ERECTILE DYSFUNCTION IN RURAL PENINSULAR MALAYSIA

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Introduction

- Erectile Dysfunction (ED) or male impotence is defined as the inability to develop or maintain an erection sufficient for satisfactory sexual performance [24].
- Erectile dysfunction can have devastating psychological consequences including feelings of shame, loss or inadequacy and relationship problems.
- There is a strong culture of silence and inability to discuss the matter.
- Around 1 in 10 men will experience recurring impotence problems at some point in their lives.
- Causes of erectile dysfunction may be physiological or psychological.

Prevalence of ED

- A recent prevalence survey (unpublished data) in Malaysia estimated 16% of men aged 40 years or older had 'moderate to complete ED' [25]
- Massachusetts Male Aging Study reports a prevalence of 52% in men aged 40-70 in the year 1994[9]
- A recent study conducted in Thailand reported an overall prevalence rate of 37.5% amongst men 40-70 years of age[26]
- In Singapore, prevalence of erectile dysfunction among 729 men aged >30 years old were 51.3%[8]

Objectives

1. To study the prevalence of ED in rural Peninsular Malaysia
2. To determine the association between hypertension and ED
3. To determine the association between Diabetes Mellitus and ED
4. To determine the association between hyperlipidemia and ED
5. To determine the association between obesity and ED
6. To determine the association between smoking and ED

Materials and Methods

Study Design

- Cross-sectional study
- The International Index of Erectile Function (IIEF-15) self-administered questionnaire was used. Presence of ED was defined as an IIE-15 score of less than 19.
- The study was carried out from 11th June to 15th June 2007.

Study Area

- The study was carried out in 20 villages (4 villages from 5 different stations), which were selected by the respective Health Office of the stations.

Study Population

- Our target population were men aged 30 years and above from every randomly selected household.
- There were only 481 respondents from 615 eligible respondents

Errors and Limitations

- Samples selected may not proportionally represent the whole targeted population, thus this affects the validity of the data and furthermore the findings of the study.
- There were only 481 respondents out of a total of 615 eligible respondents.
- This is because the remaining 134 eligible respondents refused to answer the self administered IIEF-15 questionnaire.
- One of the disadvantages of the self-administered questionnaire is difficulty for the illiterate or semiliterate and both uneducated respondents in reading and understanding the questions.
- We also cannot determine whether the questions are understood and interpreted in the same way by different respondents so therefore the results might be inaccurate.
- There might have been human and machine errors during data input and calculation.

Results and Discussion

1. Prevalence of ED

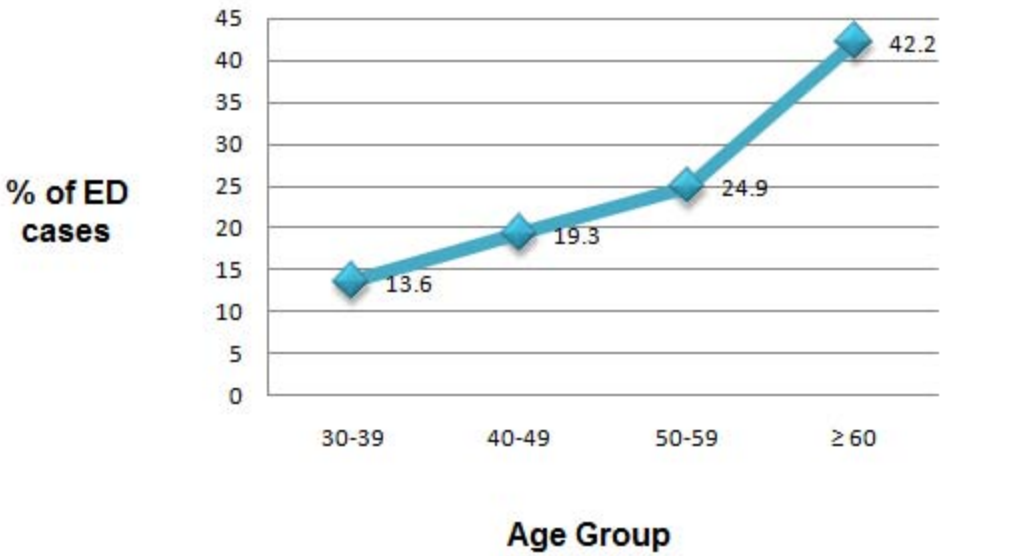
	Frequency
Erectile Dysfunction	374 (77.8%)
No Erectile Dysfunction	107 (22.2%)
Total	481 (100.0%)

- In this cross sectional study, the overall prevalence of ED among 481 rural Malaysia men aged 30 and above was 77.8%.

