.1% of the students were having unhealthy diet and tobacco smoking behaviours. Also, all the risky behaviours, except absence of physical exercise practice and suicide attempt, were more common among boys. The most important sociodemographic risk factors were; positive family history of risky behaviours, one parent family and the student's work beside studying (OR=7.11, 4.07 and 3.37, respectively). The most important reasons for unhealthy diet, carrying weapon and engagement in casual sex were imitation (55.2%), to feel grown up (47.1%) and peer pressure (39.1%), respectively. While, the most common psychological problem was hysteria (15.1%) and the most common neurotic trait was sadness (41.9%). The most important psychological problems risk factors were obsession and hysteria (OR=5.53 and 4.59, respectively). While, the most important neurotic traits risk were irritability and sadness (OR=9.53 and 8.05, respectively). No awareness to the reported risk was present among 96.4% of the students having the risky behaviours (OR=6.41).

### **Introduction**

Adolescence is regarded as the time transition from childhood to adulthood. It is the period of intensified preparation for the coming role of adulthood and characterized by the dramatic physical changes of puberty and the complex emotional and social adjustments (Hamilton, 1998). Also, it is a period, which is associated with a prolonged and confused struggle to attain an independent adult status (El-Nouman *et al.*, 1999). Egypt has today the largest cohort of adolescents in its history, more than 13 million boys and girls between age 10 to 19 according to the 1996 census (Ibrahim *et al.* 2000).

Recent advances in behavioural sciences have demonstrated, positive changes in life style contribute extensively to the betterment of physical and psychological well being as well as to the

prevention of most risk factors which cause disability and diseases. So, investments which create a conducive environment for healthier behaviours are crucial to bring about the desired improvements in the health of nations (WHO, 2001).

Risk factors are experiences in adolescent's life that increase the chances of being victimized or developing one or more of behavioural problems. These problems include, unhealthy diet, inadequate physical activity, alcohol and other drug abuse, suicide, criminal behaviour(s) directed towards other persons or properties. The more risk factors are present, the greater the chances of behaviour problems to occur (Center For Research on Youth At Risk, 1997 and Kann *et al.*, 2000). Risky behaviour is often regarded as normal in adolescents. Testing one's own capacities

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and experimenting with limits are seen as necessary factors in the process of establishing one's own identity (France, 2000). The health of adolescents is critically linked to the health related behaviours they chose to adopt. A limited number of behaviours contribute markedly to today's major killers. Among adolescents, the leading causes of death are closely linked to these behaviours (Kann *et al.*, 2000). Because the great impact of injury on the health and well being of adolescents, the healthy people 2010 objectives encourage schools to provide a good comprehensive health education to prevent unintentional injury, violence and suicide (US Department of Health and Human Sources, 2000). Coordinated school health programs in conjunction with community efforts can prevent injuries among students and help them to establish lifelong safety skills (Kolbe, 1993 and Allensworth *et al.*, 1997).

The annual prevalence of psychological problems in adolescents is not well documented. However, it is about 20%, as the same in adults. In US, epidemiological studies revealed, 13.0% of adolescents aged up to 17 had anxiety (Report of The Surgeon General, 2001). Also, in Egypt, feeling of anxiety and fear represented the most common psychological problems among adolescents (Ibrahim *et al.*, 2000).

The aim of the present study is to determine the prevalence of certain risky behaviours, to assess their relation with sociodemographic factors and psychological problems and to explore students' attitudes toward these behaviours among the secondary school students in Cairo.

### Subjects And Methods

A cross-sectional, analytical, school-based study was carried out among secondary school students in Cairo, Egypt.

Three educational directorates were randomly selected; El-Waily, El-Zitoun and Helwan. Public secondary schools (general, technical and commercial) were enlisted. Two general secondary schools (one for girls and one for boys), two technical secondary schools (one for girls and one for boys) and two commercial

secondary schools (for girls) were randomly selected (as there is no male commercial school). From each selected school, two classes were randomly chosen from the first and the second grades only (we did not include the 3<sup>rd</sup> grade as they will not be convenient to the study relative to the other grades, as appeared from our pre-test work). While, from commercial secondary schools for girls, one class only was randomly selected from the first and the second grades. We preferred this selection, in case of commercial schools, in order to avoid increasing the number of the girls. So, four classes from each school were selected, except commercial schools; only two classes were selected. This selection gives 20 classes, which give 827 students, the total number of the studied sample. Out of them, there were 447 students with various types of risky behaviours. The rest of the students' (380) had no risky behaviours, and they represented the control group. The mean age of the students was  $17.2 \pm 1.3$  years.

An official permission from the Ministry of Education as well as an informed consent from the students to participate in the study was taken. The following tools were used:

First; a standardized interviewing form, adopting from the Center of Disease Control (1999) with some modifications, was used to collect the data (risky behaviours) from the participating students. The risky behaviours were unhealthy diet, absence of physical exercise, tobacco smoking, drugs and/or alcohol use, physical fight(s), carrying weapon, casual sex and suicide ideation and/or attempt. Unhealthy diet was determined by questions concerning with the diet quality (potato chips, soda,...etc) and quantity. Physical activity practice of the students was considered when the student participated in activities that cause sweating and hard breathing for  $\geq 20$  minutes (Center of Disease Control, 1998). Tobacco smoking (cigarette and/or shisha) and drugs and/or alcohol use were categorized as irregulars and regulars. Irregulars were those students who have admitted to have ever tried or experimented

tobacco (even one or two puffs) or drugs and/or alcohol (even one or two times). While, regulars were those students who have used tobacco and drugs and/or alcohol one or more days per week. Casual sex means any form of sexual contact with the other sex. The questionnaire was pre-tested and modified accordingly.

