

Can we encourage back pain sufferers who smoke and are on benefits to quit smoking by curtailing social benefits?

Abstract

One of the harmful effects of cigarette smoking is back pain. Cessation of smoking improves the pathological changes in the disc that are caused by smoking. Education has a greater effect among higher socio economic groups in encouraging to quit. Financial pressures are known to have a greater effect on lower socio economic groups. Back pain sufferers on social benefits and who smoke are more likely to be in the lower socio economic group. Given the benefits of quitting smoking would it not be beneficial to provide an intense campaign among this select group to give up smoking or to face curtailment of social benefits?

Keywords: Back Pain, Smoking Cessation, Disability Evaluation, Public Assistance, Intervertebral Disk

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Introduction

Low back pain is a significant cause of disability. A definite relationship exists between smoking and back pain. The real extent of this link is still not fully apparent as the effect of smoking on the back is multifactorial. Experimental work has however shown that cessation of smoking can reverse some of the pathological changes in the spine. Giving up smoking could thus be one of the measures to improve back pain in smokers. Health campaigns though effective in reducing the incidence of smoking has not had a uniform effect across all socio economic groups. Monetary pressures have a greater impact among the lower socio economic groups in helping them to quit smoking. Could we thus encourage back pain sufferers who smoke and are on benefits to quit within a target period or face curtailment of social benefits.

Epidemiology of back pain

Chronic Low back pain places a significant burden on the health and social welfare system of a community. In a national survey in the United Kingdom 40% of the adult population in Britain reported that they had experienced back pain in the previous 12 months. Nearly 40% of these consulted their General Practitioner for help with back pain, and 10% visited a practitioner of complementary medicine (osteopath, chiropractor or acupuncturist).¹ In the United Kingdom direct health care cost of back pain in 1998 was £1.6 Billion. The indirect costs of informal care and the production losses was about £10 Billion.²

Epidemiology of smoking

Smoking is still a major health issue with about 9 million still smoking in England.³ There has been benefit from anti smoking campaigns which has shown an overall decrease in the prevalence of smoking among adults. The prevalence decreased from 24% in 2005 to 22% in 2006. The decrease was statistically significant, and it occurred among both men and women.⁴ In the United Kingdom, the treatment costs of smoking related disease has been estimated to cost the NHS about £1.4bn-£1.5bn a year (about 0.16% of the gross domestic product). It has been estimated that 34 million man days are lost in England and Wales through sickness absence resulting from smoking related illness.⁵ There is also a variation in prevalence

of smoking among various socio economic groups. In 2006 it was 15% among professionals and managers and 29% among routine and manual workers.⁶

Smoking and back pain

One of the adverse health affects of smoking is back pain. Several large epidemiologic studies as well as smaller clinical studies have suggested that cigarette smoking is an independent risk factor for low back pain.⁷ Contrary to this theory Deyo & Bass,⁸ have suggested that smoking may not be a true risk factor but instead be a marker for a constellation of social, economic, and occupational factors that are related to back pain. In 1999 Leboeuf-Yde,⁹ reported a systematic review of 47 epidemiologic studies. The review reported that 51% of the 47 reviewed studies showed a positive association between smoking and low back pain that reached statistical significance. In 2000 a further review of 38 studies was reported by Goldberg et al.¹⁰ They concluded that the data was fairly consistent with the notion that smoking is associated with non-specific low back pain. They however added that there are too few studies to make any conclusions regarding other related measures, such as disc degeneration, herniated discs, and sciatica.