- The reported prevalence of ED among Asian countries varied widely from 18.8% in Iran [3] to 63.2% in Japan [4] depending on the method of data collection, type of questionnaire and surveillance group

- This considerably higher rate could probably be due to a number of reasons, one of which is because most of our respondents (36.2%) were more than 60 years old, whereas the study population in the nationwide survey was younger.

2. Prevalence of Erectile Dysfunction in Different Age Groups



$p<0.05$

- Of all risk factors studied, age had the strongest association with ED.

- This is similar to many studies conducted around the world where age was the single most important determinant of ED [10].

- The fact that age is strongly associated with ED has been noted in other studies as well, notably the Massachusetts Male Aging Study(MMAS) study which showed the prevalence of complete ED tripling from 5% to 15% between subject ages 40 and 70 years [8].

3. Prevalence of Erectile Dysfunction in Different Ethnic Groups

		Erectile Dysfunction		
		Yes	No	Total
Ethnic Group	Malay	317 (84.8%)	75 (70.1%)	392
	Others	57 (15.2%)	32 (29.9%)	89
	Total	374 (100.0%)	107 (100.0%)	481

$p<0.05$

- From the table shown above, Malays seem to have higher risk of having erectile dysfunction.

- Although it is statistically significant, the total number of Malay respondents is four times higher compared to other ethnic group respondents and thus this has created a respondent bias in the study.

- Other races include Chinese, Indian and other Bumiputras.

- Ethnicity was reported in two previous studies to be unassociated with ED [1, 2].

4. Association between Hypertension and ED

		Erectile Dysfunction	
		Yes	No
Hypertension	Yes	101 (90.2%)	11 (9.8%)
	No	273 (70.4%)	96 (26.0%)
	Total	374	107

OR = 3.229, 95% CI = 1.662-6.274

- From our study we have found that Hypertension is significantly related to ED.

- Erectile function is impaired in hypertensive patients not by the increase in blood pressure, but by the associated stenotic lesions [12].

5. Association between Diabetes Mellitus and ED

		Erectile Dysfunction	
		Yes	No
Diabetes Mellitus	Yes	50 (94.3%)	3 (5.7%)
	No	324 (75.7%)	104 (24.3%)
	Total	374	107

OR = 5.350, 95% CI = 1.634-17.511

- From our study we have found that there is a significant association between Diabetes Mellitus and ED.

- ED is said to follow within 10 years of the diagnosis of diabetes in at least 50% of men and may also be the presenting symptoms of diabetes in 10% to 15 % [13].

- The impaired blood flow to the penis, resulting from atherosclerosis of the penile arteries is the main reason for erectile dysfunction in diabetic men.

6. Association between Hyperlipidemia and ED

		Erectile Dysfunction	
		Yes	No
Hyperlipidemia	Yes	48 (85.7%)	8 (14.3%)
	No	326 (76.7%)	99 (23.3%)
	Total	374	107

OR = 1.822, 95% CI = 0.384-3.981

- Previous studies have shown that patients with high serum cholesterol and low HDL levels are at increased risk for ED [14].

- However, in this study, the correlation between hyperlipidemia and ED is not statistically significant

7. Association between Obesity and ED

		Erectile Dysfunction	
		Yes	No
Obesity	Yes	40 (78.4%)	11 (21.6%)
	No	324 (77.3%)	95 (22.7%)
	Total	364	106

