Tri-service Health Questionnaire – 1989

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SUMMARY: An anonymous, self administered health questionnaire survey of the habits and attitudes of servicemen in the 3 Services was conducted. The overall response rate was 75%. This paper reports the results of questions on smoking. The Army had the greatest percentage of smokers, smoked most heavily and had the worst attitude to smoking of the 3 Services. The RAF had the best results in these fields. There was a higher percentage of smokers, who smoke more heavily in Germany/seadraft than UK/shoredraft. There was a rank gradient in percentage smokers, with the lowest ranks smoking the most. A sizeable proportion of the smoking population wish to give up, have tried to do so and feel their Medical Officer should be interested in their smoking habits. A reduction in prevalence of cigarette smoking to less than 30% within 5 years is recommended as a Tri-service Health Policy Goal, with the Army, Tri-Service 16-20 year olds and Private – Corporal rank equivalents and recruits, as specific target groups for intervention. The health promotion strategy should include concerted anti-smoking advice from Medical Officers.

Introduction

The Defence Medical Services Directorate was created in order to formulate Tri-service policy and plans. It was intended that a Healthy Lifestyle Policy be developed, which would contain quantified goals for achievement over time, and allow assessment of progress toward those goals. To achieve maximum health benefits from limited resources it would be necessary to target health promotion strategies, derived from the policy, by area of concern and by population subgroup. The area of concern reported here is smoking. It was decided that health promotion strategies aimed at changing behaviour would benefit from a knowledge of attitudes, as well as habits.

Method

A Health Questionnaire was formulated covering habits and attitudes to exercise, diet, alcohol consumption and smoking. It was to be anonymous and self administered. The questionnaire survey was run by the General Finance Statistical Survey branch of the Ministry of Defence. They selected the sample at random from the Service pay and record computer systems based on service number. Prior to sampling, the overall male population was stratified by Service and within, and each of the 30 sub-groups was sampled separately. The parameters under consideration were rank (where Army rank group is taken to represent the 3 Service equivalents), age group, marital status and location (UK/shoredraft or Germany/seadraft). As expected many of the variables of interest showed an age related pattern. In order that groups with differing age distributions in respect of age related variables could be compared age standardisation by the direct method was employed. The standard population used was the mid 1989 population of all-Services combined, worldwide, and at the ranks included in the survey. Where results from more than one stratum have been combined they

have been weighted to reflect the contribution, as a proportion, which they make to the population as a whole.

Results

Response

Five thousand nine hundred and sixty three questionnaires were distributed in February 1989. Four thousand one hundred and eighty two were returned plus 513 uncompleted because of non contact. The estimated response rate from contact was a minimum of 76% overall, and 75% 77%, and 75% for the RN, Army and RAF. The response rates per rank group ranged between 86-42%, with all rates below 60% being in junior ranks. The overall Tri-service response rate, by location was 51% Germany/seadraft: 49% UK/shoredraft, and by marital status was 70% married: 30% single.

Habits

The age standardised percentage smoking rates for the Services is given at Table 1. The pattern of the Army smoking more than the RN smoking more than the RAF is repeated in the age specific figures. The percentage of light (1-14), moderate (15-24) and heavy (25+) cigarette smokers shows that not only do fewer RAF servicemen smoke than the other Services, but they also smoke fewer cigarettes per day. At least 92% of servicemen are aware of the tar level of the cigarettes they smoke and the age standardised overall rate of smoking high tar cigarettes is 1.2%.

In considering when ex and current smokers started smoking there is little difference between the Services for current smokers. Between 17-21% started within 3 months of joining the Services and 8-10.5% later than this. Ex smokers do show Service differences with a higher percentage starting later than 3 months into service, within 3 months of joining for service, or pre-

service in the RN, Army and RAF respectively.

Ex smokers when questioned about their reasons for giving up were allowed 3 choices of answer. When these are ranked for frequency of answer they consistently show wanting to, fitness and future health as the first, second and third reasons. Stopping because of doctors advice or being unwell ranked equally low.

The Tri-service age standardised smoking rates by location are given at Table 2. The higher smoking rate of those in the Germany/seadraft location is substantiated in the age specific figures. Servicemen in Germany/seadraft smoke more heavily than in UK/shoredraft although there is no difference in the tar content of the cigarettes smoked.

The Tri-service age standardised smoking rates by rank group are at Table 3. This rank gradient is less clearly evident when the Services are considered separately, but the trend is still present. Age specific results show that 41% of the Tri-service 16-20 age group smoke. This population consists almost exclusively of the Pte-LCpl rank group and recruit soldiers.

Married servicemen tend to smoke less heavily, and smoke lower tar cigarettes than single men, on age standardised results. However the age specific rates show a definite increasing trend to heavy smoking with age in married servicemen, and by the age of 36-40, 25% of married smokers are smoking 25 or more cigarettes per day.