Second; a close ended precoded questionnaire included the sociodemographic characteristics, questions to screen for neurotic traits (irritability, insecurity feelings and sadness), questions to assess the hidden risk among students without the risky behaviours which include the following: questions assessing their awareness to the studied risky behaviours, questions to define the attitudes of the students without the risky behaviours towards their colleagues have these behaviours and questions to identify their reasons for why they did not practice these risky behaviours. On the other hand, this questionnaire includes questions to determine the reasons of practice these behaviours in case of the students have them. Similarly, this questionnaire was pre-tested.

Third; Middle Sex Hospital Questionnaire was applied to all students. The questionnaire was divided into six subscales covering the following psychiatric symptoms, which are anxiety, phobia, obsession, somatization, depression and hysteria. The response to each item is scored 2, 1 or 0. A score of  $\geq 9$  in any subscale indicate, the subject is suffering from psychiatric symptoms (Crown and Scrip, 1966; Crown *et al.*, 1970 and Gawad *et al.*, 1970).

Odds ratio (OR) with 95% confidence interval (CI), chi-square ( $\chi^2$ ) and Mantel-Haenszel  $\chi^2$  were used as tests of significance. The significance level for  $\chi^2$  and Mantel-Haenszel  $\chi^2$  were accepted if the P-value  $\leq 0.05$ .

## Results And Discussion

In this study, (table 1) 54.1% of the students practised two or more of the risky behaviours; unhealthy diet and tobacco smoking. Regarding taking unhealthy diet, Reeves (2001) found, 77.2% of Michigan

adult residents didn't eat the recommended amount of fruits and vegetables. The difference in prevalence may be related to the difference in age as well as cultural differences between the two samples. While, Refaat (2002) reported prevalence 55.7% of her group of students had junk food. This result agreed with ours. With regard the risky behaviour of no physical activity practice (47.3%). Adams *et al.* (1992) supported this finding and stated, although adolescents are more active than adults are, many adolescents do not engage in physical activity. In this regard, our study agrees with this observation. Refaat (2002) reported similar findings, 46.6% not practised physical activities. With regard tobacco smoking, 54.1% of our students were smokers, 25.2% regular smokers and 28.9% irregular smokers. New-Comb and Bentler (1988) stated, adolescents initiate tobacco smoking perceive themselves as taking acceptable risk as they smoke. El-Moghazi *et al.* (1991) and Khafagy (1996) reported, 14.6% prevalence of tobacco smoking among secondary school students in El-Sharkia and El-Mansoura, respectively. Khafagy (1996) noticed, 53.6% of his group were irregular smokers. Also, El-Nouman *et al.* (1999) reported, 13.0% of the first year university students were smokers and 46.8% have tried smoking. Dous (2001) reported 33.8% prevalence of smoking among students aged 13-15 years. The difference with our results may be related to the difference in the ages of the studied samples as the prevalence of smoking increases with increasing in age according to El-Moghazi *et al.* (1991) and Zhu (1992), however, regular smoking was close to our results, 20.0%. Regarding drugs and/or alcohol use, these substances were used by 11.7% of the students (7.4% and 4.3% were irregularly and regularly drugs and/or alcohol users). Our results were supported by Soueif *et al.* (1987, 1988 and 1990). They found, the prevalence of cannabis use was 5.05%, 8.79% and 11.44% for male secondary school and university students and industrial workers, respectively. El-Nouman *et al.* (1999) and Refaat (2001) reported prevalence of 9.3% and 5.2%, respectively for drug abuse.

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Also, Okasha *et al.* (1995) found, 42.0% of failed students were drug abusers. With regard violence behaviours namely, engagement in physical fight(s) and carrying weapon. Pratt and Greydanus (2000) stated, violence is a form of aggressive behaviour that has a debilitating effect on the optimal growth and development of youth. A marked rise in fear and frustration have been documented due to youth violence epidemic (Prothrow-Stith, 1995). So, regarding engagement in physical fight(s), 41.6% of students were engaged in physical fight(s), 27.6% one time, 7.5% 2-5 times and 6.5% six or more times. These results were higher than that of Kann *et al.* (2000) and Refaat (2001), as they reported 25.0% and 26.3% of their students were engaged in physical fights, respectively. These differences in prevalence might be attributed to the small age of our students with high attitude for violence. Regarding carrying weapon (table 1), 8.1% and 8.6% of students carried a weapon sometimes and mostly, respectively. These results were lower than results of Kann *et al.* (2000) and higher than results of Refaat (2001) as they reported 17.0% and 5.5% of their students carried weapon, respectively. Again, these differences in prevalence might be attributed to difference in culture (Kann *et al.* 2000' study) or to sample characteristics (Refaat 2001' study). Fahmy and El-Safy (2003) reported, 15.3% of secondary school students in Zagazig had aggressive behaviour. With regard engagement in casual sex, 2.8% of students engaged in it. Gottlieb *et al.* (2002); Xu *et al.* (2002) and Dimitry-Abraham *et al.* (2003) supported our results, but they reported higher prevalence. Dimitry-Abraham *et al.* (2003) showed, 898 Mexican students aged 11 to 24 years, all of them initiated sexual activity. This high figure could be explained, much more sexual freedom in western countries. With regard suicide ideation and/or attempt, 5.6% of the students had suicide ideation and/or attempt. Garnefski and Diekstra (1995) stated, a great attention has paid to suicidal behaviour in youngsters of secondary schools in the form of one or more non-fatal suicide attempts. Moreover, Murphy (2000)

stated, suicide is the third leading cause of death among youth aged 15-24 years. Center of Disease Control (1999) showed, 3% of high school students in the US, reported suicide attempts that required medical treatment. Also, El-Nouman *et al.* (1999) found, 3.7% of the first year university students attempted suicide. While, Kann *et al.* (2000) and Refaat (2001) reported, 9.0% and 9.3% of American and Egyptian students, respectively had tried suicide. Our result came midway between these figures, 3% & 3.7% and 9% & 9.3%.