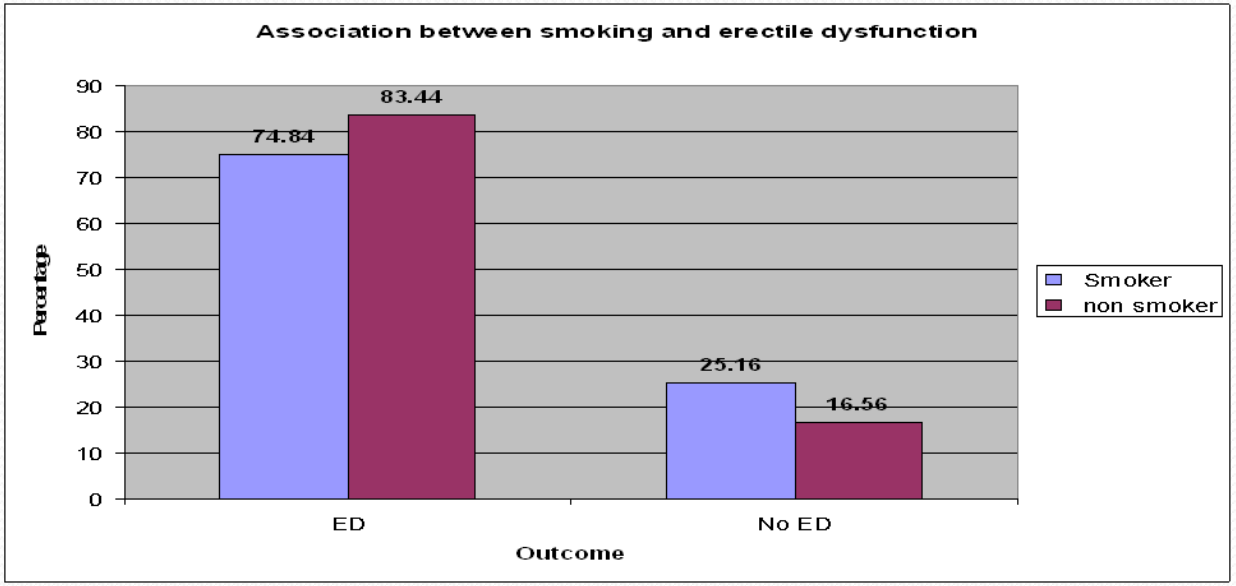
OR = 1.066, 95% CI = 0.527-2.159

- Endothelial function showed a greater impairment in impotent obese men as compared with potent obese men.[16]

- Men with a body mass index (BMI) over 28.7 have a 30% higher risk of having ED than those with a normal BMI (i.e. 25 or below).[17]

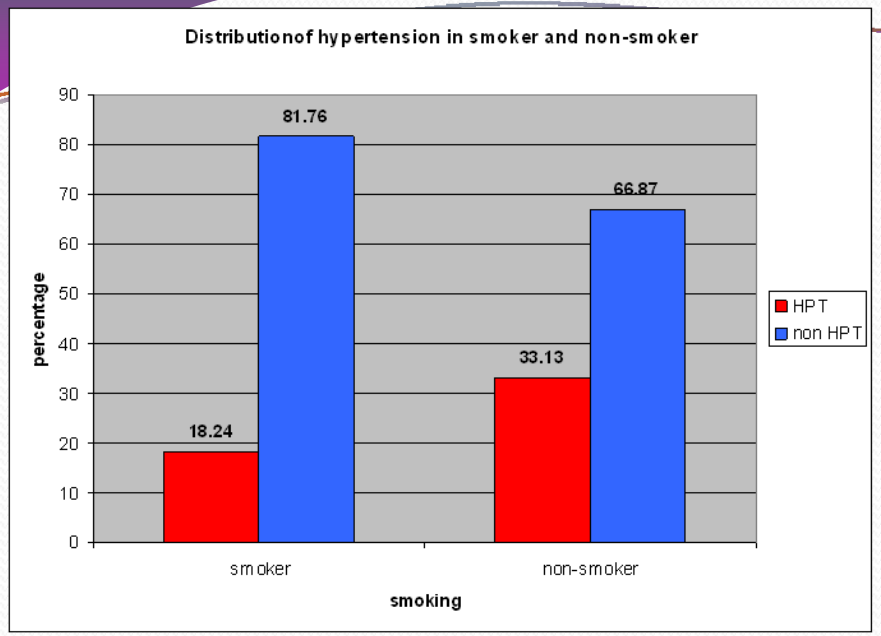
- However, from this study, the correlation between obesity and ED is not statistically significant