Several biologic mechanisms have been suggested to explain the association between smoking and back pain. Increased coughing leads to increased pressure on the spine and may predispose to herniated discs.¹¹ Metabolic effects may diminish bone mineral content resulting in micro fractures of the trabeculae of the vertebral bodies.¹² These micro fractures may also result in vertebral deformities and loss of spinal stability. Smoking also impairs fibrinolysis and causes increased fibrin deposition and scar formation.¹³ The acute and chronic cardiovascular effects of smoking may reduce blood flow and thereby the nutrition of the disc and other vertebral tissues. This may indirectly increase back pain and functional disability.¹⁴ Smoking can also affect the metabolism of the intervertebral disc and accelerate disc degeneration.¹⁵

A more recent multi-centre cross-sectional study of 25,455 by Vogt et al.¹⁶ reported that smokers compared with non smokers reported more severe symptoms, which were present for a greater proportion of time each day.

The experimental work by Nemoto et al.¹⁷ reported that after cessation of smoking, progression of degeneration in the spine ceased and some of the pathological changes caused by exposure to smoke were reversed. It thus stands to reason that cessation of smoking should be one of the main targets in smokers who have back pain.

Estimate of the number of smokers who claim disability living allowance for a primary diagnosis of back pain

UK govt data (Nov 2006).¹⁸ suggest that there are about 425,000 claimants of disability allowance due to back ailments. This includes 106,560 with a primary diagnosis of Spondylosis – including disc disease, cervical / lumbar etc (D02), 108,510 with a primary diagnosis of Back pain – not specified (D03) and 211,870 with disease of the muscle, bones or joints (D05).¹⁸ No data was retrievable from any source on the actual number or percentage of smokers among these claimants. Some projections can however be made from available figures albeit with a possibility of error. Considering a prevalence of 20%³ among the 425,000 claimants of Disability Living Allowance it is possible that there are about 80,000 claimants who smoke. It is more than likely the prevalence is nearer the 30% mark which is the prevalence of smoking in the lower socio economic group.

Financial stress has greater impact than health education among the lower socio economic groups

From the work by Gallus et al.¹⁹ it is clear that in Europe smoking consumption decreases 5-7% for a 10% increase in the real price of cigarettes thus establishing that financial stress is a significant factor to stop smoking. Townsend et al.²⁰ have shown that men and women in lower socioeconomic groups are more responsive than are those in higher socioeconomic groups to changes in the price of cigarettes and less to health publicity. Financial stress in the form of potential loss of benefits may thus increase the likelihood of this group giving up smoking.

There may be a counter argument from a popular misconception that smoking provides some stress relief. Research however shows cigarette smoking does not provide mood control benefits, but rather nicotine dependency is associated with mood lability, leading to heightened feelings of stress and depression in many regular smokers.²¹ Stopping smoking is followed by enduring mood improvements.

Action plan

A concentrated effort is required in encouraging smokers with back pain and on benefits to quit. Smokers with back pain and not on benefits also need to quit. However this target audience on benefits is going to be more responsive to financial constraints rather than health education. Quitting would not only provide a general improvement in health but also arrest or reduce the progression of the primary disease (Back pain) for which they were awarded disability living allowance.

In a phased manner this group should be targeted to give up smoking. A programme could be commenced and these individuals could be given a target time of 12 months to stop smoking or to forfeit their right to claim disability living allowance. Continuous monitoring and support should be provided during the period of 12 months. Smoking status can be tested using NicAlert cotinine test strips.²² This programme should not be viewed as an effort to decrease national expenditure by paying out less disability living allowance. It should rather be viewed as a positive action to encourage smokers to quit.

The benefits from the programme are only from the improved health of these individuals. Since smoking is clinically linked to back pain and cessation has shown to reverse some of the pathology in the disc then obviously one of the possible interventions for back pain is to quit smoking.