With regard, distribution of risky behaviours among the studied students according to gender (table 2), we found, unhealthy diet consumption behaviour was more prevalent among boys than girls (69.5% vs. 42.8%, respectively) with a statistically significant difference. In this aspect, Refaat (2002) reported, 73.8% and 26.2% of males and females of her students, respectively practised unhealthy lifestyle, including unhealthy diet. Regarding the risky behaviour of no physical activity practice, 44.3% and 49.5% of the students were boys and girls, respectively, with no statistically significant difference. Refaat (2002) agreed with our results. Regarding tobacco smoking, 97.4% of the boys were smokers compared with 22.5% of the girls, with a statistically significant difference. El-Moghazi *et al.* (1991); Khafagy (1996); Bawazeer *et al.* (1999) and Hughes (2000) supported our results, they reported high prevalence of smoking among males compared with females. While, Felimban (1993) reported, 10.3% of female university students in Riyadh were smokers. On the other hand, Johnston *et al.* (2002) found, 4.9% of secondary school students were smokers. While, Sadek *et al.* (2002) found, 2.5% of female secondary school students were smokers. Regarding drugs and/or alcohol use, 25.6% of the boys and 1.7% of the girls were drug and/or alcohol users, with a statistically significant difference. These results were supported by the findings of Center of Disease Control (1998). Also, Sadek *et al.* (2002) reported, 3.9%, 15.9% and 0.7% of the students were drug, alcohol and cannabinoids users,

respectively. The violence related behaviours; namely, engagement in physical fight(s) was found among 71.3% of the boys and 20.0% of the girls, with a statistically significant difference. Also, carrying weapon behaviour was found among 35.6% of the boys and 2.9% of the girls, with a statistically significant difference. In the US, nearly 60% of adolescents reported at least one episode of dating violence (Avery-Leaf *et al.*, 1997). Our results were supported by Center of Disease Control (1998) which reported, the males who engaged in physical fight and carried weapon represented 67.2% and 44.8%, respectively, compared with 50.4% and 18.4% of the females, respectively. Refaat (2001) supported our results. Also, Fahmy and El-Safy (2003) reported, 14.9% and 12.8% of their males and females students had aggressive behaviour, respectively. With regard, engagement in casual sex practice, 4.6% of the boys and 1.5% of the girls engaged, with a statistically significant difference. Gottlieb *et al.* (2002); Xu *et al.* (2002); Dimitry-Abraham *et al.* (2003) and El-Moselhy *et al.* (2004) supported our results, but they reported higher prevalence. El-Moselhy *et al.* (2004) observed, 12.2% of the males had casual sex, this high figure could be explained, higher age of their sample. Suicide ideation and/or attempt were practised by 2.0% of the boys and 8.1% of the girls, with a statistically significant difference. Hider (1998) stated, suicide attempt was more common among the females. Center of Disease Control (1998) showed, suicide attempt was practised by 20% of the females and 12.1% of the males. On the other hand, Paul *et al.* (2003) reported, 558 suicides were recorded among youth aged 15-24 year; 83.9% were males and 16.1% were females.

With regard distribution of the studied and the control groups according to sociodemographic factors (table 3), it was reported that 55.7% of the studied group were  $\geq 17$  years compared with 42.6% of the controls (OR=1.69, 95% CI: 1.27-2.25). Khafagy (1996) reported, older students had more risk compared with youngsters. Selner-O'Hagan *et al.* (1998) mentioned, young

adolescent generally reported less exposure to violence than did old adolescent. Further, 48.3% of the studied group were males compared with 43.9% of the controls (OR=1.19, 95% CI: 0.90-1.58). Khafagy (1996) agreed, the male gender represented a risk factor for smoking (OR=5.9, 95% CI: 3.90-9.02). Fahmy *et al.* (1997) stated, male secondary school students had total scores of knowledge on drug use more than the females. Selner-O'Hagan *et al.* (1998) and Pratt & Greydanus (2000) clarified, male adolescents generally reported more exposure to violence than did the females. At the same time, 19.2% of the studied group belong to one parent family compared with 5.5% of the control group (OR=4.07, 95% CI: 2.41-6.93). In a further analysis, the results indicated, the mother as a head of the one parent family represented more risk relative to the father (OR=4.44, 95% CI: 2.47-8.10, and 1.71, 95% CI: 0.36-10.63, respectively). This could be explained, one parent family had no powerful supervision on his/her son and/or daughter. Moreover, the mother as a head of one parent family had less powerful supervision. WHO (1998) stated, adolescents who are at high risk of developing behaviour problems usually have family disturbances such as a broken home or separation. Youssef *et al.* (1999) showed, family profile has direct association with violence behaviour of secondary school students. Fahmy *et al.* (1997) noticed, secondary school students lived in extended families had total scores of knowledge on drug dependence less than those lived in a nuclear family. Extended family might have powerful supervision on their son and/or daughter. Regarding birth order, 36.7% of the studied group were the first son or daughter compared with 33.2% of the controls (OR=1.17, 95% CI: 0.87-1.57) and 43.6% of the studied group were the last son and/or daughter compared with 41.3% of the controls (OR=1.10, 95% CI: 0.83-1.46). El-Moghazi *et al.* (1991) and Khafagy (1996) showed, birth order more than the first was considered as a risk. While, Fahmy *et al.* (1997) found, the first and the last births had total scores of knowledge on drug use more than the