Attitudes

The Tri-service age standardised percentage response to the questions "Do you believe your future health/fitness is affected by whether or not you smoke" was over 87% positive. Within these results there was a consistent single Service difference with a higher percentage of the RAF than the RN than the Army saying "Yes", and a lower percentage of the RAF than the RN than the Army saying "No". Likewise less smokers than non-smokers believe in the ill effects on their health and fitness of smoking. There was a rank gradient in responses to these questions with a smaller percentage of junior ranks than senior ranks believing in the ill effects of smoking on their health and fitness.

Participants were asked how important they thought smoking was as a cause of illness in men. Overall 74.2% thought it was very important, 21.12% thought it was fairly important and 3.4% thought it was not important. The importance ratings given by the Army were lower than the RN which were lower than the RAF. The results from this impersonal question were compared with the results from the more personal question on future health and smoking. Ninety eight percent of those believing that smoking would affect their health were consistent in believing that smoking is a fairly or very important cause of illness in men. Only 27% of those not believing smoking would effect their health were consistent in believing that it was not an important cause of illness in men.

Table 1 – Tri-service Smoking Habit Results by Service Age Standardised Percentages

Smoking Category	Number of Responses			
	All Services	RN	Army	RAF
	4182	1349	1378	1455
	%	%	%	%
Current Cigarette	35.10	35.84	41.04	25.98
Pipe/Cigar Ex Cigarette	2.62	3.31	2.13	2.84
Ex Cigarette	16.36	16.21	15.75	17.46
Pipe/Cigar Non Cigarette	1.02	1.46	0.77	1.02
Ex Pipe/Cigar Non Cigarette	3.79	4.03	3.21	4.27
Never Smoked	41.11	39.15	37.10	48.44

**Table 2
Tri-service Smoking Habit Results by Location
Age Standardised Percentage**

	UK/Shoredraft	Germany/Seadraft
Current Cigarette		
Smoker	31.49%	40.82%
Never Smoker	42.78%	38.14%

**Table 3
Tri-service Smoking Habit Results by Rank Group
Age Standardised Percentages**

Rank	Cigarette Smokers	Never Smokers
Pte-LCpl	48.11%	35.42%
Cpl	39.61%	39.26%
Sgt-WO	28.07%	43.43%
2Lt-Capt	17.57%	47.75%
Maj-Col	9.62%	67.38%

When all participants were asked if they were worried or concerned about their smoking habit the Tri-Service results were 27.9% Yes: 70.65% No. Within this figure the Army were more concerned than the RN, who were more concerned than the RAF, which fits the smoking rate pattern of the single Services. The figures suggest that 100% of the Maj-Col rank group are concerned about their smoking habits, and in each of the other rank groups that 75% or more smokers are concerned about their smoking habits. Overall 19.84% of smokers said that they enjoyed smoking with no wish to stop, and 72.71% said that they enjoyed smoking but wished to stop. Only 19.2% of smokers had never made any attempt to stop smoking.

The opinions of the participants was sought on whether their uniformed Medical Officers (MOs) should be interested in their smoking habits and if, in their

experience, they were. The Tri-service results were that overall 75% thought their MO should be interested in smoking habits, but fewer people thought that MOs were interested than thought they were not. There was no noticeable single Service difference in response. A rank trend in responses, interrupted at Sgt-WO level, was recorded with higher percentages thinking that MOs should be interested in smoking habits in higher rank groups. Quoted experience as to whether MOs are interested in the smoking habits of servicemen are similar in all ranks except Maj-Col, and reflect the Tri-service figure. Seventy six percent of Maj-Col thought MOs were interested in smoking habits so someone at least is receiving the message.

Neither marital status nor location produced results materially different from the Tri-service results presented above.

Discussion

The population which was surveyed were trained servicemen serving in UK (excluding Northern Ireland) or Germany in the case of the Army and RAF, or on shoredraft or seadraft in the case of the RN. They constitute 91% of the UK Service manpower (Statement of the Defence Estimates 1989). This choice minimised bias from sex, operational posting and faraway places, whilst still enabling a view to be taken of the effects of posting at home or abroad. The nursing profession forms a high percentage of the servicewoman population (for instance, 50% of Army female officers and 20% of Army other ranks). A survey of servicewomen should be undertaken separately.

The response overall was good despite the fact that no reminders were sent. The poorer response from junior ranks, observed in previous studies(1) would suggest that they, at least, should receive reminders. Any response bias due to the low response rate is likely to present the best case. Thus it cannot be concluded that non-responders smoke less than responders. Ideally the response rate should exceed 80% to allow reasonable statistical analysis. However since there has never previously been any attempt to produce quantified estimates of Tri service smoking habits or attitudes, and since the results produced do not run counter to perceived wisdom within the Services or in civilian life (*vide infra*) it is maintained that the results obtained are adequate to guide policy making and policy decisions.

The baseline data show a heterogeneity to exist between the 3 Services, as regards smoking habit and attitude. This may be due to the different socioeconomic classes from which, and to which, they are recruited (as evidenced by different regional recruitment, selection requirements and job specifications).