Conclusion

The harmful effects of cigarette smoking on the human cardiovascular, respiratory and other organ systems are well known. Currently there may not be irrevocable evidence to suggest that smoking causes back pain. However there is overwhelming evidence to suggest a relationship. What is clearly known is that smoking worsens the effects of back pain. Experimental evidence also shows the reversal of some of the pathology in the disc following cessation of smoking. Financial pressures are known to have a greater effect on lower socio economic groups in encouraging them to give up smoking. In this scenario would it not be better for a programme to be initiated to encourage smokers who are on disability benefit for back pain to quit smoking. They could be given support and guidance for 12 months to quit smoking. Failing this 12 month programme would it be beneficial to withdraw disability living allowance benefits for chronic back pain sufferers who continue to smoke. Given the potential health, economic and social benefits to the individual and the society of stopping smoking, such stringent measures may prove to be a good decision.

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Conflicts of interest

None.

References

1. Department of Health The prevalence of back pain in Great Britain in 1998. *Government Statistical Service 1999, London, UK.* 1998
2. Maniatakis N, Gray A The economic burden of back pain in the UK. *Pain.* 2000;84(1):95–103.
3. <http://www.dh.gov.uk/en/PublicHealth/Healthimprovement/Tobacco/index.htm>
4. http://www.statistics.gov.uk/downloads/theme_compendia/GHS06/Smokinganddrinkingamongadults2006.pdf
5. Parrott S, Godfrey C Economics of smoking cessation. *BMJ.* 2004;328(7445):947–949.
6. http://www.statistics.gov.uk/downloads/theme_compendia/GHS06/Smokinganddrinkingamongadults2006.pdf
7. Ernst E Smoking, a cause of back trouble? *Br J Rheumatol.* 1988;15:1557–1564.
8. Deyo RA, Bass JE Lifestyle and low-back pain: the influence of smoking and obesity. *Spine.* 1989;14:501–506.
9. Leboeuf-Yde C Smoking and low back pain: a systematic literature review of 41 journal articles reporting 47 epidemiologic studies. *Spine.* 1999;24(14):1463–1470.
10. Goldberg MS, Scott SC, Mayo NE A review of the association between cigarette smoking and the development of nonspecific back pain and related outcomes. *Spine.* 2000;25(8):995–1014.
11. Kelsey JL An epidemiological study of acute herniated lumbar intervertebral discs. *Rheumatol Rehabil.* 1975;14(3):144–159.

12. Hopper JL, Seeman E The bone density of female twins discordant for tobacco use. *N Engl J Med*. 1994;330(6):387–392.
13. Jayson MIV, Keegan A, Million R, Tomlinson I A fibrinolytic defect in chronic back pain syndromes. *Lancet*. 1984;2(8413):1186–1187.
14. Vogt MT, Nevitt MC, Cauley JA Back problems and atherosclerosis. *Spine*. 1997;22(23):2741–2747.
15. Holm S, Nachemson A Nutrition of the intervertebral disc: acute effects of cigarette smoking. *Ups J Med Sci*. 1988;93(1):91–119.
16. Vogt MT, Hanscom B, Lauerman WC et al. Influence of smoking on the health status of spinal patients: the National Spine Network database. *Spine*. 2002;27(3):313–319.
17. Nemoto Y, Matsuzaki H, Tokuhasi Y et al. Histological changes in intervertebral discs after smoking and cessation: experimental study using a rat passive smoking model. *J Orthop Sci*. 2006;11(2):191–197.
18. <http://www.parliament.the-stationery-office.co.uk/pa/cm200607/cmhansrd/cm070619/text/70619w0031.htm>
19. Gallus S, Schiaffino A, La Vecchia C et al. Price and cigarette consumption in Europe. *Tob Control*. 2006;15(2):114–119.
20. Townsend J, Roderick P, Cooper J (1994) Cigarette smoking by socioeconomic group, sex, and age: effects of price, income, and health publicity. *BMJ*. 2006;309(6959):923–927.
21. Parrott AC Heightened stress and depression follow cigarette smoking. *Psychol Rep*. 2004;94(1):33–34.
22. Cooke F, Bullen C, Whittaker R et al. Diagnostic accuracy of NicAlert cotinine test strips in saliva for verifying smoking status. *Nicotine Tob Res*. 2008;10(4):607–612.