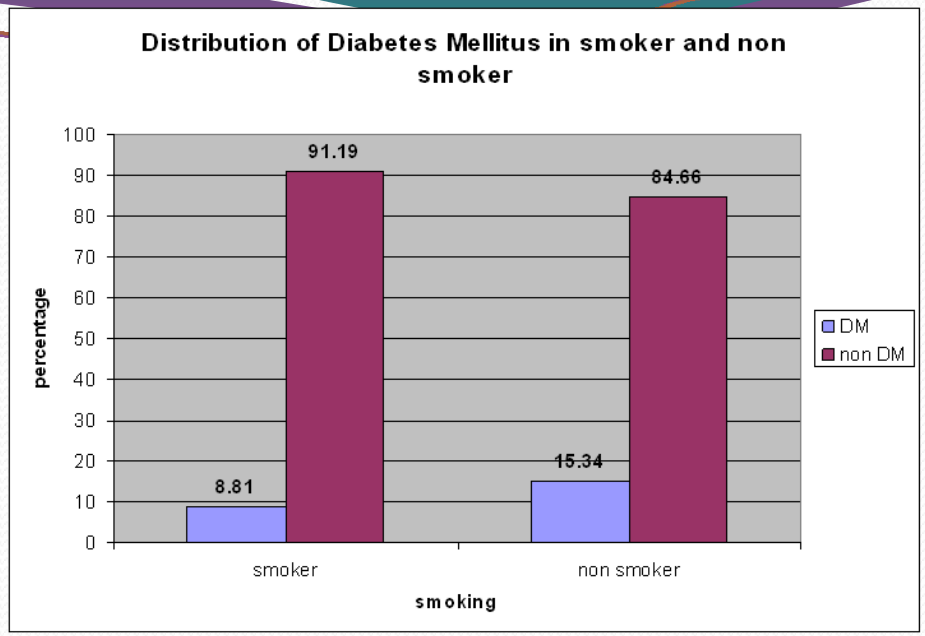
8. Association between Smoking and ED



OR=0.591, 95% CI=0.364-0.959

- Although previous researches have shown that a smoker has a greater chance of developing erectile dysfunction than non-smokers [18, 19, 20], our study showed that smoking was negatively correlated with erectile dysfunction.
- Since erectile dysfunction is a disease of multifactor, we would like to know whether there is a presence of confounding factors that have obscured our findings





OR = 0.45, 95% CI = 0.292-0.694

OR = 0.53, 95% CI = 0.300-0.948

- We further studied the differences of characteristics between the smoking and non-smoking population, and from there we found out that majority of our non-smoking population suffered from Diabetes Mellitus and Hypertension as compared to the smoking population, as shown in the figures above.

- Since Diabetes Mellitus and Hypertension are both well-established major risk factors for erectile dysfunction, we are afraid that this has distorted our study result.

Conclusion

- The prevalence of ED among 481 rural Peninsular Malaysia men aged 30 and above was 77.8%.
- This study shows that Erectile Dysfunction (ED) is affected by many factors that correlate amongst each other .
- The factors are increasing age, hypertension and diabetes mellitus.
- As age increases, the prevalence of ED also increases.
- A hypertensive patient has a 3.2 times chance of developing ED compared to someone with a normal blood pressure.

Conclusion

- A diabetic has a 5.35 times chance of developing ED compared to a non-diabetic.
- From this study we have found that there is no significant association between hyperlipidemia and obesity with ED.
- With increasing age, diseases like hypertension, diabetes mellitus and hyperlipidemia are more common due to the aging process.
- Our study shows that smoking is not the main independent risk factor for ED and we believe that due to the presence of confounding variables such as Diabetes Mellitus and hypertension, our results may have been obscured.

Conclusion

- With an ageing population, erectile dysfunction may become a significant health problem in men's health.
- What can be done is to improve the quality of life by increasing health awareness among the general public.
- ED is a sensitive issue amongst men, especially in the Malaysian culture.
- Doctors need to have adequate skill and knowledge in dealing with patients with this problem.