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middle birth order ones. With regard number of siblings, 16.1% of the studied group had neither brothers nor sisters compared with 14.7% of the controls (OR=1.11, 95% CI: 0.75-1.65). Also, 44.5% of the studied group had  $\geq 3$  either brothers or sisters compared with 41.3% of the controls (OR=1.14, 95% CI: 0.86-1.52). El-Moghazi *et al.* (1991) and Khafagy (1996) supported our results. Khafagy (1996) showed,  $\geq 3$  siblings represented a risk (OR=1.7, 95% CI: 1.24-2.22). On the other hand, Fahmy *et al.* (1997) reported, students live in a big sized family ( $\geq 5$ ) had total scores of knowledge on drug use less than those lived in a small sized family ( $< 5$ ). Regarding work of the studied group, 23.0% of the studied group work compared with 8.2% of the controls (OR=3.37, 95% CI: 2.01-5.30). This was in accordance with Refaat (2001), who reported, 20.3% and 35.1% of her studied sample had violence related behaviours and suicide attempts, respectively, were working beside studying. Moreover, 44.1% of the studied group, the educational level of their family head was less than preparatory compared with 41.3% of the controls (OR=1.12, 95% CI: 0.84-1.49) and 40.9% of the studied group, the educational level of their family head was secondary compared with 36.1% of the controls (OR=1.23, 95% CI: 0.92-1.65). Khafagy (1996) showed, the educational level up to secondary was a risk factor. Also, 47.4% of the studied group, the occupation of their family head was unskilled labour compared with 39.7% of the controls (OR=1.37, 95% CI: 1.03-1.82) and 37.6% of the studied group, the occupation of their family head was semi-skilled and skilled labour compared with 37.6% of the controls (OR=1.00, 95% CI: 0.75-1.34). Also, Khafagy (1996) showed, labour occupation was a risk factor (OR=2.4, 95% CI: 1.22-4.55). Collectively, 45.4% of the studied group, belong to low social class compared with 40.8% of the controls (OR=1.21, 95% CI: 0.91-1.61) and 39.4% of the studied group, belong to middle social class compared with 36.6% of the controls (OR=1.13, 95% CI: 0.84-1.51). Lastly, 85.5% and 45.3% of the studied and the control groups had various types of

risky behaviours practices in their families, respectively (OR=7.11, 95% CI: 5.04-10.04). Warrburten *et al.* (1991); Khafagy (1996); El-Nouman *et al.* (1999) and Sadek *et al.* (2002) supported our results. Warrburten *et al.* (1991) stated, tobacco smoking, drug and alcohol use is vividly portrayed to adolescents as aspects of adulthood. Also, they suggested, adolescent's behaviour is greatly influenced by their family models. While, Khafagy (1996) reported, 52.8% and 63.5% of parents and siblings smoke in the student families, respectively (OR=2.0 for each of them). Moreover, Jessor *et al.* (1998) reported, modeling by family members might keep adolescents away from sound behaviours practices.

With regard attitudes of the control group towards risky behaviours among the studied group (table 4), some positive attitudes were present. We found, 53.7% and 50.8% of the control group, respectively, their attitudes were wish to help the risky behaviour students to quit suicide attempt and drug and/or alcohol using practices. Also, 62.4%, 47.9% and 33.7% of the control group, respectively, their attitudes were refusing casual sex, carrying weapon and suicide attempt practices among the studied sample. El-Nouman *et al.* (1999) supported our results, 64.5% and 73.8% offered to help drug users and suicide attempt, respectively. El-Nouman *et al.* (1999) stated, with proper guidance the constructive peer influence can be a force that is worthy of investment. Also, Jessor *et al.* (1998) showed, peer pressure might keep adolescents away from sound behaviours. While, 23.4% and 22.7% of the control group, respectively, expressed attitudes to find excuse for drug and/or alcohol use and no physical exercise practice among the studied sample. Also, 10.3% and 9.7% of the control group, respectively, their attitudes were showing sympathy for suicide attempt and smoking among the studied sample. Again, 80.8%, 62.6%, 0.8% and 0.5% of the control group their attitudes were accepting unhealthy diet, absence of physical exercise, casual sex and suicide attempt among the studied group, respectively, El-Nouman *et al.*

(1999) supported our results. These negative attitudes represent a hidden risk, as this group of the students could engage in practices one or more of the risky behaviours. So, this group of the students' necessities more detailed studies and focusing more attention and care to re-adjust their attitudes.

Regarding distribution of the control group according to their reasons for non practice of risky behaviours (table 5), health reserve was the main reason for healthy diet (79.5%), physical exercise practice (66.3%), no tobacco smoking (55.8%) and no drug and/or alcohol use (53.2%). While, social causes were the main reason for neither engagement in physical fight(s) nor carrying weapon (63.7% and 59.2%, respectively). Also, familial causes were the main reason for neither engagement in physical fight(s) nor carrying weapon (20.3% for each of them). This was expected and accepted as 94.5% of the controls were belong to two parents family with powerful supervision. Our results were supported by WHO (1998) and Youssef *et al.* (1999). On the other hand, religion was the main reason for neither casual sex nor suicide attempt practices (63.7% and 68.7%, respectively). Felimban (1993) found, religion and health were the main reasons for no smoking (67.6% and 58.3%, respectively), among their university students. Furthermore, Bearman and Bruckner (2001); Abdullah *et al.* (2002) and El-Moselhy *et al.* (2004) showed, religion was a main factor in abstinence from casual sex.