The reasons for stopping smoking were similar between Services, with present and future health concerns not the major factor. This is as might be expected in a young fit population, and supports the contention that people do not necessarily change health

related behaviour for health reasons(2). Of current smokers 25-31.5% started smoking within 3 months of joining the Services (that is during recruit training) or later. The Services therefore have a sizeable potential for primary prevention. The majority of current smokers have attempted to stop at least once and the majority express a wish to stop. In Marsh's experience this pattern of behaviour is encouraging and is likely to result in eventual successful cessation(3).

The Tri-service smoking rate for 16-20 year olds is 41%. The General Household Survey 1986 smoking rates for 16-19 year old males was 30% and for 20-24 year olds was 41%(4). The secondary school survey 1988 recorded smoking rates in 15 year old males as 17%(5). Thus the age group 16-19/20, and 20-24 is one in which many people start to smoke. The Service results would suggest that either they recruit selectively from the 16-18 year old smoking population or there is more incentive to start smoking in this age group within the Services.

A higher percentage of personnel smoke in Germany/seadraft than in the UK/shoredraft location, and they smoke more heavily. This has always been suspected but no supporting data previously existed. One hypothesis for this must be the duty free supply of tobacco in the Germany/seadraft location, although separation, turbulence and social isolation are also contenders.

A rank gradient for smoking was also believed to exist and the Health Questionnaire results provide evidence of this, and quantify it. The findings equate to the socioeconomic gradient seen in civilian life although rank and socioeconomic status are not interchangeable.

Marital status has an equivocal effect on smoking rates. Being single is the natural state in younger age groups and marriage that of older age groups. Any effects of marital state may thus be obscured by age effects. The age groups 21-25 and 26-30 have the most equal distribution of marital states and do not show consistent differences in behaviour.

The Army belief in the adverse effects of smoking on both their fitness and health is less than the RN which is less than the RAF. This is as might be expected from a knowledge of their smoking rates. It suggests that acceptance of adverse effects from smoking may affect smoking rates, which has been shown in other studies(3).

The inconsistencies in answers comparing responses on effects of smoking on their health with responses on effects of smoking as a cause of illness in men were identical with those of Marsh(6). Marsh felt that the inconsistencies were due to smokers not wanting to accept the ill effects of smoking because this would mean accepting that they were deliberately harming themselves.

The Tri-service opinion on whether uniformed MOs should be interested in smoking habits was very similar to the male responses recorded in a General Practice survey of 17-70 year olds(7). However the responses to whether MOs were interested differed from the General

Practice survey. Less servicemen than civilians thought their doctor was interested (39%:54%), and more thought that they were not (47%:16%) civilian "don't know" rates were higher than those of servicemen (30%:12%). The figures are not directly comparable but they suggest that servicemen have more firm ideas about their MOs interest (less "don't know" answers) than civilians. This may be due to high contact rates with service MOs, either professionally or socially, but, if so, much of this contact has missed the opportunity to get the anti smoking message across. Several papers record the effectiveness of GP intervention in reducing smoking rates(8,9).

Conclusion

The results of the Tri-service Health Questionnaire are an acceptable (and the only) database from which to formulate Healthy Lifestyle policy goals, and suggest health promotion strategies to achieve these goals. The Tri-service policy goal recommended for smoking is a reduction in prevalence of cigarette smoking to less than 30% within 5 years. These figures are arbitrary, but are feasible and achievable, and could reliably be identified by a future similar questionnaire survey.

The Army have the greatest percentages of smokers of the 3 Services; the lowest ranks have the greatest percentage of smokers of all the ranks; the youngest age groups have the greatest percentage of smokers of all age groups. Thus, within the above policy goal, these groups should be targeted in the health promotion strategies. The percentage of smokers who started smoking after they joined the Services is such that the health promotion strategies should be two-fold. The first strategy should aim to stop personnel start smoking; the second strategy should aim to start personnel stop smoking. The smoking rates of the Army, the Tri-service Pte-LCpl rank group are so high that a reduction of 10% on present smoking levels would be a feasible and achievable aim.

It can be hypothesised that tax free concessions on tobacco are related to smoking rates. This hypothesis should be tested, as a health promotion strategy, by the removal of the concessions.

A sizeable proportion of the smoking population wish to give up, and have tried to do so. Most feel that their MO should be interested in their smoking habit, but many feel that they are not. Civilian experience is that doctors can initiate a permanent change in smoking rates in their patients. Therefore a concerted anti smoking drive by MOs should be a mainstay of the health promotion strategy. In order to be most successful it may be necessary to educate the MOs on the non health reasons to stop smoking.

There is no evidence that servicemen differ fundamentally from their civilian colleagues in smoking and therefore the Services can use the experience, methods and materials of the civilian world to achieve their aims. This will be far more cost beneficial and cost effective than developing Service specific ones.

The final part of the health promotion strategy must be to evaluate its success which will mean, at a minimum, repeating the Health Questionnaire in 5 years time.

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