References

1. Jonler-M, et al. The effect of age, ethnicity and geographical location on impotence and quality of life. Br-J-Urol. 1995 May; 75(5):651-5.
2. Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States: prevalence and predictors. JAMA 1999; 281:537.
3. Safarinejad MR. Prevalence and risk factors for erectile dysfunction in a population-based study in Iran. Int J Impot Res 2003; 15: 246-52.
4. Sasayama S, Ishii N, Ishikura F, Kamijima G, Ogawa S, Kanmatsuse K, et al. Men's Health Study: epidemiology of erectile dysfunction and cardiovascular disease. Circ J2003; 67: 656-9.
5. Kongkanand A. Prevalence of erectile dysfunction in Thailand. Int.J Androl 2000; 23Suppl 2:77-80.
6. Chew KK, Earle CM, Stuckey BG, Jamrozik, Keogh EJ. Erectile dysfunction in general medicine practice: prevalence and clinical correlates. Int. J Impot Res 2000; 12(1):41-5.
7. Parazzini F, Fabris FM, Bortolotti A, et al. Frequency and Determinants of Erectile Dysfunction in Italy. Eur Urol 2000; 37:43-9.
8. J K Tan, C Y Hong, D J C Png, L C H Liew, M L Wong. Erectile Dysfunction in Singapore: prevalence and its associated factors. Singapore Med J 2003; 44(1): 020-026
9. Feldman HA, Goldstein I, Hatzichristou DG, Krane RJ, Mckinlay JB. Impotence and its medical and psychosocial correlates: results of the Massachusetts Male Aging Study. J Urol 1994; 151: 54-61
10. Nehra A, Kulaksizoglu H. Global perspectives and controversies in the epidemiology of male erectile dysfunction. Curr Opin Urol 2002; 12: 493-6.
11. Doumas M., Tsakiris A., Douma S., Grigorakis A., Hounta A., Tsiodras S., Dimitriou D., Giamarellou H. Factors affecting the increased prevalence of erectile dysfunction in Greek hypertensive compared to normotensive subjects. J Andro 2005; 1; 8-10
12. Hsieh JT., Lue TF., Muller SC. The influence of blood flow and blood pressure on penile erection. Int J impot Res 1989; 1; 35-42
13. Lewis RW. Epidemiology of erectile dysfunction. Urol Clin North Am 2001; 28; 209-16, vii.

References

14. M. I. Gndüz, B. H. Gümüs, C. Sekuri.Relationship between metabolic syndrome and erectile dysfunction.*Department of Urology, Celal Bayar University, Manisa, Turkey*
15. Luciano Kolodny, MD. Erectile dysfunction and vascular disease. Vol 114/No 4/ October 2003/ Postgraduate Medicine
16. F. Giugliano, K Esposito, C Di Palo, M Ciotola, G Giugliano, R Marfella, M D'Armiento, D Giugliano. Erectile dysfunction associates with endothelial dysfunction and raised proinflammatory cytokine levels in obese men. Journal of endocrinological investigation. ISSN 0391-4097
17. K. Esposito, F. Giugliano, C. Di Palo, et al.; Effect of lifestyle changes on erectile dysfunction in obese men., JAMA,2004, vol. 291, pp. 2978—2984
18. R Shiri et al. Relationship between smoking and erectile dysfunction. International Journal of Impotence Research 2005 17: 164-169.
19. KT McVary et al. Smoking and erectile dysfunction: evidence based analysis. Journal of Urology 2001 166:1624-32.
20. G Dorey. Is smoking a cause of erectile dysfunction A literature review. British Journal of Nursing. 2001 10:455-65.
21. A Natali et al. Heavy smoking is an important risk factor for erectile dysfunction in young men. International Journal of Impotence Research 2005 17: 227-230.
22. TO Tengs, ND Osgood. The link between smoking and impotence: two decades of evidence. Preventative Medicine 2001 32: 447-452.
23. V Mirone et al. Cigarette smoking as risk factor for erectile dysfunction: results from an Italian epidemiological study. European Urology 41: 294-297.
24. NIH Consensus Development Panel on Impotence. Impotence. *JAMA* 1993; 270; 83-90
25. TO Lim, A Daz, S Rampal, M Zaki, RM Sahabudin, MJ Rohan, S Isaacs. Cross-cultural adaptation of the English version of the International Index of Erectile Function (IIEF) for use in Malaysia. International Journal of Impotence Research 2003 15: 329-336.