With regard distribution of risky behaviours among the studied sample according to their reasons for practice (table 6), the most important reason for unhealthy diet behaviour was imitation (55.2%), with a statistically significant difference. Warrburten *et al.* (1991) stated, adolescent's behaviour is greatly influenced by their family models. Also, Jessor *et al.* (1998) showed, modeling by family members keep adolescents near to risky behaviours practices. While, peer pressure was the most important reason for no physical exercise practice, smoking, drugs and/or alcohol use and engagement in casual sex (34.8%, 32.0%, 32.0% and 39.1%,

respectively), with a statistically significant differences for all mentioned behaviours. Khafagy (1996); New-Comb and Bentler (1988); El-Nouman *et al.* (1999) and Sadek *et al.* (2002) supported our result regarding smoking. Also, Brook and Brook (1990); El-Nouman *et al.* (1999) and Sadek *et al.* (2002) supported our result regarding drug abuse. Brook and Brook (1990) stated, peer pressure might be a powerful influence on whether adolescent initiate using drugs or not. Howard *et al.* (1999) stated, low concordance between parents and adolescents was associated with perpetuation of violence. While, Amirkhman *et al.* (2001) found, falling in love was the commonest reason (48.6%) for sexual practice. At the same time desire to feel grown up was the most important reason for physical fight(s) and carrying weapon (29.7% and 47.1%, respectively); with a statistically significant differences. Lastly, loneliness feeling was the most important reason for suicide attempt (84.8%), with a statistically significant difference.

With regard distribution of psychological symptoms, neurotic traits and awareness to the risk among the studied sample (table 7), 15.1% of the students had hysteria. Our result was close to the result reported by El-Nouman *et al.* (1999), 20.6%. On the other hand, El-Lawindi and El-Salamony (2003) reported a low figure, 2.6%. Regarding, obsession, 11.1% of the students had obsession. This result was lower than figures noticed by El-Nouman *et al.* (1999); Elkin (1999); Hammuda *et al.* (2000) and El-Lawindi & El-Salamony (2003), as their figures were 20.6%, 27.6%, 18.4% and 28.0%, respectively. The difference between these figures and ours was, most probably, due to differences in the sociodemographic and sample setting characteristics for example, Hammuda *et al.* (2000) and El-Lawindi & El-Salamony (2003)' studies. The subjects in these two studies were recruited from general secondary schools (did not include technical, compared to ours), included students from rural residence and the type of school was mixed. The relatively high figures of obsession mentioned above, including ours, might be due to the finding

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that obsessional symptoms were commonly endorsed in a general adolescent population (Hammoda *et al.*, 2000). Depression was noticed among 8.7% of the students. Again, this result was lower than the figures which were reported by Davis and Craig (1998); El-Nouman *et al.* (1999) and El-Lawindi & El-Salamony (2003), 10.0%, 11.6% and 27.6%, respectively. While, somatization was found among 8.5% of the students. This result was between the two figures reported by El-Lawindi & El-Salamony (2003) and Elkin (1999), 2.6% and 3.0%, respectively and by El-Nouman *et al.* (1999), 12.0%. Anxiety was observed among 6.2% of the students. This result was close to the figures which were noticed by Davis & Craig (1998) and El-Nouman *et al.* (1999), 8.0% and 11.6%, respectively. And lower than that showed by El-Lawindi and El-Salamony (2003), 32.3%. Lastly, phobia, was found among 4.7%. This result was close to the figure which was noticed by El-Nouman *et al.* (1999), 7.6% and lower than that showed by Elkin (1999) and El-Lawindi & El-Salamony (2003), 14.7% for each of both. This relatively low figure of phobia might be due to the nature of the technical secondary school students who didn't give the proper attention to their academic career. Moreover, neurotic traits were found in high percentages among these students; irritability (26.7%), insecurity feelings (25.4%) and sadness (41.9%). These high figures, which reflect personality distresses could be expected, given the identity confusion accompanied this developmental period in human life cycle.

With regard distribution of the studied and the control groups according to the psychological symptoms, neurotic traits and awareness to the risk (table 8), 22.8% of the studied group had hysteria compared with 6.1% of the controls (OR=4.59, 95% CI: 2.79-7.61). While, 17.4% of the studied group had obsession compared with 3.7% of the controls (OR=5.53, 95% CI: 2.98-10.40). With regard somatization, 12.8% of the studied group had somatization symptoms, compared with 3.4% of the controls (OR=4.13, 95% CI: 2.15-8.06). Regarding depression, 11.4% of the studied group had depression symptoms, compared

with 5.5% of the controls (OR=2.20, 95% CI: 1.26-3.86). With regard anxiety, 8.7% of the studied group had anxiety symptoms, compared with 3.2% of the controls (OR=2.93, 95% CI: 1.46-6.01). Regarding phobia, 6.9% of the studied group had phobic symptoms, compared with 2.1% of the controls (OR=3.47, 95% CI: 1.50-8.28). With regard neurotic traits, 37.8% of the studied group were having insecurity, compared with 13.7% of the controls (OR=3.83, 95% CI: 2.67-5.52). Moreover, 41.2% of the studied group were irritable compared with 6.8% of the controls (OR=9.53, 95% CI: 6.01-15.18). Also, 62.9% of the studied group were sad compared with 17.4% of the controls (OR=8.05, 95% CI: 5.73-11.33). Lastly, 96.4% of the studied group had no awareness to the risk compared with 80.8% of the controls (OR=6.41, 95% CI: 3.55-11.69). Beautrais (2000) stated, the strongest risk factors for youth suicide are mental disorders and a history of psychopathology.

Regarding distribution of the risky behaviours among the studied sample according to the psychological symptoms, neurotic traits and awareness to the risk (table 9), 8.1%, 52.8% and 96.4% of unhealthy diet group had hysteria, sadness and no awareness to the risk respectively. Cotrufo *et al.* (2005) didn't find similar results, this might be due to more severe forms of eating disorders among their group as well as cultural differences between the two communities. Also, 10.0%, 27.4% and 83.6% of no physical exercise practice group had hysteria, sadness and no awareness to the risk, respectively. At the same time, 10.7%, 61.3% and 64.0% of smoking group had somatization, insecurity and no awareness to the risk, respectively. While, 35.1%, 28.9% and 63.9% of drug and/or alcohol use group had symptoms of depression, anxiety and hysteria, respectively. Khadiga *et al.* (2004) reported, 61.2%, 5.55% and 5.55% of their addicts in Jeddah, KSA had depression, anxiety and hysteria, respectively. The difference between these figures and ours was, most probably, due to difference in the sample characteristics, namely being addicts in



Khadiga *et al.* (2004)' study, with a high comorbid psychopathology, especially depression. Also, 21.2%, 82.3%, 72.4% and 50.3% of physical fight(s) group had hysteria, insecurity, no awareness to the risk and sadness, respectively. Furthermore, 23.9%, 53.6%, 74.6% and 37.7% of carrying weapon group had obsession, insecurity, no awareness to the risk and sadness, respectively. El-Nouman *et al.* (1999) found, 68.3% and 32.% of their group with violence had insecurity and no awareness to the risk, respectively. Refaat (2001) found, relation between violence behaviour and insecurity and sadness. Also, Ritkallio *et al.* (2005) found, relation between delinquent behaviour and depression. While, 65.2%, 69.6% and 100.0% of casual sex practice group had obsession, insecurity and no awareness to the risk, respectively. Bennett & Bauman (2000) and Ramrakha *et al.* (2000) reported an association between mental ill health and risky sexual health behaviour. Lastly, 89.1%, 69.6%, 95.7% and 30.4% of suicide attempt group had depression, insecurity, irritability and no awareness to the risk, respectively. Beautrais (2000) stated, the strongest risk factors for youth suicide are mental disorders and a history of psychopathology. El-Nouman *et al.* (1999) found similar figures, 56.3% and 28.6% of their group with suicide attempt had insecurity and no awareness to the risk, respectively. Furthermore, 68.3% and 32.% of their group with violence had insecurity and no attention to the risk, respectively. Moreover, Refaat (2001) found, a significant relation between suicide attempt and depression, anxiety and hysteria, a significant relation between drug abuse and depression and anxiety and a significant relation between smoking and depression. Also, Woods *et al.* (1997) showed, suicide attempt, was related to depression and impulsive behaviours.

We can conclude that risky behaviours and mental health problems were found to be common among

secondary school students. Most of the risky behaviours were more common among boys. The most important sociodemographic risk factors were positive family history of risky behaviours, one parent family and the student's work besides studying. The most important reasons for that risky behaviours practices were imitation, feel grown up and peer pressure. The most common mental health problem was hysteria, while the most common neurotic trait was sadness. The most important mental health problem risk factors were obsession and hysteria. While, the most important neurotic traits risk were irritability and sadness. No awareness to the reported risk was present among most of the students. The current study supported the findings of the previous studies done in this field. It highlights the necessity of exploring risky behaviour (s) among the school adolescents, especially with those having one or more of mental health problems. Moreover, health professionals, families, schools and community should develop the sensitivity when encountering a teenager with mental health problems, in order to consider other health risks and behaviours. Conversely, an inquiry regarding mental health could be beneficial for a teenager presented by risk-taking behaviour (s). That should be an integration in medical and nursing curriculums as well as school health programs. Also, coordination between Families, schools and community as a whole to provide psychological support and to promote sound behaviours should be developed. At the end, more epidemiological researches should be carried out on a relatively bigger sample, as well as, using a research diagnostic criteria to screen for psychiatric disorders, rather than psychological symptoms, among adolescents on a national level. To sum up, the need for coordinated health care for adolescents covering psychological, sexual and social aspects is perhaps the most important point that should be made.

## Epidemiological Study Of Risky Behaviours And.....

**Table (1):** Distribution of the risky behaviours among the studied sample.

Risky behaviours	N =827	%
Unhealthy diet: Yes	447	54.1
No physical exercise practice: Yes	391	47.3
Tobacco smoking: Yes: Irregular Regular	447 239 208	54.1 28.9 25.2
Drugs and/or alcohol use: Yes: Irregular Regular	97 61 36	11.7 7.4 4.3
Engagement in physical fight(s): Yes: 1 time 2-5 times ≥ 6 times	344 228 62 54	41.6 27.6 7.5 6.5
Carrying weapon: Yes: Sometimes Mostly	138 67 71	16.7 8.1 8.6
Engagement in casual sex: Yes	23	2.8
Suicide ideation and/or attempt: Yes	46	5.6
Total number of students with risky behaviours	447	54.1

**Table (2):** Distribution of the risky behaviours among the studied sample according to gender.

Risky behaviours	Boys n=348 (42.1%)		Girls n=479 (57.9%)		$\chi^2$	P-value
	No.	%	No.	%		
Unhealthy diet	242	69.5	205	42.8	58.04	0.000
No physical exercise practice	154	44.3	237	49.5	2.21	0.137
Tobacco smoking	339	97.4	108	22.5	454.89	0.000
Drugs and/or alcohol use	89	25.6	8	1.7	111.25	0.000
Engagment in physical fight(s)	248	71.3	96	20.0	217.69	0.000
Carrying weapon	124	35.6	14	2.9	155.12	0.000
Engagement in casual sex	16	4.6	7	1.5	7.33	0.007
Suicide ideation and/or attempt	7	2.0	39	8.1	14.42	0.000

**Table (3):** Distribution of the studied and the control groups according to sociodemographic factors.

Sociodemographic factors	Studied group (n=447)		Control group (n=380)		OR (95%CI)
	No.	%	No.	%	
Age (years):					
< 17	198	44.3	218	57.4	0.59 (0.44-0.79)
≥ 17	249	55.7	162	42.6	1.69 (1.27-2.25)
Sex :					
Male	216	48.3	167	43.9	1.19 (0.90-1.58)
Female	231	51.7	213	56.1	0.84 (0.63-1.11)
Type of the family:					
Two parents	361	80.8	359	94.5	0.25 (0.14-0.41)
One parent:	86	19.2	21	5.5	4.07 (2.41-6.93)
The mother	73	16.3	16	4.2	4.44 (2.47-8.10)
The father	6	1.3	3	0.8	1.71(0.36-10.63)*
Other relatives	7	1.6	2	0.5	3.01(0.57-29.80)*
Birth order:					
First	164	36.7	126	33.2	1.17 (0.87-1.57)
Middle	88	19.7	97	25.5	0.72 (0.51-1.01)
Last	195	43.6	157	41.3	1.10 (0.83-1.46)
Numper of siblings:					
0	72	16.1	56	14.7	1.11 (0.75-1.65)
1-2	176	39.4	167	44.0	0.83 (0.62-1.10)
≥3	199	44.5	157	41.3	1.14 (0.86-1.52)
Work with studying					
Yes	103	23.0	31	8.2	3.37 (2.15-5.30)
Education of the family head:					
≤ preparatory	197	44.1	157	41.3	1.12 (0.84-1.49)
Secondary	183	40.9	137	36.1	1.23 (0.92-1.65)
University	67	15.0	86	22.6	0.60 (0.42-0.87)
Occupation of the family head:					
Unskilled labour	212	47.4	151	39.7	1.37 (1.03-1.82)
Semi-skilled/skilled	168	37.6	143	37.6	1.00 (0.75-1.34)
Professional	67	15.0	86	22.6	0.60 (0.42-0.87)
Social level:					
Low	203	45.4	155	40.8	1.21 (0.91-1.61)
Middle	176	39.4	139	36.6	1.13 (0.84-1.51)
High	68	15.2	86	22.6	0.61 (0.42-0.89)
Risky behaviour practice in family:					
Yes	382	85.5	172	45.3	7.11 (5.04-10.04)

\* Exact confidence limits

**Table (4):** Attitudes of the control group towards the risky behaviours among the students have them.

Attitude	Unhea- lthydiet	No exerc.	Tobac.s mok.	Drug/ alcohol	Physic. fight	Carry. weapon	Casual sex	Suicide attempt	$\chi^2$	P
	%	%	%	%	%	%	%	%		
Wish to quit	6.1	3.9	48.2	50.8	34.7	22.1	27.9	53.7	126.00	0.00
Find excuse	4.2	22.7	22.1	23.4	15.0	10.0	6.8	1.8	44.39	0.00
Sympathy	1.8	2.4	9.7	6.1	8.7	6.3	2.1	10.3	15.41	0.03
Accept	80.8	62.6	7.1	5.8	13.7	13.7	0.8	0.5	370.60	0.00
Refuse	7.1	8.4	12.9	13.9	27.9	47.9	62.4	33.7	145.2	0.00

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**Table (5):** Distribution of the control group according to their reasons for non practice of the risky behaviours.

Risky behaviours	Relig-ious	Health	Fam- ilial	Social	Other	$\chi^2$	P-value
	%	%	%	%	%		
Unhealthy diet	0.5	79.5	11.1	1.3	7.6	282.07	0.00
No physical exercise	2.4	66.3	17.1	7.1	7.1	175.50	0.00
Tobacco smoking	7.6	55.8	20.3	12.1	4.2	110.00	0.00
Drugs/alcohol use	20.5	53.2	7.6	16.3	2.4	98.38	0.00
Physical fight(s)	5.0	3.2	11.3	63.7	16.8	158.75	0.00
Carrying weapon	2.9	1.3	20.3	59.2	16.3	137.71	0.00
Casual sex	63.7	7.1	17.1	8.4	3.7	157.13	0.00
Suicide attempt	68.7	7.4	16.3	4.2	3.4	197.16	0.00

**Table (6):** Distribution of the students have risky behaviours according to their reasons for practice.

Risky behaviours	Curio- sity	Peer press.	Feel grown	Imita- tion	Lonel- iness	Other	$\chi^2$	P-value
	%	%	%	%	%	%		
Unhealthy diet	8.3	31.8	2.0	55.2	1.6	1.1	795.63	0.00
No physical exercise	0.0	34.8	10.7	33.0	5.4	16.1	291.51	0.00
Tobacco smoking	6.5	32.0	29.5	26.0	2.9	3.1	309.80	0.00
Drugs/alcohol use	4.1	32.0	27.8	24.7	8.3	3.1	58.40	0.00
Physical fight(s)	13.7	25.3	29.7	27.0	2.6	1.7	193.09	0.00
Carrying weapon	2.2	12.3	47.1	29.7	1.5	7.2	163.51	0.00
Casual sex	13.0	39.1	21.7	17.4	4.4	4.4	14.03	0.02
Suicide attempt	0.0	0.0	0.0	0.0	84.8	15.2	190.54	0.00

**Table(7):** Distribution of the psychological symptoms, neurotic traits and awareness to the risk among the studied sample.

Variables	N=827	%
Psychological symptoms:		
Hysteria	125	15.1
Obsession	92	11.1
Depression	72	8.7
Somatization	70	8.5
Anxiety	51	6.2
Phobia	39	4.7
Neurotic traits:		
Insecurity	221	26.7
Irritability	210	25.4
Sadness	347	41.9
Total number of students with psychological symptoms	376	45.5
Awareness to the risk:		
No awareness	738	89.2

**Table (8):** Distribution of the studied and the control groups according to the psychological symptoms, neurotic traits and awareness to the risk.

Variables	Studied group (n=447)		Control group (n=380)		OR (95%CI)
	No.	%	No.	%	
Psychological symptoms					
Hysteria	102	22.8	23	6.1	4.59(2.79-7.61)
Obsession	78	17.4	14	3.7	5.53(2.98-10.40)
Somatization	57	12.8	13	3.4	4.13(2.15-8.06)
Depression	51	11.4	21	5.5	2.20(1.26-3.86)
Anxiety	39	8.7	12	3.2	2.93(1.46-6.01)
Phobia	31	6.9	8	2.1	3.47(1.50-8.28)
Neurotic traits					
Insecurity	169	37.8	52	13.7	3.83(2.67-5.52)
Irritability	184	41.2	26	6.8	9.53(6.01-15.18)
Sadness	281	62.9	66	17.4	8.05(5.73-11.33)
Awareness to the risk					
No awareness	431	96.4	307	80.8	6.41(3.55-11.69)

**Table (9):** Distribution of the risky behaviours among the studied sample according to the psychological symptoms, neurotic traits and awareness to the risk.

Variables	Unhealthydiet n=447	No exerc. n=391	Smoking n=447	Drug/ alcohol. n=97	Physic. fight n=344	Carry.w eapon. n=138	Casual sex n=23	Suicid attempt n=46
	%	%	%	%	%	%	%	%
Psychological symptoms								
Hysteria	8.1	10.0	9.2	63.9	21.2	20.3	26.1	58.7
Obsession	1.8	2.3	5.4	27.8	10.5	23.9	65.2	39.1
Somatization	2.5	4.1	10.7	37.1	9.3	21.0	26.1	10.9
Depression	0.7	1.0	5.1	35.1	0.0	0.0	30.4	89.1
Anxiety	3.8	6.6	6.9	28.9	7.6	21.0	26.1	17.4
Phobia	2.7	2.3	4.7	7.2	1.7	2.9	21.7	28.3
Neurotic traits								
Insecurity	13.0	1.0	61.3	71.1	82.3	53.6	69.6	69.6
Irritability	8.3	6.6	48.1	52.6	47.7	40.6	34.8	95.7
Sadness	52.8	27.4	40.7	50.5	50.3	37.7	26.1	67.4
Awareness to the risk								
No awareness	96.4	83.6	64.0	69.1	72.4	74.6	100.0	30.4

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## دراسة وبائية للسلوكيات الخطرة وعلاقتها باعتلال الصحة النفسية لدى طلاب المدارس الثانوية بالقاهرة

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أجريت هذه الدراسة على 827 من طلبة المدارس الثانوية العامة والفنية بالقاهرة . وقد اختير نمط الدراسة المقطعية لإجراء هذه الدراسة. وكان الغرض من

هذه الدراسة هو تحديد معدل انتشار السلوكيات الخطرة وتقييم علاقتها بالعوامل الاجتماعية- الديموجرافية والمشاكل النفسية بين الطلبة تحت الدراسة واستكشاف اتجاهات الطلبة بالنسبة لهذه السلوكيات. وقد تم جمع البيانات بواسطة استبيان معياري كما تم تقييم مختلف الاضطرابات والخصائص النفسية بواسطة معيار الميدل سكس. وقد بينت الدراسة ما يلي: مارس غالبية الطلبة (54.1%) السلوكيات الخطرة وكان أكثرها شيوعا هو تناول غذاء غير صحي والتدخين (54.1% لكل منهما). أيضا بينت الدراسة أن الطلبة الذكور كانوا أكثر ممارسة لكل السلوكيات الخطرة الا عدم ممارسة الرياضة ومحاولة الانتحار. وكان من أهم عوامل الخطورة الاجتماعية - الديموجرافية: السلوكيات الخطرة في العائلة، العائلة ذات رب الأسرة الواحد، عمل الطالب مع الدراسة (نسبة أودز = 7.11، 4.07، 3.37 على الترتيب). وكان من أهم أسباب تناول غذاء غير صحي، حمل سلاح والانخراط في علاقات جنسية عابرة هو المحاكاة (55.2%)، الشعور بالنضج (47.1%)، ضغط القراء (39.1%) علي الترتيب. بينما كانت الهستيريا (15.1%) من أكثر المشاكل النفسية شيوعا وكان الشعور بالحزن (41.9%) من أكثر الخصائص العصبية. وأيضاً كان من أهم عوامل الخطورة بالنسبة للمشاكل النفسية: الوسواس والهستيريا (نسبة أودز = 5.53 ، 4.59 على الترتيب). بينما كان الشعور بالقلق والحزن من أهم الخصائص العصبية خطورة (نسبة أودز = 9.53 ، 8.05 على الترتيب). كما كان عدم الوعي للخطر يمثل نسبة 96.4% من الطلبة الذين يمارسون السلوكيات الخطرة (نسبة أودز = 6.41).